



Working Draft of AICPA Accounting and Valuation Guide

**Valuation of Privately-Held-Company Equity
Securities Issued as Compensation**

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Prepared by the Equity Securities Task Force

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WORKING DRAFT

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Preface

About This AICPA Accounting and Valuation Guide

This AICPA Accounting and Valuation Guide (guide) has been developed by the AICPA Equity Securities Task Force (task force). This guide provides guidance and illustrations for preparers of financial statements, independent auditors, and *valuation specialists*^{1 2} regarding the accounting for, valuation of, and disclosures related to, privately-held company equity securities issued as compensation. The valuation guidance in this guide is focused on measuring *fair value* of privately-held company equity securities underlying stock-based compensation awards for financial reporting purposes.

The financial accounting and reporting guidance contained in this guide has been reviewed and approved by the affirmative vote of at least two-thirds of the members of the Financial Reporting Executive Committee (FinREC), which is the designated senior committee of the AICPA authorized to speak for the AICPA in the areas of financial accounting and reporting. Conforming changes made to the financial accounting and reporting guidance contained in this guide will be approved by the FinREC Chair (or the FinREC chair's designee). Updates made to the financial accounting and reporting guidance in this guide exceeding that of conforming changes will be approved by the affirmative vote of at least two-thirds of the members of FinREC.

This guide does the following:

- identifies certain requirements set forth in the *FASB Accounting Standards Codification*[®] (ASC).
- describes FinREC's understanding of prevalent or sole practice concerning certain issues. In addition, this guide may indicate that FinREC expresses a preference for the prevalent or sole practice, or it may indicate that FinREC expresses a preference for another practice that is not the prevalent or sole practice; alternatively, FinREC may express no view on a matter.

¹ Words or terms defined in the glossary are set in italicized type the first time they appear in this guide.

² Although this guide uses the term *valuation specialist*, VS section 100, *Valuation of a Business, Business Ownership Interest, Security, or Intangible Asset*, which is part of *AICPA Professional Standards*, defines a member who performs valuation services as a *valuation analyst*. The term *valuation specialist*, as used in this guide, is synonymous with the term *valuation analyst*, as used in *AICPA Professional Standards*.

When referring to the *valuation specialist* within this guide, it is generally presumed that the valuation specialist is an external party. However, if individuals within the entity possess the abilities, skills, and experience to perform valuations, they can also serve in the capacity of a valuation specialist.

- identifies certain other, but not necessarily all, practices concerning certain accounting issues without expressing FinREC's views on them.
- provides guidance that has been supported by FinREC on the accounting, reporting, or disclosure treatment of transactions or events that are not set forth in the FASB ASC.

Accounting guidance for nongovernmental entities included in an AICPA guide is a source of nonauthoritative accounting guidance. The FASB ASC is the authoritative source of U.S. accounting and reporting standards for nongovernmental entities, in addition to guidance issued by the SEC. AICPA members should be prepared to justify departures from U.S. generally accepted accounting principles (GAAP), as discussed in the "Accounting Principles Rule" (ET sec. 1.320.001 and 2.320.001) of the AICPA Code of Professional Conduct.³

AICPA members who perform engagements to estimate value that culminate in the expression of a conclusion of value or a calculated value are subject to the requirements of VS section 100, *Valuation of a Business, Business Ownership Interest, Security, or Intangible Asset*, which is part of AICPA *Professional Standards*.

This guide does not include auditing guidance;⁴ however, auditors may use it to obtain an understanding of the accounting requirements and the valuation process applicable to privately-held company equity securities underlying stock-based compensation awards.

³ All ET sections can be found in AICPA *Professional Standards*.

⁴ AU-C section 540, *Auditing Accounting Estimates and Related Disclosures*, in AICPA *Professional Standards* addresses the auditor's responsibilities relating to accounting estimates, including fair value accounting estimates and related disclosures, in an audit of financial statements. Auditors may also need to consider guidance in applicable PCAOB standards, such as AS 2501, *Auditing Accounting Estimates, Including Fair Value Measurements*.

Auditors may also find it helpful to refer to the AICPA Audit Guide *Special Considerations in Auditing Financial Instruments*, which, among other things, addresses the auditor's responsibilities relating to auditing accounting estimates, including fair value accounting estimates, and related disclosures.

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Introduction

.01 The purpose of this guide is to provide guidance to privately held enterprises¹ at all stages of development regarding the valuation of their equity securities underlying stock-based compensation awards. The focus of this guide is on estimating the fair value of individual common shares or other equity securities that constitute a minority of the outstanding securities. Although many valuation methods use the *enterprise value* as an input, as discussed in paragraph .09, this guide does not focus on the valuation of the enterprise as a whole.² This guide also addresses certain accounting and disclosure matters related to privately-held company equity securities issued as compensation. This guide is intended to provide assistance to management and boards of directors of enterprises that issue stock-based compensation awards; valuation specialists; auditors; and other interested parties, such as creditors. This guide is not intended to serve as a detailed “how to” guide but, rather, to provide (a) an overview and understanding of the valuation process and related financial reporting considerations, and (b) best practice recommendations.

.02 For a number of reasons, a privately held enterprise may grant stock, options, warrants, or other similar securities to employees and others in exchange for goods or services, or as sales incentives. Given the absence of an *active market*, the fair value of the privately-held company equity securities underlying stock-based compensation awards is estimated based on a variety of enterprise- and industry-specific factors for the purpose of measuring the cost of the transaction and properly reflecting it in the enterprise’s financial statements.

.03 The value of common shares constitutes one of the inputs to option pricing models when options, rather than shares, are the equity securities issued. Companies may also issue securities other than common stock or options as compensation; for example, the valuation for financial reporting purposes of profits interests issued by a limited liability company would also fall within the scope of this guide.³ The principles in this guide may also be applied to the valuation of other securities within the capital structure, such as *minority interests* in preferred stock, warrants on preferred or common stock, or other claims on the enterprise; however, those valuations were not the primary focus of the guide.

Key Changes

.04 This guide is an update of the 2013 edition of this guide. These updates reflect the continued evolution of what the Equity Securities Task Force (task force) considers to be best practices both in valuation and in the application of GAAP in this area, as well as changes in the authoritative accounting guidance since the date of the last edition of the guide. The updates were informed by the task force’s experience, considering the increase in observable transactions (*secondary transactions*) in the marketplace over the period since the publication

¹ This guide uses the terms *enterprise*, *business*, *entity*, and *company* interchangeably.

² It should be noted that the minority interest discussed in this guide is from the perspective of the holder. This is different from a noncontrolling interest (also sometimes referred to as minority interest) addressed in FASB *Accounting Standards Codification* (ASC) 810, *Consolidation*, which is from the perspective of the parent.

³ Throughout the guide, the term *common stock* should be considered to include common stock and other junior securities with similar rights and preferences. Similarly, the term *preferred stock* should be considered to include preferred stock and other senior securities with similar rights and preferences.

of the 2013 edition, indicating that it would likely be appropriate to place more weight on these transactions. In addition, these transactions are often at prices that may indicate that common stock and preferred stock are more similar in value than was previously thought.

.05 There are substantive changes to a number of sections of this guide in the current update. In particular, the task force believes that the updated guidance on allocating value between different classes of securities in complex capital structures (chapter 6) and the impact of secondary transactions (chapter 8) will likely have significant implications for financial reporting valuations of private company common stock underlying stock-based compensation awards. See further details of these areas in paragraph .18.

Background

.06 The fair value of securities underlying stock-based compensation awards is typically estimated by assessing relevant factors at the measurement date. Factors to consider include:

- recent transactions in the common stock of the enterprise, if any;
- recent issuances of preferred stock and the associated economic and control rights relative to the rights associated with common stock;
- the enterprise's financial condition and operating results;
- the enterprise's stage of operational development and progress in executing its business plan;
- significant product or service development milestones and the introduction of new product offerings;
- the composition of, and anticipated changes in, the management team;
- the lack of a public market for the common stock; and
- the prospects and anticipated timing of any potential *liquidity event*, such as a future public offering of common stock or a sale of the enterprise.

.07 Historically, some privately held enterprises, especially early-stage enterprises, have used general “rule of thumb” discounts in estimating the fair value of common stock, such as estimating the value as a specified percentage of the price of the most recent round of preferred stock or at a discount to the anticipated initial public offering (*IPO*) price for an enterprise actively considering an *IPO*. Although the fair value of equity securities of an enterprise considering an *IPO* may be less than the ultimate offering price, such “rule of thumb” discounts are inappropriate because they are difficult to substantiate objectively and do not result in a high-quality fair value estimate.⁴

.08 In practice, many companies engage a valuation specialist to provide a valuation analysis that they may consider as one factor in determining the fair value of the equity

⁴ At the September 20, 2001, *Emerging Issues Task Force (EITF)* meeting, during the discussion of matters from the EITF Agenda Committee meeting, the EITF observed that the use of a “rule of thumb” is not (and never has been) an appropriate method for estimating the fair value of a company's common stock. The Securities and Exchange Commission (SEC) observer noted that guidance regarding valuation of equity instruments can be found in section II.I. of the Division of Corporation Finance's *Current Accounting and Disclosure Issues* (August 31, 2001). In that guidance, the SEC staff noted, among other issues, its concerns about reliance on undocumented or unsubstantiated “rules of thumb.”

securities underlying their stock-based compensation awards. This guide defines a *valuation specialist* as “[a]n individual recognized as possessing the abilities, skills, and experience to perform valuations. A valuation specialist may be external or internal. When referring to the valuation specialist in this guide, it is commonly presumed that it is an external party, but if individuals within the entity possess the abilities, skills, and experience to perform valuations, they can also serve in the capacity of a valuation specialist.” Regardless of whether fair value measurements are estimated with the assistance of an external third party or internally by the management team, the company’s management and Board of Directors are ultimately responsible for the fair value measurements that are used to prepare the company’s financial statements and for the underlying assumptions used in developing these fair value measurements. Practitioners are expected to understand how the valuation techniques used for measuring fair value comply with accounting principles generally accepted in the United States of America (GAAP); assess reasonableness of the inputs, assumptions, and valuations; and evaluate adequacy of the related disclosures.

.09 Throughout this guide, estimating fair value is discussed in two different contexts: valuation of privately-held company equity securities and valuation of an enterprise. The ultimate objective of this guide is to provide guidance on valuation of privately-held company equity securities underlying stock-based compensation awards. However, many valuation methods (often referred to as *top-down methods*) involve first valuing the enterprise, subtracting the value of debt for the purpose of valuing equity (if needed), and then using that equity valuation as a basis for allocating the *equity value* among the enterprise’s equity securities, including individual common shares or other equity securities that constitute a minority of the outstanding securities. Wherever valuation techniques⁵ for enterprise valuation are discussed in this guide, it is important to understand that those valuation techniques are presented solely for the ultimate purpose of valuing the enterprise’s equity securities underlying stock-based compensation awards.

.10 This guide identifies what the task force members perceive as best practices for the valuation of, as well as certain accounting and disclosure matters related to, privately-held company equity securities issued as compensation.

.11 In the context of discussing accounting issues or concepts, the word *should* is used in this guide only if a particular statement is in accordance with accounting principles generally accepted in the United States of America (GAAP). Phrases such as *the task force believes* or *the task force recommends* are used to indicate the task force’s opinion if a particular statement in this guide, although not in conflict with GAAP, relates to an issue for which guidance is not specifically prescribed by GAAP or if there are alternative treatments of the particular issue. In the context of discussing valuation issues or concepts, no specific valuation standards exist that address detailed aspects when valuing privately-held company equity securities issued as compensation. As a result, in this context, the word *should* is generally used in this guide to

⁵ FASB ASC 820, *Fair Value Measurement*, refers to valuation approaches and valuation techniques; however, Statement on Standards for Valuation Services (SSVS) No. 1, *Valuation of a Business, Business Ownership Interest, Security, or Intangible Asset* (AICPA, *Professional Standards*, VS sec. 100), refers to valuation approaches and methods (not techniques). SSVS No. 1 defines *valuation method* as “[w]ithin approaches, a specific way to determine value.” This definition is consistent with the meaning attributed to valuation techniques in FASB ASC 820. Also, in practice, many valuation techniques are referred to as methods (for example, guideline public company method, guideline company transactions method, discounted cash flow method, real options method, asset accumulation method, yield method, and so forth). As a result, this guide uses the terms technique and method interchangeably to refer to a specific way of determining value within an approach.

indicate the task force's opinion as a whole, although individual or firm positions may differ. This guide is not intended to set valuation standards or interpret any other valuation standards that exist in practice.

.12 This guide includes a number of illustrative examples. These examples are not intended to provide a comprehensive valuation analysis, but rather to highlight the concepts illustrated in that example. Also, these examples are not intended to indicate that the valuation approach or method illustrated is the only appropriate way for valuing the equity securities underlying the stock-based compensation awards in the situation described; other approaches may be acceptable. Furthermore, the assumptions and inputs used in these examples are illustrative only. Facts and circumstances of each individual situation should be considered when performing an actual valuation. The task force recognizes that some of these examples are fairly detailed. The purpose of providing such a level of detail is to illustrate the thought process and underlying calculations involved in estimating fair value in that example. The examples are not intended to reflect documentation requirements. Please note that some totals in the examples may not add due to rounding.

.13 This guide cites the most recent data available to the task force from various research studies and other sources. Readers are cautioned that such data may not reflect the business environment as of their reading and are presented only for the purpose of explaining the concepts in this guide; more recent data may be available elsewhere. When performing a valuation, readers are also cautioned not to use the data in this guide as the sole basis for assumptions and inputs used in the valuation. Rather, the facts and circumstances of the enterprise and its equity securities should be considered in determining the appropriate data to use in the valuation.

Scope

.14 The scope of this guide is limited to valuations of equity securities issued by privately held enterprises (including privately held enterprises that have made a filing with a regulatory agency in preparation for the sale of any class of their equity securities in a public market) for use in the issuer's financial statements. This guide is applicable to transactions in which an entity exchanges its equity instruments for goods or services or as sales incentives. It also applies to share-based payments to employees, nonemployees and customers. The scope focuses on the valuation of the securities underlying the stock-based compensation awards, rather than the valuation of the stock-based compensation awards themselves; therefore, the scope does not include entities that issue stock-based compensation awards where the underlying securities are publicly traded. The scope does not include enterprises that issue equity securities as part of a business combination. Although this guide may contain some useful information, such as valuation techniques and best practices relevant to such valuations, the numerous and varied aspects of business combinations were not considered or contemplated in the preparation of this guide.⁶

.15 Note that the scope of this guidance is limited to financial reporting under US GAAP. Although this guidance may have some use in valuations of privately-held-company equity securities issued as compensation for tax purposes, it was not written intending to address

⁶ The [AICPA Accounting and Valuation Guide, Business Combinations](#), provides accounting and valuation guidance for business combination transactions.

those valuations. The determination of appropriate values under the Treasury Regulations is beyond the scope of this guide.

.16 Further note that this guide is focused on certain accounting matters and valuations of privately-held-company equity securities underlying compensation awards that are within the scope of FASB *Accounting Standards Codification* (ASC) 718, *Compensation—Stock Compensation*. Although this guide may contain some information that could be considered relevant to valuations associated with portfolio company investments held by investment companies within the scope of FASB ASC 946, *Financial Services—Investment Companies*, (including *private equity funds*, *venture capital funds*, hedge funds, and business development companies), the numerous and varied aspects of these other entities were not considered or contemplated in the preparation of this guide. The AICPA has published a separate Accounting and Valuation Guide, *Valuation of Portfolio Company Investments of Venture Capital and Private Equity Funds and Other Investment Companies*, which provides guidance on valuing such investments in the context of FASB ASC 946 and FASB ASC 820, *Fair Value Measurement*.

.17 Because securities issued to employees, nonemployees or customers in exchange for goods and services or as sales incentives are almost invariably minority interests (see footnote 2 in paragraph .01), the focus of this guide is on the valuation of minority interests.

Information Included in This Guide

.18 This guide provides the task force’s views regarding best practices in the following areas:

- FASB ASC 718 provides guidance on how to account for transactions in which an entity exchanges its equity instruments for goods or services, or as sales incentives. FASB ASC 718 addresses share-based payments to employees, nonemployees and customers. In general, FASB ASC 718 utilizes the concept of fair value; however, the application of fair value in these arrangements does not factor in service and performance-based vesting provisions⁷ and provides for a few other exceptions to fair value (for example, clawback or *reload features*). As such, the measurement method in FASB ASC 718 is referred to as *fair value based*. FASB ASC 820 defines fair value and establishes a framework for measuring it. Although the definitions of *fair value* in FASB ASC 718 and FASB ASC 820 are slightly different, and stock-based compensation awards measured in accordance with FASB ASC 718 are excluded from the scope of FASB ASC 820,⁸ the task force believes that FASB ASC 820 contains concepts that practitioners may find helpful when estimating fair value in connection with share-based payment transactions. Therefore, the task force recommends following the measurement guidance in FASB ASC 820 when accounting for share-based payment transactions unless it is inconsistent with the guidance in FASB ASC 718. See chapter 1, “Concepts of Fair Value of Equity Securities.”
- The objective of this guide is to describe best practices for estimating the fair value of private company equity securities underlying stock-based compensation awards. Because

⁷ Note that market-based conditions are not considered to be “vesting” conditions as described in FASB ASC 718 and are typically incorporated into the fair value-based measurements under the standard.

⁸ Note that arrangements in the scope of FASB ASC 718-40, which addresses employee stock ownership plans, are included in the scope of FASB ASC 820.

the value of the enterprise and the value of the securities within the enterprise are related, the guide also discusses factors to be considered in estimating the value of the enterprise and the equity within the enterprise. See paragraph .09.

- According to FASB ASC 820-10-35-9, fair value should be estimated “using the assumptions that market participants would use in pricing the asset or liability, assuming that market participants act in their economic best interest.” *Market participants* are defined in FASB ASC Master Glossary as

Buyers and sellers in the principal (or most advantageous) market for the asset or liability that have all of the following characteristics:

- a. They are independent of each other, that is, they are not related parties, although the price in a related-party transaction may be used as an input to a fair value measurement if the reporting entity has evidence that the transaction was entered into at market terms
- b. They are knowledgeable, having a reasonable understanding about the asset or liability and the transaction using all available information, including information that might be obtained through due diligence efforts that are usual and customary
- c. They are able to enter into a transaction for the asset or liability
- d. They are willing to enter into a transaction for the asset or liability, that is, they are motivated but not forced or otherwise compelled to do so.

In the context of this guide, the asset to be measured is the equity securities underlying stock-based compensation awards, and the relevant market participants are investors who might, in the ordinary course of business, seek such an investment, given the characteristics of the company and of the specific position being valued. See chapter 2, “Market Participant Assumptions.”

- This guide focuses on privately-held company equity securities underlying stock-based compensation awards. Observable market prices of identical or similar equity instruments (held by other parties as an asset) in active markets are the best evidence of fair value and, if available, should be used as the basis for the measurement of equity securities underlying stock-based compensation awards. If observable market prices of identical or similar equity securities of the entity are not available (which is typically the case for privately-held company equity securities underlying stock-based compensation awards), the fair value of these equity securities should be estimated by using an appropriate valuation technique, maximizing the use of relevant observable inputs and minimizing the use of *unobservable inputs*. The three approaches to estimating the value of an enterprise and its securities are the *market*, *income*, and *asset approaches*.⁹ See chapter 3, “Overview of Valuation

⁹ FASB ASC 820 describes three valuation approaches: market, income, and cost. The concepts underlying FASB market, income, and cost approaches apply broadly to the valuation of discrete assets and business enterprises. Within FASB’s cost approach concept, practitioners distinguish valuations of individual assets and business enterprises by using different terminology. The cost approach is said to have been applied when valuing individual assets, and the asset approach is said to have been applied when valuing business enterprises. The *International Glossary of Business Valuation Terms*, which has been adopted by a number of professional societies and organizations, including the AICPA, and is included in appendix B of VS section 100, defines

Approaches.” Valuation specialists generally consider more than one valuation technique, selecting a valuation technique or techniques that are appropriate for the circumstances. It is common for the results of one valuation technique to be used to corroborate or otherwise be used in conjunction with one or more other valuation techniques:

- The *market approach* bases the value measurement on market data (for example, valuing an enterprise based on values for comparable public companies or similar transactions or valuing securities based on transactions in similar securities). Another method for valuing an enterprise within the market approach is to derive an indication of the total *equity value* from a recent transaction involving the company’s own securities (for example, a recent financing round).
 - The *income approach* seeks to convert future projected cash flows into a present value for the enterprise or its securities.
 - The *asset approach* estimates the value of an enterprise or its securities based on the principle that the equity value is equivalent to the values of its individual assets net of its liabilities.
- The next chapters explore the application of these broad techniques in greater detail as it pertains to the valuation of debt instruments as well as equity securities in the context of both simple and complex capital structures. Key concepts covered in these chapters include:
 - When estimating the fair value of equity securities in an enterprise that has debt, consider the value of debt for the purpose of valuing equity based on the expected time horizon through the liquidity event. Specifically, in situations where the debt has a below market coupon, the equity holders would benefit from that cost savings over time. See chapter 4, “Value of Debt for the Purpose of Valuing Equity.”
 - When estimating fair value for securities in an enterprise, measure the enterprise value considering the cash flows under current ownership and the *required rate of return* for the *investors who in aggregate have control of the business*. However, in many cases, this enterprise value (measured from the perspective of the investors who in aggregate have *control* of the business) will be consistent with the enterprise value measured from the perspective of a market participant acquiring the business as a whole. See chapter 5, “Valuation of Equity Securities in Simple Capital Structures.”
 - When estimating fair value for securities in complex capital structures, confirm that the allocation of value between the preferred and common stock is consistent with market participant assumptions regarding the value of the *liquidation preferences* of the preferred stock. To corroborate the selected method, test the implied credit spread and percentage of the value of the preferred stock that is attributed to the liquidation preferences. The current version of this guide reflects evolving best practices to better align common stock values with trends that the task force has observed in the *secondary market* since the issuance of the previous version of this guide. In particular, the guide highlights a number of challenges in the application of various valuation techniques used to allocate the value between preferred and

asset approach as “[a] general way of determining a value indication of a business, business ownership interest, or security using one or more methods based on the value of the assets net of liabilities.” This guide addresses valuation of securities within privately held enterprises. As a result, this guide focuses on the three approaches that can be used to value an enterprise (market, income, and asset) and only briefly describes the cost approach in the context of valuing individual assets.

common stock under evolving best practices and emphasizes the importance of critically evaluating the key assumptions used in the selected allocation methodology, especially when using an option pricing method. See chapter 6, “Valuation of Equity Securities in Complex Capital Structures.”

- In standard valuation theory, the value of an enterprise or the equity securities in an enterprise may be measured on a controlling or *minority interest* basis and on a marketable or nonmarketable basis. Therefore, it is important to consider control features and the degree of marketability of the securities being valued when estimating the *fair value* of a minority interest in an enterprise. See chapter 7, “Control and Marketability.”
- Private companies frequently complete *primary transactions* that involve issuing equity securities, either to raise funds or in connection with other negotiations. In addition, investors or employees who hold equity securities may sell securities to other investors or unrelated third parties in a *secondary transaction* or may sell securities back to the company in certain circumstances. It is important to calibrate to primary transactions, secondary transactions and company repurchases of company securities for evaluating and assessing their impact on the fair value of the equity securities underlying stock-based compensation awards. For companies that have secondary transactions, it is important to consider the *principal market* and the relevance of the secondary transactions relative to other indications of value. In addition, it is important to consider what the secondary transactions imply about market participants’ views on value. See chapter 8, “Inferring Value From Transactions in a Private Company’s Securities,” especially paragraphs 8.09 and 8.52.
- This guide also discusses certain accounting and disclosure considerations for stock-based compensation awards, including disclosure requirements in FASB ASC 718 and FASB ASC 275, *Risks and Uncertainties*. Secondary transactions or repurchases of company securities should be assessed for a compensatory element and the guide provides a framework for this assessment. In addition, entities that file for an initial public offering (IPO) of their equity securities should consider SEC guidance on disclosures in connection with an IPO. See chapter 9, “Selected Accounting and Disclosure Matters.”
- Finally, the guide also includes the following other information that is designed to provide insights and tools that will benefit various users of this guide, including financial statement preparers, auditors, and investors:
 - Chapter 10 includes “Frequently Asked Questions” that provide additional discussion of certain issues in a question and answer format.
 - Appendix A, “Valuation Reference Guide,” provides certain calculations and research that may be useful in estimating fair values.

Chapter 1

Concepts of Fair Value of Equity Securities

- 1.01** Financial Accounting Standards Board (FASB) *Accounting Standards Codification* (ASC) 718, *Compensation—Stock Compensation*, provides guidance on how to account for transactions in which an entity exchanges its equity instruments for goods or services, or as sales incentives. FASB ASC 718 addresses share-based payments to employees, nonemployees and customers.
- 1.02** In general, FASB ASC 718 utilizes the concept of fair value. Under FASB ASC 718, *fair value* is defined as “[t]he amount at which an asset (or liability) could be bought (or incurred) or sold (or settled) in a current transaction between willing parties, that is, other than in a forced or liquidation sale.”
- 1.03** That definition refers explicitly only to assets and liabilities, but the concept of fair value in a current exchange embodied in that definition applies equally to the equity instruments subject to FASB ASC 718. According to paragraphs 10–11 of FASB ASC 718-10-55, observable market prices of identical or similar equity or liability instruments in active markets are the best evidence of fair value and, if available, should be used as the basis for the measurement of equity and liability instruments awarded in a share-based payment transaction. If observable market prices of identical or similar equity or liability instruments of the entity are not available, the fair value of equity and liability instruments awarded should be estimated by using an appropriate valuation technique.

Interaction of FASB ASC 718 and FASB ASC 820

- 1.04** The measurement of stock-based compensation awards issued to recipients is described in FASB ASC 718-10-30 as being “fair-value-based”, because the guidance in that Topic describes certain specified treatments for vesting conditions, contingent features (for example, clawback or reload features) and other terms of stock-based compensation awards that are exceptions to fair value. However, one of the inputs into the measurement of the award is the price, or fair value, of the equity security underlying the stock-based compensation award. If there is a quoted market price for an identical or similar share of stock in an active market, that would be the fair value of the stock.¹ If not, the entity will need to determine the fair value of the stock using an appropriate valuation technique.
- 1.05** A valuation performed for the purpose of valuing the privately held company equity securities underlying stock-based compensation awards in accordance with accounting principles generally accepted in the United States of America should be based on the definition of *fair value* used in FASB ASC 718. The definition of fair value in FASB

¹ Please refer to chapter 8, “Inferring Value From Transactions in a Private Company’s Securities,” for further discussion.

ASC 718 is slightly different from the definition in FASB ASC 820, *Fair Value Measurement*, in which *fair value* is defined as “[t]he price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.”

- 1.06** Although the definitions of fair value in FASB ASC 718 and FASB ASC 820 are different, FASB ASC 820 also established a framework for measuring fair value, and the Equity Securities Task Force (task force) believes that it is appropriate to apply this framework when valuing equity securities underlying stock-based compensation awards in accordance with FASB ASC 718. FASB ASC 820 is a broad principles-based standard, and the measurement guidance in FASB ASC 820 applies when another FASB ASC Topic requires or permits fair value measurements or disclosures about fair value measurements.
- 1.07** FASB ASC 820-10-15-2 does indicate that the guidance in FASB ASC 820 does not apply to accounting principles that address share-based payment transactions. In particular, as noted in paragraph 1.04, the determination of fair value of the overall award in share-based payment arrangements does not factor in certain vesting provisions and provides for certain other exceptions to fair value (for example, clawback and reload features). As such, these measures are considered fair value-based measures rather than fair value measures. Therefore, even though some measurements used within FASB ASC 718 may be fair value measures, for practical reasons, FASB decided to exclude FASB ASC 718 in its entirety from the scope of FASB ASC 820.²
- 1.08** Because the rationale for excluding FASB ASC 718 from the scope of FASB ASC 820 was that some measurements required by FASB ASC 718 are fair-value based measures rather than fair value measures, and, while FASB ASC 820 technically does not apply when valuing private company equity securities underlying stock-based compensation awards granted under FASB ASC 718, the fair value concepts in FASB ASC 820 and 718 are closely aligned. Therefore, the task force believes that the valuation of private company equity securities underlying stock-based compensation awards granted under FASB ASC 718 generally would be consistent with the valuations performed for purposes of FASB ASC 820. Furthermore, the task force believes that FASB ASC 820 contains concepts that practitioners may find helpful when estimating fair value in connection with share-based payment transactions. Therefore, the task force believes that it is appropriate to follow the measurement guidance in FASB ASC 820 when valuing

² FASB explained its rationale for excluding FASB ASC 718, *Compensation—Stock Compensation*, from the scope of FASB ASC 820 in paragraph C8 of FASB Statement No. 157, *Fair Value Measurements*. Similarly, in footnote 148 to paragraph B63 in the basis for conclusions of FASB Statement No. 123(R), *Share-Based Payment*, FASB explained that the guidance on estimating fair value included in the stock-based compensation standard, which was codified as FASB ASC 718, was consistent with the guidance that ultimately was codified as FASB ASC 820. Since basis for conclusions paragraphs are not included in the codification, paragraph C8 of FASB Statement No. 157 and paragraph B63 of FASB Statement No. 123(R) were not codified in the FASB ASC; however, the task force believes these paragraphs provide helpful guidance and, therefore, decided to reference them in this guide. Although share-based payment transactions are excluded from the scope of FASB ASC 820, the fair value measurement objective in FASB ASC 718 is generally consistent with the fair value measurement objective in FASB ASC 820.

private company equity securities underlying stock-based compensation awards granted under FASB ASC 718 unless it is inconsistent with the guidance in FASB ASC 718.

Other Definitions of Fair Value

1.09 The definitions of *fair value* used in FASB ASC 718 and 820 have certain similarities to the definitions of *fair market value* in the *International Glossary of Business Valuation Terms* (IGBVT)³ and IRS Revenue Ruling 59-60.

- The IGBVT defines *fair market value* as “The price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm’s length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts.”
- IRS Revenue Ruling 59-60 defines *fair market value* as “the price at which property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts.”

1.10 When deliberating FASB Statement No. 157, *Fair Value Measurements* (which was codified in FASB ASC 820), FASB agreed that the measurement objective encompassed in the definition of fair value used for financial reporting purposes is generally consistent with similar definitions of fair market value used for other valuation purposes. However, FASB observed that the definition of fair market value relates principally to assets (property). Further, the fair market value definition has a significant body of interpretive case law developed in the context of tax regulation. Because such interpretive case law, in the context of financial reporting, may not be relevant, FASB chose not to adopt the definition of fair market value and its interpretive case law for financial reporting purposes.⁴ Thus, if performing dual-purpose valuations for both financial reporting and tax purposes (for example, to value common stock for financial reporting in connection with FASB ASC 718 and for compliance with Internal Revenue Code [IRC] Section 409A), it is important to understand the differences in the definitions of fair value and fair market value.

³ The *International Glossary of Business Valuation Terms* has been adopted by a number of professional societies and organizations, including the AICPA, and is included in appendix B of VS section 100, *Valuation of a Business, Business Ownership Interest, Security, or Intangible Asset*, in *AICPA Professional Standards*.

⁴ The explanation in this paragraph is based on paragraph C50 of FASB Statement No. 157. Since basis for conclusions paragraphs are not included in the codification, paragraph C50 was not codified in the FASB ASC. However, the task force believes that paragraph C50 provides helpful guidance and, therefore, decided to reference it in this guide.

1.11 Other standards of value that some companies or investors consider are *investment value* or *intrinsic value*.

- The IGBVT defines *investment value* as “the value to a particular investor based on individual investment requirements and expectations.”
- The IGBVT defines *intrinsic value* as “the value that an investor considers, on the basis of an evaluation or available facts, to be the ‘true’ or ‘real’ value that will become the market value when other investors reach the same conclusion. When the term applies to options, it is the difference between the exercise price or strike price of an option and the market value of the underlying security.”

FASB ASC 718 and FASB ASC 820 both consider fair value as an exit price from a market participant perspective and, therefore, investment value or intrinsic value (both of which depend on the beliefs of a particular investor) will not necessarily be consistent with fair value for financial reporting purposes.

Other Relevant Concepts

1.12 To increase consistency and comparability in fair value measurements and related disclosures, FASB ASC 820 established a fair value hierarchy that categorizes into three levels the inputs to valuation techniques used to measure fair value. The fair value hierarchy gives the highest priority to quoted prices (unadjusted) in active markets for identical assets or liabilities (level 1) and the lowest priority to *unobservable inputs* (level 3). According to FASB ASC 820-10-35-41, a quoted price in an active market provides the most reliable evidence of fair value and should be used without adjustment to measure fair value whenever available, except in circumstances specified in FASB ASC 820-10-35-41C.⁵

1.13 Valuation techniques applied in a valuation of a privately held enterprise and its securities may be broadly classified into the market, income, or asset approaches.⁶ Each

⁵ FASB ASC 820-10-35-41C specifies certain circumstances when adjustments to level 1 inputs may be appropriate (for example, in valuing large portfolios of similar assets [for example, using matrix pricing] or making adjustments for factors specific to the asset when relying on the quoted price for an asset in estimating the fair value of a liability).

⁶ FASB ASC 820 describes three valuation approaches: market, income, and cost. The concepts underlying these approaches apply broadly to the valuation of discrete assets and business enterprises. Within FASB’s cost approach concept, practitioners distinguish valuations of individual assets and business enterprises by using different terminology. The cost approach is said to have been applied when valuing individual assets, and the asset approach is said to have been applied when valuing business enterprises. The *International Glossary of Business Valuation Terms*, which has been adopted by a number of professional societies and organizations, including the AICPA, and is included in appendix B of VS section 100, defines *asset approach* as “[a] general way of determining a value indication of a business, business ownership interest, or security using one or more methods based on the value of the assets net of liabilities.” This guide addresses valuation of securities underlying awards issued as compensation within privately held enterprises. As a result, this guide focuses on the three approaches that can be used to value an enterprise (market, income, and asset) and only briefly describes the cost approach in the context of valuing individual assets.

of the three approaches may be applicable in the valuation of privately held company equity securities, including those underlying awards issued as compensation, depending largely on the stage of an enterprise's business development. Under VS section 100, *Valuation of a Business, Business Ownership Interest, Security, or Intangible Asset*, in AICPA *Professional Standards*, and the Appraisal Foundation's *Uniform Standards of Professional Appraisal Practice*, a valuation specialist should consider all three approaches (market, income, and asset), and if one or more is not used, then the valuation specialist should explain such non-use. Under FASB ASC 820-10-35-24, a reporting entity should use valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs. The selection of valuation approach(es) would include consideration of factors such as the history, nature, and stage of development of the enterprise; the nature of its assets and liabilities; its capital structure; and the availability of reliable, comparable, and verifiable data that will be required to perform the analysis. FASB ASC 820-10-35-24B indicates that, in some cases, a single valuation technique will be appropriate, whereas in other cases, multiple valuation techniques will be appropriate. See appendix A, paragraphs A.01.01–.12, "Relationship Between Fair Value and Stages of Enterprise Development," for a discussion of the relationship between approach selection and the stage of enterprise development. Also see chapter 8, "Inferring Value From Transactions in a Private Company's Securities," for considerations when there are observable secondary transactions in the reporting entity's equity securities.

- 1.14** The results of the various valuation techniques used are then assessed to arrive at the fair value measurement. FASB ASC 820-10-35-24B states that "[i]f multiple valuation techniques are used to measure fair value, the results (that is, respective indications of fair value) shall be evaluated considering the reasonableness of the range of values indicated by those results. A fair value measurement is the point within that range that is most representative of fair value in the circumstances." Therefore, when assessing the results of various valuation techniques, the valuation specialist would need to consider factors such as the relative applicability of the valuation techniques used given the nature of the industry and current market conditions; the quality, relevance, and verifiability of the data used in each valuation technique; the comparability of public enterprise or transaction data used in the analyses to the subject enterprise; and any additional considerations unique to the subject enterprise.
- 1.15** In practice, many companies engage a valuation specialist to provide a valuation analysis that they may consider as one factor in determining the fair value of the equity securities underlying their stock-based compensation awards. This guide defines a valuation specialist as "[a]n individual recognized as possessing the abilities, skills, and experience to perform valuations. A valuation specialist may be external or internal. When referring to the valuation specialist in this guide, it is commonly presumed that it is an external party, but if individuals within the entity possess the abilities, skills, and experience to perform valuations, they can also serve in the capacity of a valuation specialist." Regardless of whether fair value measurements are estimated with the assistance of an external third party or internally by the management team, the company's management and Board of Directors are ultimately responsible for the fair value measurements that are

used to prepare the company's financial statements and for the underlying assumptions used in developing these fair value measurements.

Practical Expedient for Private Companies

1.16 In October 2021, the FASB issued ASU 2021-07, *Compensation—Stock Compensation (Topic 718): Determining the Current Price of an Underlying Share for Equity-Classified Share-Based Awards*. This ASU provides a practical expedient for private companies to determine the current price input of equity-classified share-based awards using the “reasonable application of a reasonable valuation method,” which is generally designed to align with IRS regulations under section 409A.

1.17 Paragraphs 20D–20G of FASB ASC 718-10-30 describe the characteristics of such a method as follows:

30-20D The determination of whether a valuation method is reasonable, or whether an application of a valuation method is reasonable, shall be made based on the facts and circumstances as of the measurement date. Factors to be considered under a reasonable valuation method include, as applicable:

- a. The value of tangible and intangible assets of the nonpublic entity
- b. The present value of anticipated future cash flows of the nonpublic entity
- c. The market value of stock or equity interests in similar corporations and other entities engaged in trades or businesses substantially similar to those engaged in by the nonpublic entity for which the stock is to be valued, the value of which can be readily determined through nondiscretionary, objective means (such as through trading prices on an established securities market or an amount paid in an arm's-length private transaction)
- d. Recent arm's-length transactions involving the sale or transfer of stock or equity interests of the nonpublic entity
- e. Other relevant factors such as control premiums or discounts for lack of marketability and whether the valuation method is used for other purposes that have a material economic effect on the nonpublic entity, its stockholders, or its creditors
- f. The nonpublic entity's consistent use of a valuation method to determine the value of its stock or assets for other purposes, including for purposes unrelated to compensation of service providers.

30-20E The use of a valuation method is not reasonable if that valuation method does not take into consideration when applying its methodology all available information material to the value of the nonpublic entity.

30-20F The use of a value previously calculated under a valuation method is not reasonable as of a later date if either of the following conditions is met:

- a. The calculation fails to reflect information available after the date of the calculation that may materially affect the value of the nonpublic entity (for example, the resolution of material litigation or the issuance of a patent).
- b. The value was calculated with respect to a date that is more than 12 months earlier than the date for which the valuation is being used.

30-20G A valuation performed in accordance with Treasury Regulation Section 1.409A-1(b)(5)(iv)(B) having the characteristics described in paragraphs 718-10-30-20D through 30-20F is an example of a valuation that is reasonable under the practical expedient in those paragraphs.

1.18 This guide does not provide any further discussion of this ASU, as the determination of appropriate values under the Treasury Regulations or alternative methods that would comply with the practical expedient is beyond the scope of this guide. Further, the FASB provided the following discussion in the Basis for Conclusions of ASU 2021-07 regarding their rationale for endorsing the practical expedient and their views that fair value measurements determined under the Treasury Regulations and FASB ASC 718 should yield similar results:

BC21 In June 2021, the PCC [Private Company Council] reached a consensus on the practical expedient in this Update because it will reduce costs associated with determining the current price input associated with a share-based award. The PCC expects that the cost reduction will arise primarily from a potential reduction in the number of valuations that nonpublic entities obtain when a reasonable valuation having the characteristics described in the practical expedient was obtained within the last 12 months and that valuation was updated to reflect information after the date of the calculation that may have a material effect on the value of the entity. The PCC also expects that in more limited circumstances the cost reduction will arise because:

- a. Nonpublic entities currently obtaining two independent valuations (one for GAAP and one for tax requirements) will be able to obtain just one to satisfy both purposes.
- b. An acceptable practice for determining the current price input using only one valuation will be codified in GAAP.

BC22 The Board endorsed the PCC's consensus in August 2021, observing that while the PCC's expected cost savings may occur among a more limited population of private companies, the decision usefulness of share-based compensation information should be unaffected by the practical expedient. In addition, the Board observed that the PCC's decision to specify attributes of a reasonable valuation rather than directly refer to a paragraph of the Treasury

Regulations helped to clarify that the practical expedient will achieve the same or a similar result as the fair value objective for the current price input. The Board noted that the practical expedient would not change the fair value measurement objective for the current price input and does not affect existing audit requirements.

BC32 The Board and the PCC believe that the practical expedient in this Update, if elected by a nonpublic entity, will continue to provide decision-useful information to the users of private company financial statements, while reducing the cost and complexity associated with determining the current price input into an option pricing model. The practical expedient describes the reasonable application of a reasonable valuation method using the same characteristics that are used to describe such methods under the Treasury Regulations. Therefore, a reasonable valuation performed in accordance with the Treasury Regulations is an example of how to achieve the practical expedient. In 2006, the Board had agreed that the definition of fair value used for financial reporting purposes is generally consistent with the definition of fair market value provided by the IRS. At that time, the Board had observed that the definition of fair market value provided by the IRS related principally to assets (property) and had attached to it a significant body of interpretative case law developed in the context of tax regulation that may not be relevant for financial reporting purposes. It is expected that the current price value determined using a valuation method satisfying the requirements of the Treasury Regulations will be similar to the value that would have been determined using a valuation method that is compliant with Topic 718. The Board and the PCC believe that costs will be reduced for nonpublic entities for the reasons identified in paragraph BC21 and BC22.

Chapter 2

Market Participant Assumptions

Introduction

2.01 FASB *Accounting Standards Codification* (ASC) 820-10-35-9 states the following:

A reporting entity shall measure the fair value of an asset or a liability using the assumptions that market participants would use in pricing the asset or liability, assuming that market participants act in their economic best interest. In developing those assumptions, a reporting entity need not identify specific market participants. Rather, the reporting entity shall identify characteristics that distinguish market participants generally, considering factors specific to all of the following:

- a. The asset or liability
- b. The principal (or most advantageous) market for the asset or liability
- c. Market participants with whom the reporting entity would enter into a transaction in that market.

This guide focuses on privately-held-company equity securities underlying stock-based compensation awards, which are typically classified in shareholders' equity. When a quoted price for the transfer of an item classified in shareholders' equity is not available, as would typically be the case for securities underlying stock-based compensation awards, FASB ASC 820-10-35-16B indicates that the fair value should be measured from the perspective of a market participant who holds the identical item as an asset. Therefore, in the context of this guide, the asset to be measured is the equity securities underlying stock-based compensation awards, and the relevant market participants are employees who hold the shares as an asset and investors who might, in the ordinary course of business, purchase such shares, given the characteristics of the company and of the specific security being valued. See paragraphs 8.16–.24 in chapter 8, “Inferring Value From Transactions in a Private Company’s Securities,” for a discussion about principal (or most advantageous) markets and market participants in those markets.

2.02 *Market participants* are defined in FASB ASC Master Glossary as

Buyers and sellers in the principal (or most advantageous) market for the asset or liability that have all of the following characteristics:

- a. They are independent of each other, that is, they are not related parties, although the price in a related-party transaction may be used as an input to a fair value measurement if the reporting entity has evidence that the transaction was entered into at market terms

- b. They are knowledgeable, having a reasonable understanding about the asset or liability and the transaction using all available information, including information that might be obtained through due diligence efforts that are usual and customary
- c. They are able to enter into a transaction for the asset or liability
- d. They are willing to enter into a transaction for the asset or liability, that is, they are motivated but not forced or otherwise compelled to do so.

2.03 The market participants that are relevant for private company securities and the way that those market participants would evaluate the securities together establish a framework for fair value measurement. In particular, the framework and the examples that follow address the following key questions:

- What characteristics do market participants consider when evaluating private company securities? How do those characteristics vary depending on the nature of the investment and the various possible investment strategies that market participants in this industry may pursue?
- How do market participants establish their *required rate of return* for the interest in the company, considering the risks and illiquidity of the investment?
- What factors should be considered in evaluating the relevance of observable transactions in developing market participant assumptions?
- How do market participants consider the expected holding period and the possible ultimate exit strategies for the investment?
- What information do market participants require when evaluating an investment? How do market participants make decisions when less than perfect information is available?

Market Participant Considerations

2.04 Market participants and the information that they would evaluate will likely be different depending on the characteristics of (a) the subject company, (b) the specific security being valued, (c) the industry and overall market conditions, and (d) the principal market in which the security is transacted. Note that market participants would necessarily consider information specific to the company, including information about the company's plans under current ownership, when valuing the securities in a given company. For example:

- Characteristics of the company might include the company's industry, stage of development, milestones achieved by the company, the depth and demand profile of its product pipeline or availability of new market opportunities, financial performance and expectations, the quality, depth and track record of the company's management

team and board of directors, major investors in the company, the company's intellectual property, work force and work force skills, and the extent of vertical integration or dependencies, the company's strategic market positioning or pricing profile, in addition to other unique attributes of the company.

- Characteristics of the specific security being valued might include economic rights such as downside protection,¹ interest or dividends,² and upside participation,³ as well as noneconomic rights, such as *information rights* and other features or protections,⁴ or the absence of those rights.
- Characteristics of the industry and overall market conditions might include expected growth and profitability in the industry, level of competition (quality of competitors and degree of consolidation or fragmentation), barriers to entry, the regulatory environment, the degree of market optimism or pessimism, and the required rates of return and market multiples for similar companies.
- Characteristics of the level of information available to market participants might differ based on the principal (or most advantageous) market including (but not limited to) material non-public information, which may not be available to an investor transacting on a secondary exchange but would often be available to an investor participating in a funding round subject to customary due diligence in which access to management of the company is available.

The combination of these characteristics, considered in light of relevant macroeconomic trends and expectations about the future, may fit the particular investment strategies and objectives of certain types of investors, which will likely help to define the most relevant

¹ Downside protection includes rights that may provide a preferential return to certain instruments when the value of the company declines, for example, the debt principal and *liquidation preferences* for preferred investments give seniority to these instruments over the junior classes of equity. In addition, some equity investments have down-round protection features that reduce the conversion per share and typically also increase the number of shares (maintaining the same aggregate strike price) if the portfolio company raises additional funds at a lower price. This type of anti-dilution protection also may be implemented through other structures. Put provisions may also provide investors with protection on the downside, allowing the investor to demand early repayment in certain circumstances.

² Interest or dividends may include cash or *pay-in-kind* (PIK) debt interest, or both, and cash or PIK-preferred dividends, or both. These payments typically provide an expected rate of return on the investment corresponding to the timing and risk of repayment.

³ Upside participation features include *conversion rights*, *participation rights*, common equity, warrants, or options, which provide the ability for the investors to participate in the growth in value of the company beyond the invested capital and any required interest or dividends. Put provisions may also provide investors with additional returns on the upside, for example, if the investor can demand early repayment at a premium upon a change in control.

⁴ Noneconomic rights may include features, such as debt (positive and negative) covenants, contractual rights to board seats, rights of first refusal, *drag-along rights*, *tag-along rights*, and redemption features or put rights, that provide protections for the investors possessing those rights and allow them to control or manage the timing of *liquidity events* and to facilitate an exit.

market participants for the securities. See paragraphs 8.16–.24 in chapter 8 for a discussion about principal (or most advantageous) markets and market participants in those markets.

2.05 The investors' strategies and objectives will influence the information that is deemed most relevant. Thus, in evaluating the characteristics of market participants for a particular investment and the information that would be most relevant to those market participants, it is important to understand both the characteristics of the company and security being valued and how those characteristics align with the strategies and objectives of various types of investors. Although risk and growth may be fundamental considerations for any investment, the market participants' investment strategies and objectives may dictate that more or less consideration be given to specific factors, such as products and markets, financial metrics, execution, and the quality of leadership and management team. For example:

- The market participants who might be relevant for buying securities in an early-stage biotechnology company may be venture capital (VC) funds whose investment strategy is to accept the high degree of risk associated with early-stage life sciences companies with the objective of generating higher rates of return. Such investors would typically expect to make subsequent investments to fund the company through certain phases of research and development and regulatory approval, with the ultimate goal of an exit through a sale to a strategic investor or an initial public offering (IPO) as a path to liquidity. As a result, these market participants will likely place more emphasis on considerations such as the quality of the management team and ability to navigate and efficiently execute on the research and development and regulatory process, future capital requirements, the potential market share for the product(s) once developed, competing or other related products being concurrently developed, and the exit market(s) for the company or its intellectual property, or both.
- In contrast, the market participants who might be relevant for buying securities in a mature manufacturing company in a fragmented market may include several different potential types of market participants, such as *leveraged buyout (LBO)* funds or strategic investors.
 - A typical investment strategy for an LBO fund is to acquire platform companies via a cash investment funded with a substantial amount of third-party debt, then subsequently acquire additional companies in similar or complimentary markets, with a primary objective of generating returns through financial leverage, improvements in operating effectiveness, market positioning, executing on accretive add-on acquisitions, and the reduction of the acquisition debt.

These investors' ultimate exit strategy may include the possibility of a sale to a strategic investor, an IPO, or sale to another private equity (PE) investor. Based on the investment strategy and objectives, these market participants might place more emphasis on the company's financial metrics, market leadership, competitive advantages, customer relationships, opportunities to

improve operational effectiveness, and acquisition opportunities, among other factors. In the context of an LBO fund planning an acquisition strategy, the existence or availability of a strong management team would be key to executing their strategy. It would also likely need to, either initially or over time, be able to access the debt capital markets to fund its acquisition strategy.

- Alternatively, the same manufacturing company in a fragmented market may be a good target as an acquisition candidate by another strategic investor (a company in the same or related industry). In this case, this type of market participant may be less focused on the strength of the company's existing management team or its overhead structure because the target company's operations could be folded into the buyer's operations. In addition, a strategic buyer may be less focused on the ability to obtain debt financing on the basis of the target company's stand-alone operations because the buyer may have adequate access to debt capital on the basis of its own activities. Primary focus for this type of market participant may include products and services offered, customer relationships, geographical penetration, patents, and other intellectual property rights.
- The market participants who might purchase shares held by employees (often common stock) may also have a larger investment in the company with additional rights (often preferred stock, with information rights and other rights that investors typically expect). In such cases, it would be relevant to consider these investors' strategies and objectives for the business as a whole. In other cases, market participants who purchase shares held by employees may not have information rights or influence over the company's operations, and it may be more relevant to consider their motivations for the investment in the securities themselves.

2.06 A key aspect inherent in estimating *fair value* is making judgments about the assumptions that market participants in the principal (or most advantageous) market for the security would use in deciding on the price for a security, consistent with the information that market participants would obtain through their usual and customary processes. As stated in FASB ASC 820-10-05-1C, "Because fair value is a market-based measurement, it is measured using the assumptions that market participants would use when pricing the asset or liability, including assumptions about risk. As a result, a reporting entity's intention to hold an asset or to settle or otherwise fulfill a liability is not relevant when measuring fair value." Therefore, the fair value of a security is measured based on an assumed hypothetical transaction in the security in the principal (or most advantageous) market on the measurement date, irrespective of whether any such transaction is planned. Depending on the security being valued and the stage of the company's development, assessing the market participant assumptions for a current transaction may require significant judgment. For example:

- Suppose the shares underlying the stock-based compensation awards are the common stock in a company. In many cases, there is no observable market for those shares, and the valuation analysis would consider calibrating to any recent preferred stock transactions instead. However, even for preferred stock, it may be difficult to find

observable transactions at dates between financing rounds, because the investors typically hold their shares through a *liquidity event* for the company as a whole (for example, sale or IPO). Thus, understanding the nature of potential market participants for the common stock and the information that they would evaluate might be challenging.

- If there are no observable transactions in the common stock, the valuation analysis would measure fair value in a hypothetical transaction in the principal-to-principal market, considering potential market participants such as the investors or employees of the company or other individuals who might purchase these shares. The valuation analysis would then consider the price at which such market participants would transact on the measurement date, given the changes that have occurred for the company and the overall market environment since the latest relevant transaction, if any. See chapter 8 for a discussion of how to assess the principal market and identify the characteristics of the potential market participants in that principal market. See chapters 3–7 for a discussion of the specific valuation techniques that might be applied in valuing the business and the securities of the business, and the "Applying Calibration in Valuing the Securities in an Enterprise" section in paragraphs 3.111–.128, for further discussion of the process of calibrating to a recent transaction to determine the market participant assumptions to be used in each technique.

Required Rate of Return

- 2.07** In many cases, especially when considering measurement dates prior to an IPO or sale of the company as a whole to a strategic investor, market participants in an assumed transaction for the securities may also include investment companies. These market participants often evaluate potential investments considering a target or required rate of return given the risk of the investment, that is, what rate of return on their money will they achieve if they invest in a given security at a particular price based upon a given set of performance criteria and a given market outlook. Thus, when making valuation estimates where market participants for a given security would be investment companies, it is helpful to view the valuation from the perspective of the market participants' required rate of return on a hypothetical investment in the securities being valued.
- 2.08** The required rate of return for market participants investing in early-stage enterprises or the corresponding multiples that market participants investing in an interest in a company are willing to pay are inputs into many of the *valuation models* commonly used to value company securities. Because of the differences between the strategies employed by investors and the risk profile associated with these securities, when compared with the narrower range of observable data from the public markets, it can be challenging to assess the *unobservable inputs* required in these valuation models. One approach to address this issue is to estimate the required rate of return or the market multiples for the securities as of the initial recognition date by calibrating to the transaction price, and then to adjust for factors that have changed between the initial recognition date and the measurement date. See paragraphs 3.111–.128 for further discussion.

Relevance of Observable Transactions in Developing Market Participant Assumptions

2.09 For many private companies, the only observable transactions will be the initial investment and possibly subsequent investments (for example, if additional capital is required). As discussed in paragraph 8.30, in many cases, such transactions involve classes of securities (often preferred stock) that differ from the class of equity securities typically issued for compensation (often common stock). Furthermore, transactions in which the company sells securities directly to a third-party investor are not transactions in a principal or *most advantageous market* (because they do not represent sales of existing securities between two or more parties) and represent an “entry price” rather than an “exit price” for those securities. However, primary transactions are observable transactions that may provide relevant information about unobservable inputs to the valuation models that would be used to measure the fair value of the company’s securities underlying the stock-based compensation awards. In other cases, there may be *secondary market transactions* in the company’s securities, which may provide additional insight into the value of these securities and the corresponding value of other interests in the enterprise (for example, other different classes of stock in the same company). In assessing the relevance of these transactions for developing market participant assumptions, it is important to consider factors such as whether the transaction price reflects a negotiated price for the securities and whether the transaction price includes additional value elements or strategic benefits (investor-specific benefits). See chapter 8 for further discussion.

Consideration of Future Conditions

2.10 Valuation is fundamentally a forward-looking exercise; thus, the information relevant to market participants will include assumptions about the future. As a result, it may be necessary to consider not only the current conditions but also how the characteristics of the company may evolve over time and the impact on market participants’ available strategies for realizing value from the investment. It is essential to consider expected or possible future market conditions, such as the company’s expected access to future debt and equity capital either through the public or private markets, and the expected pricing and dilution that may be associated with each, the macroeconomic environment, demographic trends, future demand for the product or service, and future competitive landscape for products or services, among other factors. These expectations regarding the future can affect the way that market participants will perceive the current value of an investment. Some of these factors may be captured within the context of a financial model or set of projected outcomes. However, many of these factors are more subjective and need to be incorporated, based upon the judgment and risk appetite of the market participant, into their qualitative assessment of what they might be prepared to pay for a given company, asset, or interest in the company. Although this process may consider the buyer’s required rate of return, as discussed previously, the required rate of return may vary significantly depending on the specific facts and circumstances.

2.11 The fair value estimate will almost always be based on less than perfect information. Such is the reality of investing in businesses and estimating the value of private

companies. For instance, a situation might arise in which certain information is available regarding a potential liquidity event that requires an estimate of the weight that market participants would place on this information. For example, suppose that the company issuing stock-based compensation awards is Prinden, a software company in a nascent market segment where the two leading software companies, Rosencrantz and Guildenstern, want to establish a presence. The valuation specialist observes that a high multiple was just paid by Rosencrantz for a competing software company and, thus, it appears likely that Guildenstern will also acquire a company with similar technology. However, the valuation specialist may not know what multiple Guildenstern would pay or whether there may be market participants other than Rosencrantz and Guildenstern who might pay a comparable price. In addition, the valuation specialist may have imperfect information regarding the number of other companies (competitors) that Guildenstern might consider acquiring, given the nascence of the market. In such a situation, the fair value measurement would take into account the best information that was known or knowable as of the measurement date, considering how market participants would price the investment given an assumption about the likelihood of the high multiple being realized and adjusting for risk. These types of situations will present challenges.

Considering Whether Investors' Interests Are Aligned

- 2.12** Another consideration in estimating the fair value of securities within an enterprise is the degree to which the investors' interests are aligned. Investors often hold a different class of securities than the securities underlying stock-based compensation awards, and frequently structure agreements for these securities to encourage the investors participating in the transaction to make decisions together and to keep them from selling their securities unilaterally. These provisions help ensure that the investors' interests remain aligned as the company progresses toward a liquidity event. The securities underlying the stock-based compensation awards may lack these protections.
- 2.13** Most securities held by investors have provisions such as *"tag-along" rights* that allow the investors to participate pro rata in any sale of the shares that another investor negotiates or *"drag-along" rights* that provide the controlling investor(s) with the right to force other investors to sell at the same time (for example, forcing a sale of the entire company). Market participants would consider these rights when assessing the degree to which the investors' interests are aligned or whether certain investors might receive disproportionate returns.
- 2.14** For the purpose of estimating the value of the securities of an enterprise, it is appropriate to consider the value of the business from the perspective of the investors who in aggregate have control of the business. This value may reflect the benefits of control as well as cost of illiquidity. In the context of transactions in VC- and PE-backed companies, the value associated with control and the cost of illiquidity are both embedded in the price paid. Furthermore, all investors in a given financing round will typically pay the same price per share, irrespective of the degree of control associated with the security. As such, for the purpose of valuing an interest in a business, the Equity Securities Task Force recommends considering the assumptions that market participants investing in the securities would make regarding the cash flows and their required rate of

return, and calibrating to the latest transaction price, rather than applying premiums or discounts to some arbitrary or formulaic starting point. See Q&As 10.25 and 10.53–.58, as well as paragraphs 2.12, 3.45, 3.54, 5.02–.07, 7.01–.15, and 3.126–.128, for a discussion of these concepts.

Types of Information Typically Considered

- 2.15** As discussed previously, the types of information that market participants consider most relevant will depend, in part, on the company characteristics and the market participants' strategy and objectives. The considerations may also be at both the enterprise level and the security level. The following table presents a list of broad categories of information that might be relevant to market participants transacting in the stock underlying the stock-based compensation awards, or to market participants transacting in the securities held by other investors (which may be relevant when calibrating to a recent financing round). Please note that the following list is not intended to be all-inclusive, nor is it presented in any particular order.

Table 2-1

<i>Company Factors</i>				<i>Security Factors</i>
<i>Market Position</i>	<i>Execution</i>	<i>Financial</i>	<i>Leadership</i>	
• Product portfolio • Markets for products or services • Market and industry trends • Competitive advantages • Barriers to entry • Threats or opportunities (regulatory, industry, and so on) • Customer concentration • New or emerging technologies • Market share • Geographic coverage and country risk • Customer perception • Suppliers • Value proposition and product differentiation	• Operational effectiveness • Lean manufacturing • Quality • Working capital efficiency • Corporate structure • Build vs. buy • Onshore or off-shore production opportunities • Labor negotiations • IPO considerations • Sale strategy • Production capacity • Acquisition opportunities • Economic environment	• Revenue growth • Gross margin • Availability of capital • Financial ratios • Leverage • Future capital requirements — investment terms • <i>Synergies</i> — operational, new products, markets • <i>EBITDA</i> margins • Capital expenditures • Litigation • Taxes • Hedging — commodities, interest rates • <i>IRR</i> on investment in the company, its products, and segments	• Experience and composition of board • Effectiveness of board • Strength of senior management team — (experience, industry expertise, respect, track record of success) • Long-term strategic plan • Ability and willingness to execute • Economic incentives • Succession plan • Management reporting structure • Noncompete agreements • Composition and expertise of marketing team • Training and recruitment • HR policies • Corporate culture	• Rights and preferences • Liquidity • Level of influence • Information rights • Investor mix • Leverage and investment position in capital structure • Put or call provisions • Prepayment risk • Covenants (positive and negative) • Board representation • Dividends (cash and pay-in-kind) • Performance risk • Financial ratios — interest coverage, debt to total capital, debt to total assets, <i>MOIC</i>, and so on

Chapter 3

Overview of Valuation Approaches

Introduction

- 3.01** In the process of estimating value, when possible, best practice is to apply multiple valuation approaches and appropriate valuation methods using informed professional judgment in assessing which approaches and methods are most appropriate and how the results should be evaluated in reaching the concluded *fair value*. The use of informed professional judgment is an essential component of estimating value. Also, it is important for the valuation specialist to consider facts and circumstances specific to the company and the interests being valued.
- 3.02** As always, it is important to keep in mind the definition of fair value and the principles of fair value measurement, as discussed in other chapters. This chapter provides an overview of valuation approaches that are often used to estimate fair value when there is not a relevant transaction that provides the sole basis for the fair value measurement. When there are observable transactions, please also see chapter 8, “Inferring Value From Transactions in a Private Company’s Securities,” for a discussion of the impact of secondary transactions, especially paragraphs 8.16–.24 for further discussion regarding the principal (or most advantageous) market.
- 3.03** As a foundation for estimating value, and before diving into the details on any particular valuation approach or method, it is critical to start by developing an understanding of the business. For example, is it a service business? Manufacturing? What industry does it operate in? What is its customer base? What is the stage of its development? What is the company’s strategy and expected ultimate exit market? Please see chapter 2, “Market Participant Assumptions,” for further discussion.
- 3.04** Although many valuation methods are used in practice to estimate value for an enterprise and the equity securities in the enterprise, all such valuation methods fall under one of three approaches: the market, income, and asset approaches.¹ This chapter discusses in

¹ FASB *Accounting Standards Codification* (ASC) 820, *Fair Value Measurement*, describes three valuation approaches: market, income, and cost. The concepts underlying FASB market, income, and cost approaches apply broadly to the valuation of discrete assets and business enterprises. Within FASB’s cost approach concept, practitioners distinguish valuations of individual assets and business enterprises by using different terminology. The cost approach is said to have been applied when valuing individual assets, and the asset approach is said to have been applied when valuing business enterprises. The *International Glossary of Business Valuation Terms*, which has been adopted by a number of professional societies and organizations, including the AICPA, and is included in appendix B of VS section 100, *Valuation of a Business, Business Ownership Interest, Security or Intangible Asset*, found in *AICPA Professional Standards*, defines *asset approach* as “[a] general way of determining a value indication of a business, business ownership interest, or security using one or more methods based on the value of the assets net of liabilities.” This guide addresses valuation of equity securities in privately held enterprises. As a result, this guide focuses on the three approaches that can be used to value an enterprise (market, income, and asset) and describes the cost approach in the context of valuing individual assets.

detail the three approaches and the significant assumptions that have the most effect on, and relevance to, each approach.

- 3.05** Valuation specialists generally will consider more than one valuation approach and method in estimating the value of an enterprise and the equity securities in the enterprise.² Because estimating fair value is not an exact science, value indications from different methods will not necessarily reconcile, but the results of one valuation method can be used to corroborate, or can otherwise be used in conjunction with, the results of one or more other valuation methods in estimating value. If the valuation specialist has applied multiple valuation methods, and one result is significantly different from the other(s), the valuation specialist would need to assess the reasons for the differences. When there are significant differences, it is recommended that the valuation specialist review and revisit the valuation methods, relevant valuation inputs, and the assumptions underlying the valuation methods. If one or more of the three valuation approaches discussed in this chapter is not used, it is a best practice for the valuation specialist to document the reason why the other approaches were not used,³ even if this guide indicates that a certain valuation approach may not be appropriate in certain situations or that a certain valuation approach may be more appropriate than another approach in certain situations. The valuation approaches and methods considered and the reasons for the valuation approaches and methods chosen are important factors in the estimation of fair value.
- 3.06** As noted in the previous paragraph, this guide includes recommendations about certain valuation approaches and methods being more or less appropriate in certain situations. It is important to interpret all such recommendations within the context of current, relevant, and appropriate valuation standards.
- 3.07** If there are relevant observable transactions in the securities of the enterprise that reflect the fair value of those securities at the transaction date, then it would be appropriate to calibrate the valuation analysis to such transactions, as discussed in paragraphs 3.111–.128 and in chapter 8. The objective of the *calibration* process is to ensure that the result of the valuation technique at the transaction date equals the transaction price. As one step in this process, calibration also may be used to infer the equity value for the company

² For purposes of this guide, *enterprise value* is defined as the value of equity plus the value of debt. In broader valuation practice, the term *enterprise value* is sometimes used to refer to the value of equity, plus value of debt, less all cash and equivalents; however, for this guide, the Equity Securities Task Force (task force) defines *enterprise value* to include cash and cash equivalents. For purposes of this guide, *equity value* is defined as the enterprise value less the value of debt a market participant would use to determine the value of equity, measured considering the investors' risk-adjusted expected returns from their investment.

³ Under VS section 100 and the Appraisal Foundation's *Uniform Standards of Professional Appraisal Practice*, a *valuation specialist* should consider all three approaches (market, income, and asset), and if one or more is not used, then the valuation specialist should explain such nonuse. Under FASB ASC 820-10-35-24, a reporting entity should use valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure *fair value*, maximizing the use of relevant observable inputs and minimizing the use of *unobservable inputs*. FASB ASC 820-10-35-24B indicates that, in some cases, a single valuation technique will be appropriate, but in other cases, multiple valuation techniques will be appropriate.

from a transaction involving the company's own securities⁴ (the results of which may require adjustment for the nature of the instruments or any unstated benefits derived; see paragraphs 3.50 and 3.111–.128). The resulting calibrated equity value may be used as an input into the valuation of the securities, similar to the way that the equity value derived from other approaches are used in valuing the securities, and can be used to calibrate the assumptions used in other forms of the market approach or in the income approach to support valuations at subsequent measurement dates.

3.08 This chapter is structured as follows:

Market Approach

- Considerations in Applying the Guideline Public Company Method
 - Identification of Guideline Public Companies
 - Number of Guideline Public Companies Selected for Comparison
 - How to Calculate Multiples and Which Multiples to Use
 - Adjustments to Guideline Public Company Multiples to Enhance Comparability
 - Adjustments to Subject Enterprise Financial Data
 - Consideration of the Relevance of the Available Multiples
 - How to Select Multiples to Apply to the Subject Enterprise in the Guideline Public Company Method
 - Weighting of Multiple Type
- Considerations in Applying the Guideline Company Transactions Method⁵
 - Limitations on Availability of Data
 - Assessing Relevant Time Period for Guideline Company Transactions

⁴ Calibrating to any recent transactions in the company's own securities may require considering the rights and preferences of each class of equity and solving for the total equity value and corresponding values for each class that are consistent with the transactions. See chapter 6, "Valuation of Equity Securities in Complex Capital Structures," for additional discussion of how to value equity securities within a complex capital structure, and paragraphs 3.111–.128 and chapter 8, "Inferring Value From Transactions in a Private Company's Securities," for additional discussion of calibration.

⁵ As discussed in paragraph 3.48, most of the considerations that apply to the guideline public company method also apply to the guideline company transactions method, but a few differences exist. This section focuses only on additional considerations when applying the guideline company transactions method.

- Number of Guideline Company Transactions Selected for Comparison
- How to Select Multiples to Apply to the Subject Enterprise in the Guideline Company Transactions Method

Income Approach

- Significant Assumptions of the Income Approach
 - Prospective Financial Information (PFI)
 - Discount Rates and Discount Factors
 - Discount Rate Adjustment Technique (with Conditional PFI)
 - Expected Present Value Technique (Method 2, with Expected Probability-Weighted PFI)
 - Expected Present Value Technique (Method 1, with Certainty-Equivalent PFI)
 - Entity Versus Investment-Level Cash Flows
 - Terminal Period Assumptions
 - Leverage Assumptions
- Comparing Value Indications between the Income Approach and Market Approach
- Milestone-Driven Valuations

Asset Approach

- Significant Assumptions of the Asset Approach

Applying Calibration in Valuing the Securities in an Enterprise

- Market Approach
- Income Approach
- Relevance of Calibration as Time Passes
- Implications of Calibration When Considering Theoretical Discounts or Premiums Associated With Control and Marketability

Market Approach

- 3.09** According to the FASB *Accounting Standards Codification* (ASC) glossary, the *market approach*⁶ is "[a] valuation approach that uses prices and other relevant information generated by market transactions involving identical or comparable (that is, similar) assets, liabilities, or a group of assets and liabilities, such as a business." The market approach bases the value measurement on what other similar enterprises or comparable transactions indicate the value to be. Under this approach, the valuation specialist considers the value of comparable enterprises, as indicated by transactions in their securities (e.g. public company stock) or transactions in the enterprise as a whole (e.g. mergers and acquisitions). Financial and nonfinancial metrics (see paragraphs 3.28–.29 and 3.32–.33) may be used in conjunction with the market approach to estimate the fair value of the securities of the enterprise.
- 3.10** Two commonly used valuation methods for valuing an enterprise within the market approach are the *guideline public company method* and the *guideline company transactions method*.
- 3.11** When applicable, calibration provides an indication of the way that market participants would value the subject enterprise as of the transaction date and provides a basis for applying other valuation approaches at future dates, considering the differences between the subject enterprise and the selected guideline public companies or transactions. The initial calibrated assumptions would be adjusted to take into account changes in the subject enterprise and the market between the transaction date and each subsequent measurement date.

Considerations in Applying the Guideline Public Company Method

- 3.12** The inputs to the guideline public company method should be evaluated at each measurement date based on facts and circumstances. No two companies are identical, and when valuing the enterprise, it is important to consider the similarities and differences between the subject enterprise and the selected guideline public companies and adjust as appropriate, as discussed in the following paragraphs.

Identification of Guideline Public Companies

- 3.13** For guideline companies whose stock is publicly traded, information about pricing, trading, and financial data for those companies is generally available. Consideration should be given to the level of trading activity in evaluating the relevance of the information.

⁶ The *International Glossary of Business Valuation Terms* defines *market approach* as a "general way of determining a value indication of a business, business ownership interest, security, or intangible asset by using one or more methods that compare the subject to similar businesses, business ownership interests, securities, or intangible assets that have been sold." It is also referred to as *market-based approach*.

3.14 When identifying guideline public companies to be used in a market approach, it is helpful to consider what makes a company comparable to the subject enterprise. Operational and financial characteristics are considered to be factors of comparability and help determine those companies that have the most similar earnings capacity and relative levels of investment risk. Many sources⁷ of public company data are searchable by these key factors that can aid in identifying potential guideline public companies. Factors of comparability can include the following (note that this list is not intended to be an exhaustive list):

- Similar operational characteristics, such as the following:
 - Industry or sector (e.g. the North American Industry Classification System or the Global Industry Classification Standard or the Standard Industrial Classification code)
 - Lines of business
 - Geographic reach (for example, domestic versus international versus multinational)
 - Customers and distribution channels
 - Contractual versus noncontractual sales
 - Seasonality of the business
 - Business cycle (for example, short cycle characterized by ever-changing technology versus long cycle driven by changes in commodity pricing)
 - Stage of business life cycle (start up, high growth, mature, and so forth)
 - Operating constraints (for example, reliance or dependence on key customers or government regulations)
 - Levels of pricing power
 - Levels of competitiveness in the market
- Similar financial characteristics, such as the following:
 - Size (for example, revenues, assets, or enterprise values)
 - Profitability (for example, earnings before interest, taxes, depreciation, and amortization [*EBITDA*], operating margin, contribution margin)

⁷ As of the date of publication of this guide, third-party data vendors and publications included, but were not limited to, Capital IQ, MergerStat, Bloomberg, FactSet, and Compustat.

- Anticipated future growth in revenues and profits
- Asset-base (for example, manufacturing versus service business)
- Pattern of owning versus leasing real properties, machinery, and equipment (for example, an entity that owns its manufacturing operations versus one that leases the building and machinery used for its operations)

- 3.15** Not all the factors listed in paragraph 3.14 will be applicable in every circumstance, and there may be many other important factors to consider, some of which may be industry specific. When performing the analysis, the factors of comparability are determined, and public company data is screened to identify the best set of guideline public companies, if any, that meet these criteria. It will likely not be possible to identify a set of guideline public companies that are similar to the subject company in all respects, and the lack of ideal guideline companies does not preclude the use of this approach. Instead, it would be important to consider the similarities and differences when interpreting the data and selecting an appropriate multiple for the subject enterprise. Calibration may assist in this determination.
- 3.16** The process of selecting appropriate guideline public companies will often include an analysis that summarizes the comparability of financial statistics, such as size, profitability, geography and growth, between the guideline public companies and the subject enterprise. Other comparative financial ratios may also be included. Typically, after the guideline public companies for a given enterprise have been selected at an initial measurement date, these same companies are used consistently in the analyses for subsequent periods. However, in some cases, there may be changes in the enterprise's strategy or business model, or changes that apply for one or more of the guideline public companies, in which case it would be appropriate to consider adding or removing certain guideline public companies from the analysis. Acquisitions made of guideline public companies in subsequent periods would also justify removal of the guideline public company from use in the guideline public company method but would make that company eligible for use within the guideline company transactions method. It is also best practice to perform a search for any recent market entrants or newly public companies that could be considered comparable in subsequent periods.
- 3.17** When valuing privately held, early-stage companies, the guideline public company method has significant limitations and challenges. For instance, truly comparable guideline public companies at a similar stage of development with similar growth and risk expectations might not exist. If the subject enterprise has no earnings or has insignificant revenue, the guideline public company method may be less relevant because *prospective financial information (PFI)* for the subject enterprise may be uncertain. This limitation is particularly apparent for enterprises in stages 1 and 2. (See appendix A, paragraphs A.01.01–.12, “Relationship Between Fair Value and Stages of Enterprise Development,” for more discussion on different stages of development, and appendix A, paragraphs A.06.01–.05, “Early-Stage Companies with No Recent Financing Rounds,” for a discussion of approaches for valuing pre-revenue companies when significant time has passed since the most recent financing round.) However, the principles of the market

approach may still be instructive for an assessment of the *terminal value* under the income approach. (See paragraph 3.67 and appendix A, paragraphs A.08.01–.07, "Table of Capitalization Multiples," for further discussion).

- 3.18** In addition, there may be instances in which the enterprise is comparable to a division within a guideline public company or is comparable to only part of the guideline public company, or vice versa. Or, for example, the subject enterprise may rely entirely on third-party distribution, whereas the guideline public company may be more vertically integrated. Consideration would need to be given to assess the importance of these differences in business models.
- 3.19** When the guideline public company method is used, the valuation specialist should identify and describe the selected guideline public companies and the process followed in their selection.

Number of Guideline Public Companies Selected for Comparison

- 3.20** The number of guideline public companies identified will vary based on facts and circumstances. Although in some cases, there may be only a limited number of public companies that are considered closely comparable to the subject enterprise, in other cases, there will be several. Furthermore, there may be public companies that exhibit some, but not all, the factors of comparability. There also may be situations in which a primary set of guideline public companies may be accompanied by a secondary, less comparable, but corroborating set of guideline public companies (for example, a primary set of guideline public companies could be apparel retailers focused on children's clothing, and the secondary corroborating set might be all apparel retailers of similar size, growth, and profitability to the subject enterprise, regardless of consumer focus). In all cases, the guideline public companies selected need to reflect companies that market participants would view as sufficiently similar to the subject enterprise.

How to Calculate Multiples and Which Multiples to Use

- 3.21** Once the guideline public companies have been identified, financial information is gathered on each, and comparative metrics that can be applied to the subject enterprise are calculated considering the values as of the measurement date and the relevant metrics based on financial information that was available as of the measurement date. These metrics, commonly called *multiples*, are typically ratios of *enterprise value* or market value of equity to an underlying financial data point, such as revenue, EBITDA, net income, or book value. One or more relevant multiples may be used, and the selection of the appropriate metrics may vary by industry or stage of development.
- 3.22** Some commonly used multiples include the following:
- Market value of equity (MVE) to net income
 - MVE to book value of equity

- Enterprise value (EV) (excluding cash)⁸ to earnings before interest and taxes (*EBIT*)
- EV (excluding cash) to EBITDA
- EV (excluding cash) to revenues
- EV (excluding cash) to debt-free cash flow
- EV (excluding cash) to book value of assets

3.23 Enterprise value is typically calculated as follows: stock price times the number of shares outstanding, plus the fair value of preferred shares and noncontrolling interests, plus the fair value of debt.⁹ Enterprise value may also be referred to as *invested capital*, *market value of invested capital (MVIC)*, *total invested capital (TIC)*, or *total enterprise value*. The numerator of an EV multiple is typically calculated as enterprise value excluding cash, since the value excluding cash is more reflective of the operations of the business. Any cash would then be added back when estimating the total enterprise value.

3.24 An important consideration in the application of a market approach is whether the market multiples being applied result in the value intended — enterprise value (EV) (excluding cash) or equity value. If an enterprise value (excluding cash) is desired and EV multiples (excluding cash) are applied, no further adjustment is required. However, if an equity value is desired and EV multiples (excluding cash) are applied, an adjustment to convert the resulting enterprise value to equity value needs to be made. This is typically achieved by adding back cash and then subtracting from enterprise value the value of debt that a market participant would consider, as discussed in chapter 4, "Value of Debt for the Purpose of Valuing Equity." If the enterprise has no debt, the fair value of the subject enterprise's equity would be the same as the enterprise value (including cash).

3.25 These multiples can be calculated on a historical basis or a forward-looking basis. The selection of historical versus forward-looking multiples requires judgment about which measure(s) are most indicative of a normalized level of operations going forward. In many cases, both historical and forward-looking multiples may be considered, with adjustments to account for expected growth and other factors. If the enterprise has generated historical revenues or profits, most market participants will consider the historical multiples as one input because historical data is more easily available and more likely to be reliable. However, if available, forward multiples are likely to provide more

⁸ External data sources may already exclude cash in their calculation of enterprise value, in which case, the adjustment may not be necessary. Because the amount of nonoperating cash may not be comparable across otherwise similar businesses, it is appropriate to estimate multiples using the comparable enterprise values, excluding cash, to multiply by the metrics of the enterprise to be valued, and then to add back the enterprise's cash.

⁹ In many cases, when the selected guideline public companies are not highly levered and there is no reason to think that the fair value of debt would be significantly different than its book value, book value or par value is used as a proxy for this measurement. See chapter 4, "Value of Debt for the Purpose of Valuing Equity," for further discussion.

relevant information, especially for high-growth businesses. See paragraphs 3.27 and 3.41 for additional discussion.

- 3.26** Historical basis multiples may include the latest fiscal year and latest 12 months (LTM) or historical averages, such as the average of the last 3 years. Forward-looking multiples may include the estimated current fiscal year, next 12 months (NTM), next fiscal year, or future fiscal years (2 or 3 years into the future).
- 3.27** The Equity Securities Task Force (task force) believes that multiples should be applied consistently between the guideline public companies and the subject enterprise. For example, LTM multiples derived from guideline public companies would be applied to the subject enterprise's LTM performance. NTM multiples derived from guideline public companies would be applied to the subject enterprise's NTM anticipated future performance. It would not be appropriate to apply LTM multiples to the subject enterprise's anticipated future performance. To use forward-looking multiples, it is necessary to obtain estimates (for example, from analysts' reports) of future performance of each guideline public company.
- 3.28** When calculating multiples, EV multiples are typically paired with enterprise-level-based financial metrics (for example, revenues or EBITDA), and equity market values are typically paired with equity-based financial metrics (for example, net income and book value of equity).
- 3.29** The valuation specialist would need to select the financial metrics that are applicable to the subject enterprise valuation given the subject enterprise's industry, stage of development, growth, profitability, geographic footprint, and other relevant factors. Asset-based, sales-based, and income-based metrics that have proven useful in the past are typically more accepted in practice than alternative metrics that may not be as widely used. The correlation between the observed prices and metrics might also be considered in estimating the weight to apply to each measure. If multiple metrics are deemed to be relevant but provide different indications of value, the valuation specialist may give greater weight to one measure instead of the other because one is believed to be more reflective of a market participant's perspective of value.
- 3.30** When calculating market multiples, the valuation typically will consider the enterprise value of the guideline public companies net of cash. Therefore, the value that results from applying this multiple to the subject enterprise would also exclude the value of the subject enterprise's cash. Any cash would then be added back when estimating the total enterprise value for the subject enterprise. This approach is generally regarded as providing more reliable valuation multiples, since it focuses on the value derived from the operations of each business, avoiding issues when the subject enterprise and the guideline public companies have varying levels of cash.
- 3.31** There may be situations in which adjustments to a guideline public company for nonoperating assets are necessary for significant identifiable items, such as investments in an unconsolidated subsidiary or joint venture accounted for under the equity method, unused land adjacent to a plant or facility, or corporate headquarters located in an area

where the price of real estate is high. The objective for making these adjustments is to enhance the comparability between the guideline public companies and the subject enterprise.

3.32 Nonfinancial metrics and key performance indicators sometimes used by market participants and analysts may also be used to estimate value. Examples are as follows:

- Price per subscriber (or homes passed) in the cable industry
- Price per bed in the hospital industry
- EV (excluding cash) to research and development investment in the biopharmaceuticals industry
- Levels of probability-weighted reserves in the case of an oil and gas exploration company
- Price per unit or price per square foot in the real estate industry
- Clicks or page views for an early-stage internet company
- Other industry-specific metrics

3.33 A nonfinancial metric is often industry-specific and would ordinarily be used when the nonfinancial metric is generally accepted in the industry and would be considered by market participants. In addition, with many early-stage entities, some traditional metrics cannot be used because the entities have not yet earned a profit and, therefore, nonfinancial metrics may be used in conjunction with the limited number of usable financial metrics. The task force recommends corroborating these metrics with other methodologies whenever possible.

3.34 The valuation specialist should document the applicable metrics selected for use in the valuation and the rationale for their selection.

Adjustments to Guideline Public Company Multiples to Enhance Comparability

3.35 The valuation specialist may need to make adjustments to select appropriate multiples based on a comparison to an enterprise that, in one significant respect or another, is not comparable to the enterprise being valued. The purpose of making adjustments to observable multiples is to put the guideline public company on a more comparable basis to the subject enterprise. If identified guideline public companies exhibit certain differences to the subject enterprise but are otherwise deemed to be reasonably good comparative benchmarks, the observable multiples for the guideline public companies can be adjusted to account for these differences. Such adjustments relate to factors

including profitability, anticipated growth,¹⁰ size, leverage, working capital, nonrecurring or nonoperating income or expenses, or differences in accounting policies or principles (such as U.S. generally accepted accounting principles [GAAP] versus International Financial Reporting Standards [IFRS])¹¹ or the timing of implementing new accounting standards. Generally, such adjustments are captured by calibration (see paragraphs 3.111–.128 and chapter 8).

- 3.36** In performing valuations of early-stage enterprises under the market approach, it is especially important to recognize that any available guideline public companies, even in the same industry, likely will not be comparable when considering the size of enterprise, marketability of the products or services, breadth of the management team, and stage of development of the enterprise. This last assumption may render the market approach impractical for early-stage enterprises because pricing data for such enterprises is difficult, if not impossible, to find. Furthermore, even if pricing data can be found, until product or service feasibility is achieved, comparability among early-stage enterprises is difficult to achieve.

Adjustments to Subject Enterprise Financial Data

- 3.37** Market multiples are often applied to subject enterprise financial data that is considered to be normalized and, therefore, indicative of a normal level of operations going forward. Potential adjustments to subject enterprise financial data that is not already on a normalized basis are infrequent but might include the following:¹²

- Removal of significant nonrecurring income or expenses (for example, a one-time restructuring charge)

¹⁰ For companies whose projected revenue and earnings growth exceed industry levels, the values of these companies may reflect lower than average multiples of projected revenues or earnings, while these same values also may reflect average or above average multiples of current revenues and earnings. For example, an early-stage company may have almost no current revenue, whereas a large PE-backed company in a turnaround situation may have low earnings that are expected to improve under new management. In both of these examples, the value of the companies would reflect a high current multiple (escalating rapidly as revenues or earnings before interest, taxes, depreciation, and amortization [*EBITDA*] approach zero).

¹¹ Another consideration is that not all companies within an industry have similar operations. For example, some hotel companies purchase their properties, whereas others lease them. Companies with different operating models will likely trade at different multiples of various financial metrics, so it is important to consider these factors when estimating appropriate multiples for the company to be valued. It may also be necessary to make pro forma adjustments to the financial statements for selected guideline public companies or for the company to be valued to take into account factors such as favorable or unfavorable contracts (for example, a below-market lease or a low rate on a technology licensing agreement), recent or pending acquisitions, or one-time events.

¹² When using normalized multiples for the subject enterprise, it would be important to make similar adjustments to the guideline public company data, if applicable. For example, if restructuring charges have been adjusted out of the subject company's financial metric, the valuation analysis would also need to make similar adjustments if any of the guideline public companies also had restructuring charges.

- Removal of nonoperating income or expenses associated with nonoperating assets or liabilities of the subject enterprise
- Removal of management fees that are not indicative of expenses the subject enterprise would incur if it operated on a stand-alone basis
- Addition of imputed expenses that are not incurred by the subject enterprise but that would be incurred by a market participant operating that enterprise on a stand-alone basis (for example, royalty for use of the corporate brand name)

If the entity would incur expenses under current ownership through the liquidity event that would not be borne in a normalized business, it may be appropriate to make adjustments for those expenses when valuing the equity securities within the business. Please see chapter 7, “Control and Marketability,” for a discussion of the differences between valuing the business as a whole (considering the business as the unit of account) and valuing the business for the purpose of valuing the equity securities in the business (considering the securities as the unit of account).

- 3.38** The multiple selected must be consistent with the financial metrics considered. For example, many private-equity or venture-capital-backed private companies may forecast higher growth than public guideline companies, but also higher risk. Market participants may expect that the future performance for the enterprise will not be similar to its historical performance. Furthermore, these enterprises may not be operating in established industries where good guideline public companies can be found. Therefore, using normalized financial metrics in these situations may be reasonable. Nevertheless, to the extent that the financial metrics incorporate significant adjustments, market participants would select a multiple that reflects the risks associated with these adjustments. Calibration to any recent transactions may be used to ensure that the selected multiple and the adjusted financial metrics are internally consistent at the transaction date. The multiple and metrics would then be updated to reflect changes in the company’s performance and market conditions at future measurement dates. Judgment is critical in estimating a fair value that reflects market participant assumptions at the measurement date.

Consideration of the Relevance of the Available Multiples

- 3.39** Once multiples have been calculated for the selected guideline public companies, they are analyzed for relevance. Selected guideline public companies that are not that similar to the subject enterprise and that have multiples that are outliers and are considered to be “not meaningful” are given no weight in the data set. For example, public companies in distress whose earnings have fallen faster than their stock price, or public companies that have only recently achieved profitability or whose financial metrics are close to zero, may have a very high EV-to-EBITDA multiple. For example, in a set of guideline public companies with the majority of EV-to-EBITDA multiples ranging from 8x to 10x, where there is one outlier of 30x EBITDA for a guideline public company with low profitability, the outlier may not be assigned any weight. In particular, it would not be appropriate to place any weight on the outlier if the subject enterprise has a track record

of positive earnings and does not have a profitability and growth profile that is similar to the guideline public company with the 30x EBITDA multiple. Although the guideline public company with the 30x EBITDA multiple may still be considered relevant and may be considered for developing multiples for other financial metrics, the multiples of certain financial metrics may not be meaningful given the guideline public company's performance as of the measurement date.

- 3.40** In general, multiples for a data set of guideline public companies that are in a narrow range are generally better indications of value than a data set of multiples that exhibit wide dispersion. Statistical measures can be calculated to assist in analyzing the dispersion of multiples within a data set, though statistical calculations are not required if the analysis can be performed through other means (for example, qualitative assessments).

How to Select Multiples to Apply to the Subject Enterprise in the Guideline Public Company Method

- 3.41** Valuations are forward looking. The observed guideline public company multiples and, ultimately, the selected multiple of the enterprise in a guideline public company method are essentially a proxy for market participant expectations regarding future cash flow, growth, and risk. Thus, when evaluating and selecting multiples, be it LTM or NTM, EV-to-revenue or EBITDA, the valuation specialist should consider differences in expectations for cash flow, growth, and risk between the guideline public companies and the enterprise being valued. Key considerations in assessing these relative differences might include historical and expected growth rates, customer concentration, pricing models (for example, subscription versus sale in the software industry), direct distribution versus wholesale, and so on. When applicable, if it is possible to calibrate to observable transactions to estimate the enterprise value, the calibrated multiple implied from that enterprise value should also be used to assess the impact of these differences.
- 3.42** The median and mean (average) multiple are often calculated for each data set of guideline public company market multiples. The high, low, and interquartile multiples are also sometimes calculated to establish a range of the valuation metrics that might be relevant for the subject company. Selecting the relevant market multiple to apply to the subject enterprise requires careful consideration and may involve placing different weights on different guideline companies or making adjustments to reflect the differences between the subject company and the selected guideline public companies. It is not sufficient to simply apply the median or mean multiple from the data set without concluding that the median or mean is the most appropriate in the circumstances. Analysis needs to be performed, and professional judgment is required to determine the key value drivers in the array of multiples and their correlation to financial metrics, including similarities and differences between the guideline public companies and the subject enterprise. In some circumstances, it may be possible that the relevant multiple chosen might be outside the range of high and low metrics from the guideline public companies. For example, if an enterprise has a growth rate that dramatically exceeds that of any of the guideline public companies, which are necessarily more established businesses, the value of the company may reflect a multiple above the high end of the

range. In such cases, the market approach may still be used to understand market participants' view of the value and assess changes period to period.

- 3.43** EV-to-EBITDA multiples generally correlate to anticipated future growth in revenues and earnings. EV-to-revenue multiples generally correlate to both profit margins and future growth. At a minimum, the subject enterprise's anticipated future growth and profit margins are compared to each guideline public company, as appropriate, and the multiple selection includes consideration of these factors. Regression analysis, though not required, can be a useful tool when analyzing the key value drivers affecting market multiples.
- 3.44** In certain instances, one or a few of the guideline public companies might be considered to be most comparable. In these situations, the multiples of these companies may be relied upon most heavily in selection of multiples to apply to the subject enterprise. In addition, there may be other important factors to be considered, and some of these factors may vary by industry.
- 3.45** Note that even though historical valuation practice considered the guideline public company method to reflect an enterprise value on a minority basis, and the guideline company transactions method to reflect an enterprise value on a controlling basis, the key factor in selecting a multiple is to compare the enterprise with the relevant guideline public companies or transactions and to select an appropriate multiple considering the differences in factors such as size, growth, and profitability. The task force recommends considering the differences between the enterprise and the selected guideline public companies or transactions directly when selecting the multiples, rather than applying a premium or discount to some arbitrary or formulaic calculation. Calibration should be used to select multiples that are consistent with the transaction price, as long as the transaction price reflects fair value at initial recognition. These assumptions should then be updated in future periods considering changes in the company and changes in the market. See Q&As 10.25 and 10.53–.58, as well as paragraphs 2.12, 2.14, 3.54, 5.02–.07, 7.01–.15, and 3.126–.128, for a discussion of these concepts.

Weighting of Multiple Type

- 3.46** In some instances, it may be appropriate to use more than one multiple type in the market approach. The factors discussed previously, which are important in the selection of multiple types, also apply in determining appropriate weightings. The level of reliance placed on a particular multiple type and the weighting assigned to the multiple type is a matter of judgment. In certain industries, certain multiple types are more widely used than others, and these generally would be expected to receive greater weighting.
- 3.47** It is not always appropriate to weigh each multiple type equally. Weighting of multiple types is based on judgments about the relative importance of each multiple type and quality of the data set. When determining appropriate weightings, the facts and circumstances of the subject enterprise would need to be carefully considered.

Considerations in Applying the Guideline Company Transactions Method

- 3.48** Most of the considerations that apply to the guideline public company method also apply to the guideline company transactions method, but a few differences exist. Following are some additional considerations in applying the guideline company transactions method.

Limitations on Availability of Data

- 3.49** When using the guideline company transactions method to value a subject enterprise, limited data may be available on guideline company transactions. For example, some limitations may include the lack of information supporting the financial characteristics or the tax structure of the transaction.
- 3.50** Prices observed in issuances of securities by guideline private companies (if available) may not be appropriate as market comparables without adjustment if those transactions involve *synergies* that are specific to a particular buyer-seller relationship. Prices paid for private instruments by investors who are major suppliers, customers, or licensing or co-marketing partners may not be appropriate as market comparables without adjustment, because such transactions may involve multiple elements, such as the company granting certain rights or privileges to the supplier, customer, or partner, or the investor providing additional benefits to the company. If that transaction reflects any significant consideration for strategic or synergistic benefits in excess of those expected to be realized by market participants, but these buyer-specific synergies would not be expected to be available in the exit market for the interest to be valued, the valuation specialist ordinarily would identify those excess benefits and remove them from the valuation. It would be appropriate to consider future synergies in valuing the enterprise only to the extent that market participants purchasing the minority interest would expect the enterprise to realize a synergistic premium at exit (for example, if multiple strategic buyers would be expected to bid up the price). See chapter 7 for further discussion.

Assessing Relevant Time Period for Guideline Company Transactions

- 3.51** It may not be appropriate to use guideline company transactions that took place during periods in which economic conditions were not the same as they are at the measurement date, without appropriate adjustments. There are no bright lines but, in general, the older the transaction, the less relevant the information.

Number of Guideline Company Transactions Selected for Comparison

- 3.52** It is common practice to compare as many guideline company transactions as can be identified during a relevant recent historical time period. If the transaction price has not been disclosed, a transaction cannot be used as a guideline because it will not be possible to calculate any market multiples.

How to Select Multiples to Apply to the Subject Enterprise in the Guideline Company Transactions Method

- 3.53** Due to the limitations of the data, it may be difficult to make adjustments to the multiples for differences in financial characteristics between the guideline company transactions and the subject enterprise. As with the guideline public company method, market multiples need to be scrutinized and outliers labeled as "not meaningful." Further, for some transactions, data may be available to calculate only one or a few multiples. As with the guideline public company method, a data set of market multiples that are in a narrow range is generally a better indicator of the quality of the multiple than a data set of multiples showing wide dispersion.
- 3.54** Note that even though historical valuation practice considered the guideline public company method to reflect the enterprise value on a minority basis, and the guideline company transactions method to reflect the enterprise value on a controlling basis, the key factor in selecting a multiple is to compare the enterprise with the relevant guideline public companies or transactions and to select an appropriate multiple considering the differences in factors such as size, growth, and profitability. The task force recommends considering the differences between the enterprise and the selected guideline public companies or transactions directly when selecting the multiples. In particular, the task force believes that it would not be appropriate to apply an inadequately supported control or *acquisition premium*, or discount for lack of control in the enterprise value used in valuing the minority securities in the enterprise.¹³ Calibration should be used to select multiples that are consistent with the transaction price, as long as the transaction price reflects fair value at initial recognition. These assumptions should then be updated in future periods considering changes in the company and changes in the market. See Q&As 10.25 and 10.53–.58, as well as paragraphs 2.12, 2.14, 3.45, 5.02–.07, 7.01–.15, and 3.126–.128, for a discussion of these concepts.

Income Approach

- 3.55** According to the FASB ASC glossary, the *income approach*¹⁴ "convert[s] future amounts (for example, cash flows or income and expenses) to a single current (that is, discounted) amount." The fair value measurement is estimated on the basis of the value indicated by current market expectations about those future amounts. The income approach obtains its conceptual support from its basic assumption that value emanates from expectations of future projected cash flows.

¹³ Please see chapter 5, "Valuation of Equity Securities in Simple Capital Structures," and chapter 7, "Control and Marketability," for further discussion on the application of control or acquisition premium. Please see chapter 7 for further discussion regarding discount for lack of control.

¹⁴ The *International Glossary of Business Valuation Terms* defines *income approach* as a "general way of determining a value indication of a business, business ownership interest, security, or intangible asset using one or more methods that convert anticipated economic benefits into a present single amount." It is also referred to as *income-based approach*.

- 3.56** The income approach may be used to estimate the fair value of the enterprise and of the equity securities in the enterprise. One challenge in the income approach is that the projected financial information (PFI) used in the analysis often is based on *unobservable inputs*. As stated in FASB ASC 820-10-35-54A, "A reporting entity shall develop unobservable inputs using the best information available in the circumstances, which might include the reporting entity's own data. In developing unobservable inputs, a reporting entity may begin with its own data, but it shall adjust those data if reasonably available information indicates that other market participants would use different data or there is something particular to the reporting entity that is not available to other market participants..." In particular, when valuing the equity securities in an enterprise, it is appropriate to consider the cash flows that market participants in the principal (or most advantageous) market would expect the enterprise to generate under current ownership through the anticipated *liquidity event*.
- 3.57** The valuation method commonly used in applying the income approach to value a privately held company and its securities is the *discounted cash flow (DCF) method*. The DCF method requires estimation of future economic benefits and the application of an appropriate *discount rate* to equate them to a single present value. The future economic benefits to be discounted are generally a stream of periodic cash flows attributable to the enterprise or its securities, but they could also take other forms under specific circumstances (for example, a lump-sum payment at a particular time in the future without any interim cash flows).
- 3.58** The following discussion is not intended to address all the complexities and nuances of the income approach. The primary focus is on methods such as DCF analyses and their application to the valuation of privately-held companies and the securities underlying the stock-based compensation awards in such companies.
- 3.59** There are many considerations in applying the income approach. One consideration is the issue of how risk is assessed and assigned. One technique for measuring risk under the income approach is the *discount rate adjustment technique*, which is discussed in paragraphs 10–12 of FASB ASC 820-10-55. Under the discount rate adjustment technique, risk is assigned to, or incorporated into, the discount rate.¹⁵ The discount rate adjustment technique uses a single set of cash flows from a range of possible estimated amounts, whether contractual or promised or most likely cash flows. In all cases, those cash flows are conditional upon the occurrence of specified events. Those conditional cash flows are then discounted to present value using a risk-adjusted rate of return, or discount rate. The greater the perceived risk associated with the cash flows, the higher the discount rate applied to them and the lower their present value.
- 3.60** Note that for early-stage companies, management's estimates of an enterprise's cash flows are often contingent on the success of the enterprise, reflecting a scenario in which

¹⁵ Typically, a *discounted cash flow* (DCF) method uses after-tax cash flows and employs an after-tax *discount rate*. The use of pretax cash flows generally is inconsistent with how value ordinarily is measured in a DCF method. In any case, the cash flows and discount rate used (after-tax or pretax) should be consistent (that is, pretax cash flows should not be used with after-tax discount rates and vice versa).

the enterprise achieves the planned technical breakthroughs and executes on its business plan. Therefore, the discount rates used for these contingent cash flows are often quite high. In this case, the valuation specialist should perform procedures to understand and support the assumptions underlying the cash flow forecast and to select a discount rate consistent with the risk in the cash flows, or consider the success scenario separately (with an appropriate discount rate considering the risk in the cash flows once milestones are known to be met) and then multiply by the probability of success. Regardless of whether fair value measurements are developed by management or by a third party, management is responsible for the measurements that are used to prepare the financial statements and underlying assumptions used in developing those measurements.

3.61 Another technique that may be used for measuring risk under the income approach is the *expected present value technique*. As discussed in FASB ASC 820-10-55-13, this technique

uses as a starting point a set of cash flows that represents the probability-weighted average of all possible future cash flows (that is, the expected cash flows). The resulting estimate is identical to expected value, which, in statistical terms, is the weighted average of a discrete random variable's possible values with the respective probabilities as the weights. Because all possible cash flows are probability weighted, the resulting expected cash flow is not conditional upon the occurrence of any specified event (unlike the cash flows used in the discount rate adjustment technique).

However, as indicated in FASB ASC 820-10-55-18, "to apply the expected present value technique, it is not always necessary to take into account distributions of all possible cash flows using complex models and techniques. Rather, it might be possible to develop a limited number of discrete scenarios and probabilities that capture the array of possible cash flows."

3.62 The expected present value technique has two variations:

- In method 1, the probability-weighted *expected cash flows* are first adjusted for systematic (market) risk by subtracting a cash *risk premium* (that is, risk-adjusted expected cash flows). Those risk-adjusted expected cash flows represent a certainty-equivalent cash flow, which is discounted at the risk-free interest rate. A certainty-equivalent cash flow refers to a probability-weighted expected cash flow adjusted for risk so that a market participant would be indifferent to trading the certain cash flows for the risky probability-weighted expected cash flows. The Black-Scholes model is an example of this method; risk-neutral simulation techniques and lattice models are other examples. In practice, the task force believes it is impractical to directly assess the certainty-equivalent cash flows for an enterprise or the securities in the enterprise, so aside from Black-Scholes and other techniques that use a risk-neutral framework, method 1 is rarely used.
- In method 2, the probability-weighted expected cash flows are adjusted for systematic (market) risk by applying a risk premium to the risk-free interest rate. Accordingly, the cash flows are discounted at a risk-adjusted rate of return that corresponds to an

expected rate associated with these probability-weighted cash flows (that is, an expected rate of return).¹⁶ Models used for pricing risky assets, such as the *capital asset pricing model (CAPM)*, can be used to estimate the expected rate of return. As in the discount rate adjustment technique, the greater the perceived systematic risk associated with the expected cash flows, the higher the discount rate associated with it. Because this method considers the probability-weighted expected cash flows across the range of future outcomes, rather than considering the contractual cash flows or success scenario cash flows, the resulting expected cash flow is not conditional upon the occurrence of any specified event, unlike the cash flows used in the discount rate adjustment technique. Thus, the overall discount rates used in discounting probability-weighted cash flows are often lower than those used in discounting single best estimate (success) cash flows, all else being equal. Note, however, that probability-weighted cash flows are not the same as certainty-equivalent cash flows, and the discount rate used would still be significantly higher than the risk-free rate.¹⁷ In either case, the inputs used to determine the discount rate can be calibrated by using a recent observable transaction price, if fair value, and the cash flows resulting in an *internal rate of return* at the transaction date.

- 3.63** It is important to note that FASB ASC 820, *Fair Value Measurement*, does not limit the use of present value techniques to measure fair value to the discount rate adjustment technique or the expected present value technique. Many elements of risk may be handled by adjusting either the level of expected cash flows or the discount rate, or both.
- 3.64** In selecting a discount rate in the DCF method, it is important to consider not only the various inputs typically used to estimate the *cost of capital* but also the differences between the subject enterprise and the selected guideline public companies used in estimating these other inputs, which might indicate that a higher or lower cost of capital is appropriate. See appendix A, paragraphs A.09.01–.05, "Derivation of the Weighted Average Cost of Capital," for further discussion. When applicable, calibration provides an indication of the way that market participants would value the enterprise as of a recent transaction date given the differences between the subject enterprise and the selected guideline public companies. These initial assumptions can then be adjusted to take into account changes in the enterprise and the market between the transaction date and each subsequent measurement date. In estimating the equity value to be used in valuing the securities underlying the stock-based compensation award, it is important to recall that the objective of the valuation is to estimate the price that would be received in the principal (or most advantageous) market for the securities underlying the stock-based compensation awards at the measurement date, given the information that would be

¹⁶ The scenario analysis method discussed in chapter 6 is an example of this method.

¹⁷ The VC and PE portfolio rates of return described in appendix A, paragraphs A.04.01–.05, "Venture Capital Rates of Return," may provide an indication of the discount rates that may be appropriate for valuing an enterprise using probability-weighted cash flows. However, keep in mind that VC and PE portfolio rates of return reflect a return considering the diversifiable risk across the entire portfolio. To the extent that an investment in a specific company has additional non-diversifiable risk or financing risk, the discount rate for *expected cash flows* should be higher than the portfolio rate of return.

available to market participants in that market. Therefore, when assessing the relevance of the transactions and the appropriate information to include in the analysis, the valuation specialist should consider this context. See chapter 8 for additional discussion.

- 3.65** In applying many of the methods that fall under the income approach, a challenge exists in addressing the final cash flow amount, or *terminal value*. Forecasting future cash flows involves uncertainty, and the farther the forecast goes into the future, the greater the uncertainty of the forecasted amounts. Because discounting attributes less value to cash flows the farther in the future they are expected to occur, there is a point in time beyond which forecasted cash flows are no longer meaningful. For start-up enterprises with little or no operating history, forecasts beyond one or two years are likely to be speculative and unreliable (for further discussion, see paragraph 3.60). Nevertheless, the terminal value is often a significant component of the total enterprise value and the value of the securities in that enterprise, and it should be carefully considered. See appendix A, paragraphs A.01.01–.12, "Relationship Between Fair Value and Stages of Enterprise Development," for a discussion regarding the reliability of using the income approach for companies at various stages of development and appendix A, paragraphs A.06.01–.05, "Early-Stage Companies with No Recent Financing Rounds," for a discussion of approaches for valuing pre-revenue companies when significant time has passed since the most recent financing round.
- 3.66** Although it may be difficult to forecast future cash flows beyond a certain point, it does not mean that the enterprise will not have such cash flows. Those cash flows also will be periodic cash flows unless the ownership of the enterprise is changed or transferred as a result of a liquidity event. In many cases, such an event will result in a single cash flow, which represents the value of the enterprise expected to be realized at that point in time. In other cases, the liquidity event may result in multiple future cash flows, which need to be discounted to estimate terminal value. In all cases, the terminal value should be estimated and incorporated into the DCF calculation of value.¹⁸
- 3.67** The cash flows for the enterprise as a going concern also provide a basis for reasonably estimating a terminal value. That estimate generally is made at the point at which the enterprise is expected to begin generating relatively stable cash flows. That period may be one of growth at some assumed constant rate or one of no growth. See appendix A, paragraphs A.08.01–.07, "Table of Capitalization Multiples," for a discussion of capitalization multiples that may be applied to the stable annual cash flow in estimating a terminal value. Whether terminal value is estimated by the use of a capitalization multiple or other means, the terminal value is the valuation specialist's best estimate of the present value of those future cash flows, consistent with market participant assumptions. That terminal value is incorporated into the DCF calculation of value by further discounting the terminal value to a present value.
- 3.68** Finally, even if the valuation specialist is unable to reasonably estimate future cash flows beyond a certain date, the valuation specialist still should estimate a terminal value using

¹⁸ In some cases, for example, when valuing a run-off business, the *terminal value* may be zero.

acceptable valuation methods.¹⁹ That terminal value should be incorporated into the DCF calculation of value, as discussed in paragraph 3.67.

- 3.69** Another consideration in applying the income approach is the basis of the valuation (that is, whether the resulting enterprise value or value of the equity securities would be considered controlling or minority and whether it would be considered marketable or nonmarketable). The task force believes that it would be appropriate to measure the enterprise value consistent with the cash flows under current ownership and the required rate of return for the investors who in aggregate have control of the business. See chapter 7.
- 3.70** Some valuation specialists use valuation methods that split an enterprise's economic benefit streams into two or more flows and then discount each at a different rate of return. This method may be appropriate, for example, in the case of an enterprise that has a commercially viable product being sold in the marketplace but that also has a new product under development that has not yet achieved commercial feasibility. Often, the economic results of different product lines can be readily separated and the riskiness of each separately assessed. The assessment following such separation is similar to the investment analysis performed by the valuation specialist using the disaggregated segment data of diversified enterprises.

Significant Assumptions of the Income Approach

- 3.71** The income approach (DCF method) can be generalized as follows:

$$PV = Cf_1/(1+k) + Cf_2/(1+k)^2 + \dots + Cf_n/(1+k)^n$$

- **PV is the present value of future cash flows**
- **Cf_n is the expected cash flow in period n**
- **k is the risk-adjusted discount rate**

- 3.72** All income-based methods share two critical features:

- They are *forward-looking*, that is, the relevant benefit stream (PFI) is based on expectations for future cash flows (or other metrics) for a particular asset and as of a particular measurement date.
- The *discount rate selected must be consistent with the benefit stream (PFI)* with respect to the risk of the estimate, the level of the estimated benefit (for example, enterprise cash flows, cash flows to equity, cash flows to a specific security, pretax vs. after-tax, pre-revenue vs. post-revenue, and so on), the time period, and other risk factors.

¹⁹ For example, the Gordon growth method and observed market multiples are commonly used methods.

- 3.73** In addition, for entities with very long or indefinite lives, the *selection of terminal period assumptions is particularly sensitive*. For some early-stage companies, as well as more mature turnaround companies, the terminal value can represent substantially all total fair value. These key factors are further described in the following sections.

Prospective Financial Information (PFI)

- 3.74** More than any other factor, the reliability of any measurement of fair value under the income approach depends on the quality of, support for, and overall reasonableness of the PFI upon which the future stream of cash flows (or other metric) is based. It is not enough to take the prior year's revenues and costs, grow them at a fixed percentage, and then apply a risk premium to the discount rate. Just as an investment in a bad business cannot be corrected with a great structure, a bad forecast cannot be fixed with a good discount rate.

- 3.75** The quality of the PFI and its relevance for purposes of measuring fair value depends upon many factors, which are often interrelated. One useful tool for addressing these factors is the AICPA Guide *Prospective Financial Information*, which is intended to assist third-party specialists who are engaged to compile or examine client company PFI. It sets forth conditions that such specialists should follow before associating themselves with PFI that may be relied upon by third-party users. These conditions presume certain factors:

- The third-party specialist will have appropriate access to management.
- The responsible party should have a reasonably objective basis for its forecast.
- Sufficiently objective assumptions can be developed for each key factor.

The AICPA Guide *Prospective Financial Information* defines *responsible party* as "[t]he person or persons who are responsible for the assumptions underlying the prospective financial information. The responsible party usually is management, but it can be persons outside the entity who currently do not have the authority to direct operations (for example, a party considering acquiring the entity)."

- 3.76** For valuation specialists estimating the fair value of privately-held-company equity securities issued as compensation, the context is very different. The PFI is only one, albeit critical, element in the determination of a security's fair value. More importantly, many companies may not be able to support the PFI and underlying key assumptions at the level of sufficiency required by guidance found in AICPA Guide *Prospective Financial Information*. Although not directly authoritative in the context of performing a valuation using the income approach, or even feasible in many cases, it may be worthwhile referencing this guidance in relation to the level of care that it might be prudent to take when preparing or assessing the PFI upon which the company's valuation may be based.

- 3.77** The task force believes that market participant assumptions should be taken into account when considering the level of detail that would be appropriate to include in developing the PFI for the enterprise. In some cases, the market participants in the principal (or most advantageous) market may have access to forecasts or other information provided by the company; in other cases, market participants may have more limited information. The level of underlying support for PFI will vary based on the individual facts and circumstances.

Discount Rates and Discount Factors

- 3.78** As discussed herein, discounting techniques described in paragraphs 7–20 of FASB ASC 820-10-55 fall into three generic categories: a discount rate adjustment technique (with conditional cash flows) and expected present value technique method 1 (with certainty-equivalent cash flows) and method 2 (with expected probability-weighted cash flows). It is critical for the valuation specialist to properly identify the nature of the cash flows to be discounted and ensure that the correct discount rate technique is applied. The following paragraphs discuss the application of these techniques when considering the conditional PFI (cash flows and other metrics contingent on success), certainty-equivalent PFI (adjusted cash flows and other metrics on a risk-neutral basis) or expected probability-weighted PFI (probability-weighted cash flows and other metrics across the range of future outcomes).

Discount Rate Adjustment Technique (with Conditional PFI)

- 3.79** One frequently encountered type of conditional PFI is in the form of a single scenario in which a successful resolution of an uncertain risky event is assumed. This may be an assumption that a current research and development project leads to a successful product; a future product will be highly successful; high growth will be accompanied by high margins; or assumptions of other favorable developments that are uncertain at a given measurement date. In such situations, the fact that a risky outcome has been assumed to be favorably resolved in the estimate of future cash flows requires that a risk premium be considered to prevent overvaluation of the company. The quantification of such a premium is beyond the scope of this guide, but the task force believes it should bear a logical relationship to the nature of the unresolved risk. If a company, for example, has a drug candidate that has successfully completed Phase 3 trials and is awaiting final Food and Drug Administration approval, the adjustment (risk premium) to the discount rate would likely be much smaller than for a company with a similar drug candidate that has not completed Phase 3 trials. Also please note that when using this technique and updating the valuation between periods, it is important to consider the nature of the unresolved risk and the implications for the change in value. Specifically, it would not be appropriate to assume that value is accreting at the very high rate due to passage of time while risks are not resolved (see “Sidebar — Resolution of Uncertainties Over Time” in paragraph 3.94).

Expected Present Value Technique (Method 2, with Expected Probability-Weighted PFI)

- 3.80** Expected present-value-based PFI come in many forms. For example, the PFI may be disaggregated into multiple success and failure scenarios, weighted by probabilities of occurrence. This would be a more detailed way of addressing unresolved risks, such as the ultimate success of a single product or service. Another format would be a single scenario PFI that represents a weighted set of outcomes. In both of these cases, the PFI still contains risky assumptions concerning revenues, margins, growth, and other factors that require the application of a risky discount rate, such as a rate based on the *weighted average cost of capital (WACC)* or the CAPM. In general, such a rate would be lower than the conditional rate for success cash flows discussed in paragraphs 3.60 and 3.79, because the expected cash flow or other metric would already be de-risked for conditional events or milestones by explicitly considering failure via the probability-weighting process.

Expected Present Value Technique (Method 1, with Certainty-Equivalent PFI)

- 3.81** Method 1 is a special case of the expected present value method in which multiple scenarios are considered and probability-weighted as discussed. However, the future cash flows are then further de-risked so that the only remaining risk is the time value of such cash flows. In this case, the appropriate discount rate is the risk-free rate because all other uncertainties have already been taken into account in the estimation of future cash flows. This discounting technique is rarely encountered in enterprise or aggregate equity measurements. It is consistent with option pricing methods and certain Monte Carlo applications that are performed in risk-neutral frameworks.

Entity Versus Investment-Level Cash Flows

- 3.82** When the unit of analysis is an entity (either the entire invested capital or the aggregate equity value of the entity), one or more discount rates based on the risk associated with each potential future periodic benefit is applied to convert these future benefits into a single point estimate of present value:
- Most entities can be appropriately valued using a single discount rate.
 - Some entities have evolving risk profiles and capital structures that may call for more complicated discount rate assumptions.
- 3.83** When the unit of analysis is a specific tranche of stock, for example, and the PFI has been adjusted to focus on the cash stream available to this specific level of security, further adjustments to the discount rate should be considered. For example, common stock that is junior with regard to liquidation rights and so on is higher risk than preferred stock in many scenarios and may be higher risk than the entity's aggregate equity. As discussed in chapter 6, "Valuation of Equity Securities in Complex Capital Structures":
- The valuation specialist should consider whether different discount rates should be used for each shareholder class, considering the relative risk of each class. The

discount rates would typically be calibrated to the most recent round of financing so that the selected probabilities and discount rates are internally consistent.

- The discount rate for the common stock and junior preferred may take into consideration the leverage imposed by the debt as well as the liquidation preferences senior to each class. The weighted average discount rate across all the classes of equity should equal the company's cost of equity. This approach is a form of method 2 of the expected present value technique discussed in [paragraph 3.62](#).
- Estimates of the risk-adjusted rate of return an investor would require for each share class, given the risk inherent in the probability-weighted cash flows to each class, will vary based upon the risk associated with the specific enterprise and share class and will be determined based upon a review of observed rates of return on comparable investments in the marketplace.
- Note that it would typically not be appropriate to select a different discount rate for each event scenario because investors cannot choose among these outcomes. Instead, the valuation specialist should select a discount rate for each share class appropriate to the risks inherent in the probability-weighted cash flows to this class. However, the discount rate should be consistent with the risk – for example, a participating preferred stock equals a *debt-like preferred stock* plus upside participation (equivalent to common stock), and a convertible preferred stock equals a debt-like preferred stock plus a conversion option (equivalent to a warrant on the common stock). Therefore, the discount rate selected for the common stock must be consistent with the discount rate selected for the upside participation for the preferred stock (that is, the two discount rates will be equal for participating preferred stock, and the common stock discount rate will be lower than the discount rate for the preferred stock conversion option for convertible preferred).
- To summarize, discount rate selection must always take its cue from the risk profile of the cash flow estimate to be discounted. It must match the level (enterprise, aggregate equity, specific security), the type (conditional, expected, certainty equivalent), and the nature (pre-revenue costs, post-revenue profits) of the benefit stream (PFI) to be valued, and it must carefully account for the qualitative factors identified and discussed herein.

Terminal Period Assumptions

- 3.84** The terminal value represents the value of the enterprise as of the end of the discrete cash flow period in a DCF model, consistent with market participant assumptions. As previously discussed, the discrete period conceptually would cover a sufficient number of periods to allow for the entity to reach a steady state in which the entity's cash flows are expected to grow thereafter at a constant rate. However, many valuation specialists will estimate the terminal value at an earlier point in the company's development, coinciding with the timing of an expected exit event.

- 3.85** Acceptable and commonly used methods for calculating a terminal value include a long-term growth rate method, such as the *Gordon growth model*, the *two-stage growth method*, the *H-Model method*,²⁰ and the observed (exit) market multiple method. After applying one of these methods, the terminal value is incorporated into the DCF calculation by discounting the future value of the terminal value to a present value. See appendix A, paragraphs A.08.01–.07, "Table of Capitalization Multiples," for additional discussion of long-term growth rate methods compared with the exit market multiple method.
- 3.86** As mentioned, the terminal value is often the single largest component of value in a DCF analysis. Thus, the assumptions embedded in the terminal period calculation should be subject to heightened scrutiny.
- 3.87** Key assumptions (and potential pitfalls) include the following:
- Final year cash flow (or other metric)
 - Care must be taken not to simply apply a growth rate to the final discrete year of the PFI without consideration of whether the discrete period has reached a normalized level of cash flows. Please see paragraph A.08.04 for discussion.
 - The estimate should be properly adjusted to address future fixed asset and working capital needs consistent with the terminal growth rate, and the long-term depreciation assumed should be consistent with long-term capital expenditures.
 - The estimate should take into account any industry-specific factors.
 - The estimate should account for any business, industry, or macroeconomic cycles.
 - Final growth rate (in cash flow)
 - One mistake is assuming that terminal growth rates are always positive.
 - A sensitivity analysis should be considered with respect to terminal growth rates to assess a range of inherent estimation uncertainty.
 - Applicable *capitalization rate* (discount rate less growth rate)
 - Care should be taken to ascertain that the capital structure (and other elements of the entity's risk profile) in the terminal period is consistent with the preceding

²⁰ The common theme among various long-term growth methods is that a long-term growth method estimates terminal value based upon the present value of estimated future cash flows. The Gordon growth model is used when the entity is expected to have a stable long-term growth rate in the terminal period. The two-stage method is used when the entity is expected to have an initial phase of higher growth in the terminal period followed by a subsequent phase of stable long-term growth. The H-Model is similar to the two-stage method except the initial phase of higher growth is not constant but declines linearly over time to reach the subsequent phase of stable long-term growth.

discrete periods; to the extent it is inconsistent, such differences should be explainable.

- In performing a DCF analysis using the discount rate adjustment technique, the discrete cash flows often reflect the cash flows that would be achieved if the business is successful. These cash flows would be discounted at a discount rate reflecting the risks of achieving the forecast through the terminal period. In the terminal period, the discount rate should reflect the discount rate that market participants would require given the remaining risks in the business at that point in time because the terminal value reflects the value that the business would have in that terminal year, assuming that it has achieved the projected cash flows.
- Note that to estimate the total enterprise value, the present value of the terminal value would be added to the present value from the discrete cash flows, considering the market participant *required rate of return* given the probability of achieving these cash flows. The concluded terminal value would be consistent with the expected exit multiple for the business. The risk of achieving that terminal value would be captured in the present value added to the enterprise value.
- If the discrete period is modeled using expected present value technique, then the terminal value would be considered in the probability-weighted cash flows, and it would be reasonable to use a single discount rate for both the discrete period and the terminal period.

Leverage Assumptions

3.88 Another factor in estimating the value of an enterprise and the overall cost of capital for the enterprise is the amount of leverage available. For example, in a *leveraged buyout* (LBO), market participants typically estimate the value of a business considering the amount of leverage available to that business. If market participants would estimate that they would be able to raise debt financing for their purchase at 6x EBITDA, they might then be inclined to pay more for the enterprise than if debt financing could be raised at only 5x EBITDA. The added leverage would help the investors achieve their required rate of return on equity, albeit with commensurately greater risk. This approach may be relevant for valuing the securities underlying the stock-based compensation awards for enterprises that were purchased through an LBO or that may be attractive targets for an LBO. When a business is underlevered, it may be possible to increase the equity value by adding leverage through a recapitalization.

3.89 To analyze the impact of leverage, some market participants may use the income approach, considering the resulting cash flows to equity and the equity required rate of return. The DCF method may be used to estimate the present value of future cash flow streams to equity holders. The key inputs for this analysis are the equity required return, leverage terms, the operating cash flows (to calculate debt service, dividend capacity, leveraged cash taxes, and exit metric), and the expected exit value (multiple). This type of analysis may be most applicable for subject assets with a history of being an LBO

target, or when the likely market participants are buyout financial sponsors. The output from this analysis would be the incremental equity value that a financial sponsor might be willing to pay, given the leverage available; the sum of this equity value plus the estimated debt capacity would be the enterprise value for the business. The valuation specialist would then subtract the company's current value of debt for the purpose of valuing equity to estimate the value of the securities given the actual debt obligations of the company.

- 3.90** In analyzing the business value considering a potential LBO transaction and the leverage and equity value that would result from that transaction, it is important to consider an equity-specific discount rate, typically reflective of a buyout financial sponsor's required rate of return for the type of asset, calibrated to the transaction price. Other key assumptions, such as the leverage terms and the expected time to exit, would be assessed considering market participant assumptions.
- 3.91** It is also possible to estimate the value of equity under the existing capital structure using the cash flows to equity and the required rate of return to equity given the existing capital structure. In this analysis, rather than considering the hypothetical amount of leverage available in a new LBO, the valuation specialist would consider the actual amount of leverage and the corresponding cost of equity. This analysis would allow the valuation specialist to directly estimate the value of equity, rather than adding back the hypothetical leverage and then subtracting the actual leverage. In this analysis, the valuation specialist would also need to make realistic assumptions about expected changes in leverage; for example, if the enterprise is under-levered, the valuation specialist might assume the enterprise would do a recap in a year.

Comparing Value Indications between the Income Approach and Market Approach

- 3.92** It is important to note that the income approach has the same objective as the market approach and is often based on inputs that are identical in substance. For example, a revenue multiple is essentially the inverse of a cash flow capitalization rate, adjusted for the relationship between net cash flow and revenue. For illustrative purposes, consider the following example for a company that has reached a steady growth state:

Income Approach

NTM revenue \$10,000,000

Cash flow margin 20%

NTM cash flow \$2,000,000

Capitalization rate 10% = 15% WACC less 5% growth

Valuation multiple 10.0x (1)

Enterprise value \$20,000,000

(1) Inverse of 10% capitalization rate: $1/(15\% \text{ WACC} - 5\% \text{ growth})$

Market approach

NTM revenue \$10,000,000

Revenue multiple 2.0x (2)

Enterprise value \$20,000,000

(2) Income approach valuation multiple $\times$ 20% cash flow margin

Note that this simplified example includes only one year in the income approach for illustrative purposes, even though a typical DCF method would include several years in the discrete period. The more granular assumptions with respect to margins, growth, and cost of capital in the income approach are consistent with a revenue multiple in the range of 2.0x. If, for example, a multiple of 1.8x or 2.2x were selected, the value under the market approach (\$18 million or \$22 million) would differ from the income approach as of this measurement date; such a difference may or may not be acceptable, depending on facts and circumstances. If, however, a revenue multiple in the range of 4.0–4.5x were selected, the resulting large value differential between the income and market approach would suggest that the key underlying metrics be re-evaluated. The relationships between the income and market approaches represent an important consideration of the reasonableness of both approaches and should be considered whenever multiple approaches are applied based on individual facts and circumstances.

Milestone-Driven Valuations

- 3.93** In corporate finance theory, it is generally accepted that when discounting a risky future cash flow, the discount rate should include (a) the time value of money, often at a risk-free rate; (b) a market risk premium; and (c) other adjustments to account for risks not captured in (a) and (b). The PFI may represent a conditional scenario that assumes, for example, that a new product will be successfully completed and gain market acceptance, or the PFI may consider the probability of passing to the next stage of development as each milestone is met.²¹ The discount rate would need to be adjusted to capture such additional risks.
- 3.94** Market and other risks are generally treated as a function of time; therefore, a payoff that is subject to these risks for a longer period of time would be worth less today than an equivalent payoff subject to these risks for a shorter period of time. When using a present value technique in which the expected payoff is based on a probability weighted value of

²¹ For an example, see table 6-5 in the AICPA Accounting and Valuation Guide *Assets Acquired to Be Used in Research and Development Activities*. Specifically, table 6-5 provides an example of an adjustment based on the development and probability-weighting of downside scenarios. In this example, the in-process research and development asset being valued is entering phase II clinical trials. The valuation specialist has identified four potential scenarios for the success of the asset through clinical trials and commercialization, ranging from failure of phase II trials through a highly successful commercial launch. Each scenario includes corresponding prospective revenues and expenses as well as an assessment of the probability of occurrence. For example, the scenario in which phase II, but not phase III trials, are successful shows significant expenses during the trial periods but no revenue thereafter. This scenario is assigned a probability of 20%.

a company at exit, as time passes but no new information is available regarding the probability of a successful outcome, one perspective is that the time over which the ultimate exit value is subject to market and other risks has now decreased, and the value should increase as a function of the discount rate and decreased time, all else equal. However, if the discount rate includes a premium for the uncertainty of conditional events or other risks that are not a linear function of time, value should not be accreted simply as a result of a decrease in the time to exit.

SIDEBAR — RESOLUTION OF UNCERTAINTIES OVER TIME

The underlying concept of risk-adjusted returns and related discount rates within the valuation profession is that the risk premium is directly related to time; that is, when cash flows are discounted at a risk-adjusted rate of return, the inherent assumption is that risk is resolved as time passes. This is often, but not always, the case. When this link between risks and time is broken, a certainty-equivalent technique will frequently produce better results. Brealey & Myers dealt with this issue; the following example is based on their approach:

Assume a cargo ship leaves London on January 1, 1701, headed for the Far East. The expected round-trip time is 2.0 years. The expected present value of the cargo after expenses as of January 1, 1703 is \$200,000. However, the voyage has many risks:

- *The ship may sink.*
- *It may be delayed.*
- *The crew may not survive or return.*
- *The cargo may not be as valuable as hoped.*
- *Trip expenses may be higher than planned.*

Based on all the preceding risks, the present value of the voyage is \$120,000, implying a risk-adjusted discount rate of 29.1%. The risk-free rate in London is 5%. One more fact — due to the state of communications technology in the early 18th century, the owners of the ship will have no knowledge of how the voyage is going until the day the ship returns to London.

At December 31, 1701, the owners want to record the updated value of this voyage. Using the implicit rate of return of 29.1%, they suggest reporting the adjusted value at \$154,900 ($\$120,000 \times 1.291$). However, can this be correct? What knowledge have they gained during this 12-month period? Do they know if the ship has successfully reached its destination? Do they have any information about the volume and price of any cargo? Do they know if the voyage is on schedule? To sum up, all that is known is that one year of the two-year period has expired. Given the lack of information, the only adjustment that the owners can legitimately record is the time value of money for one year at the

risk-free rate of 5%,²² for an adjusted value of \$126,000. One year later, on December 31, 1702, the value can be adjusted again, to \$132,300. Whether the value appreciates to \$200,000 the next day will depend on an evaluation of the cargo, net of costs, that the owners (hopefully) will learn the next morning when the ship returns.

In summary, the risk premium (\$67,700) clearly does not vary or resolve linearly with time. Use of a risk-adjusted rate of return during interim periods (in the absence of learning) will produce an overstated value.

3.95 For equity securities in which fair values are based on anticipated exit events, the change in value at any particular date is a function of (a) changes in the probabilities associated with achievement of exit scenarios, (b) changes in the values of the expected exit scenarios, (c) changes in discount rate, and (d) changes in time to exit event(s). If a substantial portion of the risk included in the discount rate depends on the achievement of conditional events (milestones), rather than the passage of time, there are several techniques that may be employed to ensure that the fair value at subsequent measurement dates is appropriate as follows:

- Assume that market participants would not increase the value due to the passage of time by using the original time horizon within the calibrated *valuation model*. For example, if a value-enhancing milestone was originally expected to occur nine months from the investment date, six months have passed, and resolution of the milestone is expected to be known in three months, the investor simply assumes there is still a nine-month period of uncertainty. Market participants might make that assumption to reflect the lack of progress toward resolution of the uncertainty. Mathematically this assumption produces a value that is consistent with the lack of risk resolution.
- Assume that the discount rate is increasing. In this case, the time horizon is appropriately reduced, but the potential gain in value is offset by applying an increased discount rate. Again, this produces a value that is consistent with facts and circumstances.
- Bifurcate the risky discount rate. This technique is based on the reasonable recognition (at time of initial investment) that the risky rate used to calibrate the conditional or success-based PFI to the amount invested comprises at least two types of risks:
 - Risks that resolve with the passage of time, such as product sales, workforce expansion, and so on; for early-stage companies, this component of the discount rate may be very small, and even approximated by the risk-free rate; as time passes, the accretion in value due to this component will typically be insignificant.

²² Note that at current risk-free rates, the value change between dates due to time value of money is de minimis and would typically be ignored.

- Risks that resolve with the occurrence of key events; this component may best be modeled through use of probability-weighted scenarios; as key events occur, the accretion in value from adjustments to the probability of success may be significant.

This final technique does not require the application of arbitrary assumptions, such as ignoring the passage of time or making adjustments to discount rates that are not supported by changes in the market or at the enterprise. However, in the absence of the resolution of significant risks or achievement of milestones, all three techniques will produce similar estimates of fair value.

Asset Approach

- 3.96** Of the three approaches to valuing an operating enterprise and the securities in the enterprise under a going concern *premise of value*, the asset (or asset-based) approach is considered to be the weakest valuation method, from a conceptual standpoint, under most circumstances. It may, however, serve as a "reality check" on the market and income approaches and provide a "default value" if the available data for the use of those other approaches are fragmentary or speculative. The *asset approach* is typically more relevant for valuing enterprises and their securities in the earliest stages of development, prior to raising arm's-length financing, when there may be limited (or no) basis for using the income or market approaches. The use of the asset approach is generally less appropriate in the later stages of development once an enterprise has generated significant intangible and goodwill values.²³
- 3.97** For certain equity securities where market participants would value the enterprise primarily based on the value of its tangible assets, the asset approach may be an appropriate methodology. For example, at the early stages of real-estate or other development projects, market participants may not assign value for the potential future profits of the business beyond the amount spent in developing the tangible assets to date. At the same time, the sellers of the project would assign value to the amount invested in the project to date, adjusted for any changes in the project's direction and changes in relevant market conditions. See paragraphs 3.99–.102 for further discussion of the replacement *cost approach*.²⁴
- 3.98** The *International Glossary of Business Valuation Terms*, which has been adopted by a number of professional societies and organizations, including the AICPA, and is included

²³ See the discussion in appendix A, paragraphs A.01.01–.12, "Relationship Between Fair Value and Stages of Enterprise Development."

²⁴ Within FASB's cost approach concept, practitioners distinguish valuations of individual assets and business enterprises by using different terminology. The cost approach is said to have been applied when valuing individual assets, and the asset approach is said to have been applied when valuing business enterprises. The *International Glossary of Business Valuation Terms*, which has been adopted by a number of professional societies and organizations, including the AICPA, and is included in appendix B of VS section 100 defines *asset approach* as "[a] general way of determining a value indication of a business, business ownership interest, or security using one or more methods based on the value of the assets net of liabilities."

in appendix B of VS section 100, *Valuation of a Business, Business Ownership Interest, Security or Intangible Asset*, defines the *asset approach* as "[a] general way of determining a value indication of a business, business ownership interest, or security using one or more methods based on the value of the assets net of liabilities." The general principle behind the asset approach is that the fair value of equity is equivalent to the fair value of its assets less the fair value of its liabilities. When using the asset approach, it is important to consider not only those assets that are recognized in the entity's financial statements but also assets that are not recognized in the financial statements. In particular, internally developed assets, such as intangibles created through research and development activities, are typically not recognized in the financial statements but are an important component of the enterprise value for many early-stage companies. Under the asset approach, the *asset accumulation method* is commonly used, whereby the value of the enterprise is estimated to be the net of the fair value of the enterprise's individual assets and liabilities.²⁵ The fair values of individual assets and liabilities may be estimated using a variety of valuation methods.

3.99 In applying the asset accumulation method under the asset approach, it is necessary to estimate the values of the tangible assets. In some instances (for example, when estimating the fair value of an asset that is part of a turnkey operation), a *cost approach*²⁶ is often used, with the *replacement cost new* (or replacement cost) being a common method. Under this method, an asset's value today is what it would cost today to acquire a substitute asset of equivalent utility. In applying the cost approach, replacement cost often serves as a starting point and then adjustments are made for depreciation or changes in relevant market conditions, as discussed in the following paragraph.

3.100 Tangible assets change value over time due to a variety of factors:

- Changes in relevant market conditions, such as the cost of the components used in the project (for example, the cost of materials for a real estate project), or the value of properties in the specific market (for example, due to regulatory or zoning changes or the attractiveness of the type of development)
- Depreciation for physical usage for certain assets and the fact that certain used assets may have a shorter expected remaining life than new assets

²⁵ The *asset accumulation method* is also commonly referred to as the *adjusted net asset value method* or the *adjusted book value method*.

²⁶ Cost approach is one of the valuation techniques that can be used to estimate fair value of individual assets. According to the FASB ASC glossary, the *cost approach* is "[a] valuation approach that reflects the amount that would be required currently to replace the service capacity of an asset (often referred to as *current replacement cost*)." FASB ASC 820-10-55-3E further indicates that "[f]rom the perspective of a market participant seller, the price that would be received for the asset is based on the cost to a market participant buyer to acquire or construct a substitute asset of comparable utility, adjusted for obsolescence."

- Obsolescence or costs that would not have to be incurred to replace the asset if the project were started again, related to function, technology, and external factors, including locational and economic²⁷
 - Increases in maintenance charges associated with increases in age of certain assets
- 3.101** The replacement costs for a project would include the soft costs associated with planning, approvals, and so on, to the extent that they would still be relevant to completing the project. That is, to estimate fair value in an unforced transaction, a valuation specialist would typically consider the perspective of a market participant who was investing in the project, assuming that the project would be developed as planned. Note that in observed transactions in which projects are sold after the design work is completed but before tangible progress has begun, market participants typically do not pay full value for the soft costs incurred. However, such transactions are rare and often reflect situations in which the original investor was not able to obtain financing or otherwise was forced to abandon the project and, therefore, the transaction prices may incorporate some degree of distress. Therefore, the soft costs would be included as part of the value to the extent that they would still be useful for the project.
- 3.102** In some cases, replacement cost may be estimated by comparing historical cost with a relevant current index published by a trade association, government agency, or other independent source. An example is the valuation of a building using a relevant construction cost index that takes into account the kind of building and its location. (Factors not incorporated into the index, such as the effects of technological changes and building cost changes, also would be considered in estimating replacement cost.)
- 3.103** In the absence of having built substantial goodwill or intangible value, an enterprise's value under the asset approach is based on the fair value of its tangible assets less its liabilities. The asset approach is most useful when it is applied to tangible assets and enterprises whose assets consist primarily of tangible assets. The reliability of value estimated under the asset approach tends to be greater for tangible assets recently purchased in arm's-length transactions. Because many early-stage enterprises derive the majority of their value from the development of intangible assets (for example, through research and development), the asset approach is unlikely to be appropriate for these enterprises unless the value of these intangible assets is included.
- 3.104** Another consideration in applying the asset approach is the basis of the valuation (that is, whether the resulting enterprise value would be considered controlling or minority and whether it would be considered marketable or nonmarketable). See chapter 7 for additional discussion.

²⁷ See, for example, Robert F. Reilly and Robert P. Schweihs, *Valuing Intangible Assets*, New York: McGraw-Hill, 1998.

Significant Assumptions of the Asset Approach

- 3.105** The asset approach requires assumptions related to the individual fair value of the enterprise's assets and liabilities. In estimating the value of tangible or intangible assets, such as real estate development projects or research and development projects under the asset approach, the valuation specialist might estimate under a cost approach that part of the expenditures needed to replace the project. For example, for a research and development project for an early-stage enterprise, the costs expended to prove the feasibility of a product or service concept may serve as a proxy for the project's value. The rationale for this assumption is that if an expenditure results in the creation of value, then an enterprise acquiring the asset would not have to replicate those costs (that is, they are already incorporated in the asset).
- 3.106** If historical project costs are used as a proxy for the replacement cost of the asset, a significant issue is the determination of whether any adjustments are necessary to reflect the costs that would be necessary to replace the asset with one of equivalent utility. For instance, the state of obsolescence or impairment of the asset subsequent to its creation is an important consideration. Often, an asset is operationally functional but has lost value as a result of new products or services that are more efficient or operationally superior. Thus, although the historical cost of the asset may be easily determinable, its replacement cost may be less than historical cost due to obsolescence or impairment. The software industry, for example, has many examples of product obsolescence and impairment.
- 3.107** An additional consideration is that historical costs may include *sunk costs* related to failed efforts that are not directly attributable to the asset being valued but that may have contributed indirectly. For example, if a biotechnology enterprise has spent a significant amount of money proving a new protocol for the treatment of cancer, the question arises regarding what intangible asset value this research has generated for valuation purposes. Even if, say, 9 out of the 10 protocols the enterprise experimented with failed, the cost of the experimentation process itself may be considered as contributing to the value of the effective protocol because an enterprise purchasing the intangible asset would not need to pursue those same failed paths to identify an effective protocol. In addition, the value of a known successful protocol may far exceed its cost. In some cases, research may be necessary to advance knowledge or acquire assets (for example, locate oil), and in those cases, the cost of the research phase may be considered an integral part of the cost of the enterprise's development. However, sunk costs that are incurred as the result of enterprise inexperience typically would not be considered as part of the value under the cost approach. Assumptions regarding the valuation of research would ordinarily be disclosed in a valuation report.
- 3.108** Another consideration is the extent to which it is appropriate to include a developer profit component in estimating an asset's replacement cost. Generally speaking, as assets are developed, the expectation is that the developer will receive a return of all costs associated with development and may also receive a return on those costs. Otherwise, there would be no incentive to develop the asset. For example, in a real estate development project, the cost of carry (financing costs, including both interest expense and a return on equity, measured as a percentage of costs incurred) would be an inherent

component of the replacement cost of the project, as any market participant would incur similar costs. In addition, it may be necessary to consider an entrepreneurial incentive, or opportunity cost. However, market participants may or may not be willing to pay more than the base replacement cost until and unless the project has reached certain milestones. The fair value would consider the way these factors would influence the price at which the asset would transact given the negotiation dynamics for the specific asset.

- 3.109** The task force recommends that the treatment of overhead costs in determining the cost of an asset be disclosed in the valuation report. Typically, this disclosure would be most applicable in the case of a self-constructed asset.
- 3.110** The cost approach to valuing individual assets does not consider interest or inflation. Two valuation methods to determining replacement cost under the cost approach are useful in explaining why that is the case. One method assumes the purchase of an identical asset in its current (depreciated) condition. The other method assumes the replication of a self-constructed asset. With respect to the first method, there is no need to consider either the time value of money or inflation because the assumption is that all costs are incurred as of the valuation date. With respect to the second method, the cost would be obtained by applying to the asset's historical cost an index of specific price change for that asset. Once that index is used, there is no further need to adjust for inflation because the index adjustment is the measure of specific inflation for that asset and includes a measure of general inflation.

Applying Calibration in Valuing the Securities in an Enterprise

Market Approach

- 3.111** In valuing the securities in an enterprise, one approach is to estimate the overall enterprise value excluding cash using a multiple of EBITDA, revenues, or other financial metrics, add cash or cash equivalents, and then subtract the value of debt that a market participant would consider. These multiples are typically selected based on guideline public data or transaction data and, therefore, this valuation technique is a form of the market approach. See paragraphs 3.09–.54 for additional discussion of the market approach.
- 3.112** In selecting a multiple in the market approach, it is important to consider not only the range of observable multiples but also the differences between the subject company and the selected guideline companies or transactions, which might indicate that a higher or lower multiple is appropriate. Calibration to a relevant observable transaction such as a recent financing transaction or secondary market transaction as discussed in chapter 8, provides an indication of the way that market participants would value the subject company as of the transaction date given the differences between the subject company and the selected guideline public companies or transactions. These initial assumptions can then be adjusted to take into account changes in the subject company and the market between the transaction date and each subsequent measurement date.

- 3.113** For example, suppose that a company is acquired for \$500 million, with \$200 million in equity and \$300 million in debt. This company has an outstanding management team and is expected to grow faster than the guideline public companies in the industry. The transaction price implies a multiple of 10x the LTM EBITDA of \$50 million, and 8.33x the *forward EBITDA* of \$60 million. For comparison, the median multiple observed for the selected comparable public companies is 8x the LTM EBITDA, and 7x the forward EBITDA.²⁸ The difference between the implied multiple paid and the median observed multiples in this example was due to the market participants' assessment that the near-term financial performance for the company was likely to exceed that of its peers. In the next measurement period, it typically would not be appropriate to ignore the multiple implied by the transaction and assume that the company's value would suddenly fall to be consistent with the median of the guideline public companies. Instead, at subsequent measurement dates, the valuation would consider the subject company's progress and changes in observable market data (such as the EBITDA multiples of the guideline public companies) to estimate the fair value under current market conditions.
- 3.114** Continuing this example, suppose that after 6 months, the company is performing as expected. LTM EBITDA has improved to \$55 million, and forward EBITDA has improved to \$64 million. Furthermore, the median multiple for the guideline public companies has improved to 9x the LTM EBITDA instead of 8x, and 7.5x forward EBITDA instead of 7x. After considering the company's recent performance and positioning, the valuation specialist concludes that market participants would still expect the company to outperform the guideline public companies but not to the same extent. To update the valuation, the valuation specialist selects a multiple of 10.5x LTM EBITDA, indicating a value of \$577.5 million, and 8.5x forward EBITDA, or \$544 million. Considering both these indications of value to be equally relevant (given the facts and circumstances in this example), the valuation specialist concludes on an enterprise value of \$560.75 million.
- 3.115** On subsequent measurement dates, the calibrated inputs will be updated and considered in estimating the fair value of the company. In the example, the company was acquired at 10x LTM EBITDA, but the guideline public companies were trading at 8x LTM EBITDA. At subsequent measurement dates, the valuation specialist would consider the change in the observable comparable multiples and the change in company-specific factors to select updated valuation multiples for the subject company. In the example, the median multiple for the guideline public companies increased to 9x LTM EBITDA after 6 months; therefore, on a purely mathematical basis, the calibrated initial input of 10x would be adjusted to a multiple of 11.25x. However, because some of the planned improvements had already been realized, the valuation specialist, instead, selected a multiple of 10.5x, taking into account the fact that market participants would no longer expect the subject company to outperform the guideline public companies to the same degree. The selected multiple reflects the fact that the company had directionally narrowed the gap in realized and expected performance relative to the guideline

²⁸ See paragraphs 3.09–.54 for further discussion on valuation methodologies for estimating the fair value of a business using the market approach.

companies. Using calibrated inputs in this way can facilitate communications about the differences between the subject company and the guideline companies and how those differences are changing over time.

- 3.116** To estimate the *equity value* corresponding to this enterprise value, management then considered the value of debt. The valuation specialist observes although the company's credit quality is unchanged, interest rates have decreased slightly over the six-month period. Because a debt prepayment would incur a penalty, this decline in yields would indicate that the value of debt increased – that is, the debt holders have the right to an above market yield, and the company could not prepay the debt at par and refinance to obtain a lower rate. Using the *yield method*, the valuation specialist estimates the value of the debt for the purpose of valuing equity of \$304.5 million. Subtracting the debt, this analysis implies a total equity value of \$256.25 million (a 28% increase over six months). See chapter 4 for additional discussion.

Income Approach

- 3.117** Another widely used approach for valuing the securities in a business is to estimate the overall enterprise value considering the projected cash flows of the business using the *DCF method*, then to add cash and cash equivalents, and finally to subtract the value of debt that a market participant would consider. These cash flows correspond to the expected income of the business and, therefore, this valuation technique is a form of the *income approach*. See paragraphs 3.55–.91 for additional discussion of the income approach.
- 3.118** The key inputs in the DCF method are the projected cash flows and the market participants' *required rate of return*, or *discount rate*. In selecting a discount rate, it is important to consider not only the various inputs typically used to estimate the cost of capital but also the differences between the subject company and the selected guideline companies used in estimating these other inputs, which might indicate that a higher or lower cost of capital is appropriate. Calibration to a relevant observable transaction provides an indication of the way that market participants would value the subject company as of the transaction date given the differences between the subject company and the selected guideline public companies. These initial assumptions can then be adjusted to take into account changes in the subject company and the market between the transaction date and each subsequent measurement date.
- 3.119** For example, suppose a company is acquired for \$500 million, with \$200 million in equity and \$300 million in debt, consistent with the market approach example described in paragraphs 3.113–.116. This acquired company has an outstanding management team and is expected to grow faster than the guideline public companies in the industry. The transaction price implies an *internal rate of return (IRR)* of 15.7% when considering the transaction price, forecast future cash flows, and modeled *terminal value*.²⁹ The difference between this implied required rate of return and the *weighted average cost of*

²⁹ See paragraphs 3.55–.91 for further discussion on valuation methodologies for estimating the fair value of a business using the *income approach*.

capital (WACC) estimated for the selected guideline public companies in this example was due to market participants' assessment that given its high growth rate, the company is riskier than the selected guideline public companies. The valuation specialist typically cannot make revisions to the forecast to capture the probability-weighted expected cash flows or otherwise to adjust the forecast to reflect these risks. In the next measurement period, it typically would not be appropriate to ignore the required rate of return implied by the transaction and assume that the WACC for the company would suddenly fall to be consistent with the median of the guideline public companies. Instead, at subsequent measurement dates, the valuation would consider the subject company's progress and changes in observable market data (such as changes in the equity risk premium or betas for the selected guideline public companies) to estimate the fair value under current market conditions.

3.120 In the DCF method, the implied transaction IRR provides strong evidence to support the company-specific risk premium (CSRP or alpha), one of the most judgmental components of the WACC or discount rate, which will be used to estimate fair value at subsequent measurement dates. Continuing the example from paragraph 3.119, suppose that, as of the transaction date, based on market data and considering the selected guideline public companies, the following components of the WACC are determined:

Risk-Free Rate of Return	3.0%
Levered Beta	1.05
Market Risk Premium	6.3%
Small Stock Premium	6.0%
Company-Specific Risk Premium	7.7%
Cost of Equity	23.3%
Equity Weighting	60%
Cost of Debt (post-tax)	4.2%
Debt Weighting	40%
Discount Rate (WACC)	15.7%

Although judgment is required to identify the inputs to a WACC calculation as summarized previously, such judgments are relatively straightforward, except for the CSRP. Calibration is a tool that allows a CSRP to be identified at inception and provides a starting point for evaluating subsequent changes in the CSRP. In this example, given the inputs noted previously, a CSRP of 7.7% was the calibrated input necessary to result in a WACC of 15.7% matching the transaction IRR.

3.121 Continuing the example, suppose that after six months, the company was performing to plan. Given the history of successful execution, it was determined that the risk specific to this company had decreased. However, with the projected high growth rate, significant risk still remained. Therefore, a CSRP of 6% was used as an input to determine the overall discount rate at the measurement date. Fair value was determined by applying a 14.8% discount rate to the updated cash flows, resulting in an enterprise value of \$570 million. Updated inputs used to determine the discount rate were as follows:

Risk-Free Rate of Return (updated to reflect current market conditions)	3.2%
Levered Beta (updated to reflect current market conditions)	1.1
Market Risk Premium (updated to reflect current market conditions)	6.0%
Small Stock Premium (no change in the market)	6.0%
Company-Specific Risk Premium (changed from 7.7% due to de-risking of the company)	6%
Cost of Equity	21.8%
Equity Weighting (no change in expected market participant assumptions regarding expected capital structure)	60%
Cost of Debt (post-tax) (updated to reflect current market conditions)	4.2%
Debt Weighting	40%
Discount Rate (WACC)	14.8%

3.122 On subsequent measurement dates, the calibrated inputs will be updated and considered in estimating the company's fair value. In the example, the company was acquired with a 15.7% implied IRR. At subsequent measurement dates, the valuation specialist would consider the change in the observable cost of capital inputs for the guideline public companies and the change in company-specific factors. In the example, the inputs reflecting the risk-free rate, beta, and market risk premium were all updated after 6 months to reflect guideline public companies and the market conditions as of the new

measurement date. Because some of the planned improvements had already been realized, the valuation specialist determined judgmentally that the CSRP should be reduced from 7.7% to 6%, resulting in an overall a discount rate of 14.8%, given that market participants would no longer expect the subject company to have the same degree of risk. The selected discount rate reflects the fact that the company had directionally narrowed the gap in risk relative to the guideline public companies. Using calibrated inputs in this way can facilitate communications about the differences between the subject company and the guideline public companies and how those differences are changing over time.

- 3.123** Although this example focused on calibrating the CSRP assumption for a given set of cash flows, it is important to note that for many private-equity (PE)- and VC-backed companies, a significant portion of the total value of the business is in the terminal value. Calibration would also help to ensure that the modeled terminal value is consistent with the original transaction and the change in the company and the markets from period to period, and that these two critical assumptions (cash flows, including the terminal value, and discount rate) are internally consistent. In most cases, there will be several significant drivers of value, and calibrating the analysis to use qualitative and quantitative inputs that are both individually supportable and collectively consistent with the transaction requires judgment.

Relevance of Calibration as Time Passes

- 3.124** Calibration to a relevant observable transaction is most useful when the measurement date is close to the transaction date. However, even if a substantial period has passed, calibration can be used to ensure the consistency of the unobservable assumptions with the transaction price as of the transaction date and that the evolution of those assumptions over time is reasonable in light of the facts and circumstances at each measurement date. In addition, calibration can be used to ensure that the movement in the valuation between measurement dates is reasonable, even in the absence of a recent transaction.
- 3.125** Calibration between a transaction date and the measurement date or between measurement dates stops being relevant when there has been such a significant change in the circumstances that warrants a change in the valuation methodology. For example, consider the following:
- If the company is about to be sold, the valuation would consider the likelihood of a successful sale at a given price, potentially supported or triangulated with the income approach or market approach.
 - If there has been a significant change in the company that makes observable comparable data more relevant than the historical transactions for the company itself, for example, when there are changes to the company's business model, stage of development, anticipated exit, or principal market.

Implications of Calibration When Considering Theoretical Discounts or Premiums Associated With Control and Marketability

- 3.126** Calibration resolves one of the significant challenges faced by valuation specialists — namely, assessing unobservable inputs consistent with the forecasts provided by management. For example, under the income approach, the valuation specialist would initially estimate the expected cash flows for the company under current ownership through a liquidity event and then calibrate to calculate the required rate of return on the transaction date. Because the transaction price already incorporates market participants' required rate of return, the *basis of valuation* is consistent with the cash flows under current ownership and the required rate of return for the investors who in aggregate have control of the business, so no additional adjustment for control or illiquidity would apply in the valuation of the business or to the securities that have rights consistent with the investors who in aggregate have control of the business. For subsequent measurement dates, the valuation specialist would consider the updated expected cash flows and the updated market participants' return assumptions given current market conditions. A similar thought process would be used under the market approach. See chapter 7 for a more in-depth discussion of control and marketability, and paragraphs 3.55–.91 for further discussion of the income approach and paragraphs 3.09–.54 for further discussion of the market approach.
- 3.127** If the transaction price reflects a premium to the guideline public companies, one common historical practice has been to call this premium a "*control premium*" or "*market participant acquisition premium*" without further analysis.³⁰ However, these terms may imply that the premium results solely from the existence of control, rather than focusing on the changes that market participants would expect in the business given the change in control. In updating the valuation inputs for subsequent measurement dates, it is necessary to understand the underlying rationale for the premium paid — that is, to describe the differences between the subject company and the guideline public companies that support this higher valuation as of the transaction date, so that it is possible to assess to what extent these differences still apply as of subsequent measurement dates. For example, it may be that a transaction price that reflects a premium to the guideline public companies when measured relative to LTM EBITDA might actually reflect a discount relative to pro forma LTM EBITDA or to projected EBITDA, after considering the operational improvements that the company intends to implement post-close. In this example, after these improvements are made and reflected in the actual performance of the subject company, this premium may no longer apply. See chapter 7 for additional discussion.
- 3.128** Similarly, if the transaction price reflects a discount to the guideline public companies, one explanation might be to call this discount a *marketability discount* or *illiquidity discount* without further analysis. However, as with the term *control premium*, these

³⁰ The Appraisal Foundation's Valuations in Financial Reporting (VFR) Valuation Advisory #3, *The Measurement and Application of Market Participant Acquisition Premiums*, sets forth best practices for certain issues encountered in measuring the fair value of controlling interests in business enterprises for financial reporting purposes. Refer to the [Appraisal Foundation's website](#) for further information.

terms may imply that the discount results solely from the illiquidity of the position, rather than focusing on the reasons that market participants would demand a higher rate of return than the valuation model might otherwise indicate. In updating the valuation inputs for subsequent measurement dates, it is necessary to understand the underlying rationale for the low price paid, that is, to describe the differences between the subject company and the guideline public companies that led to this lower valuation as of the transaction date, so that it is possible to assess to what extent these differences still apply as of subsequent measurement dates. For example, it may be that a transaction price that reflects a discount to the guideline public companies when measured relative to LTM EBITDA might reflect a need to invest more capital in the business or to strengthen the management team to reach a normalized level of performance. In this example, after these improvements are made and reflected in the subject company's expected performance, such a discount may no longer apply. See chapter 7 for additional discussion.

Chapter 4

Value of Debt for the Purpose of Valuing Equity

- 4.01** This chapter provides guidance regarding the valuation of debt instruments or *debt-like preferred stock* in situations when debt or a debt-like investment is held by a third party and its value is considered as an input in valuing the equity of the business and of the equity securities underlying the stock-based compensation awards.¹
- 4.02** Equity value is often estimated as the difference between the value of the enterprise and the value of debt for the purpose of valuing equity.² The value of debt used as an input in valuing the equity securities in an enterprise reflects the costs associated with the repayment of the debt over time and the corresponding value of the liability that market participants transacting in the equity securities would subtract from the total *enterprise value* to establish a price for the equity securities in an *orderly transaction* at the measurement date. This value would consider the contractual terms of the debt instrument (for example, coupon rate, contractual maturity, amortization and other prepayment features, change of control provisions, and *conversion rights*, if any), the historical and projected financial performance of the company, the information that market participants transacting in the equity would have regarding the plans of the company (for example, expected time horizon through the liquidity event), and the

¹ From an economic perspective, the discussion in this chapter is equally applicable to debt and *debt-like preferred stock*, regardless of whether it is accounted for as debt or equity. Debt-like preferred stock is junior to debt but almost always senior to other equity interests, and it plays the same role in the capital structure as *mezzanine debt*. It typically pays a cumulative dividend through a *liquidity event*, and it may be mandatorily redeemable on a specified date. It does not have *conversion rights* or *participation rights* that would allow it to participate in any increase in the *fair value* of the company beyond the accrual of dividends, if any; however, in many cases, the same investors who hold the debt-like preferred stock hold proportionate amounts of common stock. Because debt-like preferred stock does not have conversion rights or the *right to participate in future rounds*, it may be treated as debt, and its fair value may be subtracted from the *enterprise value*, along with other debt, before allocating the remaining equity value to the other equity interests in the capital structure. Note that this chapter does not discuss the accounting for debt or debt-like preferred stock, but rather focuses on the impact of debt on the valuation of the equity securities in the business. This chapter also does not discuss the methodologies used for valuation of convertible notes or convertible preferred stock, which are hybrid instruments that have characteristics of both debt and equity. For a discussion of the valuation of convertible preferred stock, see chapter 6, "Valuation of Equity Securities in Complex Capital Structures."

² It is also possible to value equity investments by directly considering the cash flows to equity, as discussed in paragraph 4.42 and paragraphs 3.88–91. This approach directly considers the cash flows to the market participants transacting in the equity and the required rate of return for these market participants. However, since it is more difficult to assess the required rate of return for a leveraged investment, and most valuation techniques rely on market data to estimate certain assumptions and guideline companies are likely to have different leverage structures, it may be easier to assess inputs to value equity as the *enterprise value* less the value of debt for the purpose of valuing equity. See chapter 5, "Valuation of Equity Securities in Simple Capital Structures," for a discussion of approaches for valuing the enterprise for the purpose of valuing the equity securities in the enterprise.

expected cash flows and market yield considering the risk of the instrument and current market conditions. See paragraphs 4.22–.33 for further discussion.

4.03 Several measures of the value of debt instruments are often used as proxies for the fair value of debt or the value of debt for the purpose of valuing equity in some circumstances:

- *Par value.* The notional value of the debt
- *Face value.* The par value of the debt plus any accrued (*paid-in-kind [PIK]*) interest
- *Book value.* The value of the debt used for financial reporting purposes, typically measured as par adjusted for any original issue discount (OID) or premium received at issuance,³ inclusive of debt issuance costs, if any, accreting toward par over the maturity as defined by the financial reporting guidance
- *Payoff amount.* The value of the debt that would be owed upon repayment at the measurement date, which may include a *prepayment penalty* and, thus, be higher than face value
- *Traded prices, matrix prices, or indicative broker quotes.* The price for the debt reported from trades or various pricing services or provided by one or more brokers, which may or may not reflect the fair value as of the measurement date and may or may not reflect a binding offer to transact.

These measures may not necessarily reflect the fair value of debt or the value of debt for the purpose of valuing equity. In particular, the fair value of debt would not assume an immediate payoff, but instead would reflect the amount that a debt investor would pay considering the expected cash flows through repayment. Similarly, the value of debt for the purpose of valuing equity must capture the extent to which market participants transacting in the equity would benefit from a below market coupon (or bear the expense of an above market coupon) over the expected time horizon through repayment.

4.04 The value of debt for the purpose of valuing equity is a function of the expected cash flows to the debt holder and a market yield, similar to the fair value of debt. The present value of expected cash flows, discounted at a market yield, represents the value of debt that market participants would subtract from the enterprise value when valuing equity, including any benefit (or cost) from paying a below (or above) market coupon. When estimating the expected cash flows to the debt holder for measuring the value of debt for the purpose of valuing equity, the key assumptions about the business (for example,

³ Debt may be issued at a discount to par, either because the issuer received proceeds of less than 100% of par (cash OID, such as zero-coupon debt) or because the debt is issued together with warrants or other instruments, and the proceeds must be allocated between the debt and these other instruments. It is less common for debt to be issued at a premium to par, but this could occur if the cash coupon rate is above market at the time of issuance.

overall enterprise value, expected cash flows to the business, time to liquidity) should be consistent with those used to estimate equity value.

Expected Time Horizon through Repayment

- 4.05** When market participants invest in the equity of a private company, they consider the *expected cash flows* for the securities under current ownership through a *liquidity event*, and the *required rate of return*, consistent with the economic best interest of the investors who in aggregate have control of the business. Accordingly, although FASB ASC 820 contemplates a transaction at the measurement date (as discussed in FASB ASC 820-10-35-6C), in determining the assumptions that market participants would use to value securities in an enterprise on the measurement date, that “transaction” is not a transaction selling the whole business, but rather a sale of a share of the securities underlying the stock-based compensation. In valuing the securities in the enterprise, it would be appropriate to consider the expected time horizon through the liquidity event, the expected type(s) of liquidity event, and market participants’ required rate of return under current market conditions.
- 4.06** When entering an investment, private equity and venture capital investors typically expect to hold a position in a given company for several years. Therefore, these investors are often willing to negotiate provisions that further restrict liquidity in exchange for other benefits. For example, when raising debt to fund an acquisition, private equity investors may accept a requirement to repay the debt at a premium if a change of control is completed within the first few years, allowing the debt holders to be compensated for the early repayment in light of the equity holders’ decision to exit the position earlier than anticipated. In such cases, the transaction price for the debt is typically still at or near par at issuance, implying that debt investors expect a low probability of a near-term change of control.⁴

Fair Value of Debt and Value of Debt for the Purpose of Valuing Equity versus Book or Face Value

- 4.07** The fair value of debt is the price at which the debt would transact in an orderly transaction between debt investors. The value of debt for the purpose of valuing equity is the value that market participants transacting in the equity would consider when valuing equity, including any benefit (or cost) from paying a below (or above) market coupon. Both of these values are typically measured considering the expected cash flows to the

⁴ The fair value of the debt typically can be measured at inception based on the transaction price. In debt transactions, the investors typically fund par or possibly par less an original issue discount (OID), in exchange for the contractual rights associated with the debt, including the rights to payment of principal and interest as well as any premium due upon a change of control. These transactions make it clear that debt investors do not expect an immediate change of control because if they did, the debt would reflect this premium. Similarly, at subsequent measurement dates, it is often possible to observe traded debt prices that reflect the same dynamic. When an acquisition is imminent, the debt typically trades up toward the payoff level.

debt holder and a market yield that reflects the risk of those cash flows. These values may not be the same as the book or face value of the debt.

- 4.08** A fair value of debt or value of debt for the purpose of valuing equity that is lower than face value reflects the benefit to equity holders from having locked in a below-market interest rate. This situation can arise either due to overall market conditions or company-specific credit issues. For example, if Company A issued debt on June 30, 2X08, at the Secured Overnight Financing Rate (SOFR) + 300 basis points (bps) with a 5-year maturity but as of June 30, 2X11, would have to pay SOFR + 700 bps to refinance the debt for the remaining 2 years to maturity, the equity holders capture additional value for the remaining 2 years.
- 4.09** A fair value of debt or value of debt for the purpose of valuing equity that is higher than face value reflects the cost to equity holders from the company being required to pay an above-market interest rate. For example, if Company B issued debt upon reemergence from bankruptcy in 2X08 at SOFR + 700 bps with a 5-year maturity but in 2X11 had improved performance sufficiently to be able to refinance the debt at SOFR + 300 bps for the remaining 2 years to maturity, the equity holders may have a disadvantage for the remaining 2 years. The disadvantage applies only if the company is locked into the above-market rate (that is, if the debt is not prepayable or has significant prepayment penalties). If the debt is prepayable, the fair value and the value of debt for the purpose of valuing equity should not be significantly higher than the payoff amount because if the coupon on the debt is at an above-market rate, the company could theoretically refinance at the lower market rate (assuming that the controlling investors will act optimally⁵).
- 4.10** Because debt may include change of control provisions, the benefit (or penalty) to the equity holders associated with the below- (or above-) market yield will typically persist only through the anticipated *liquidity event*. In fact, the maturity of the debt and the duration of any penalties associated with an early change of control are factors that should be considered in establishing the likely timing of a liquidity event. The value of debt for the purpose of valuing equity should be estimated considering the expected cash flows, including the coupons and principal payments, taking into account any change of control provisions that would apply at the expected liquidity event, and the timing of repayment that market participants transacting in the equity would expect.⁶ If the nature

⁵ When estimating the market rate for the debt, if the debt is prepayable and the analysis indicates that the market rate is lower than the coupon, it is important to consider why the company has not chosen to prepay the debt. That is, if the company is not prepaying when the model indicates that it would be optimal to do so, it would be appropriate to reassess whether the analysis has properly captured all the relevant factors, or whether the company could not actually refinance at the lower indicated rate.

⁶ The enterprise value used in the valuation of the securities in the enterprise may be measured from the enterprise perspective (assuming a sale of the enterprise on the measurement date) or from the securities perspective (assuming a sale of the securities on the measurement date without a change of control for the enterprise). As discussed in chapter 5 for private companies where the business is being run optimally, the enterprise value measured from each perspective may be the same. Conceptually, however, when valuing debt for the purpose of valuing equity, it is most appropriate to consider the enterprise value from the securities perspective, assuming a time to liquidity event consistent with the company's plans under current ownership.

and timing of the liquidity event is uncertain, it may be appropriate to consider multiple scenarios and estimate the value of debt for the purpose of valuing equity as the probability-weighted average across these scenarios.

Valuation Techniques for Estimating the Fair Value of Debt and Value of Debt for the Purpose of Valuing Equity

- 4.11** The company may have several classes of debt outstanding, including first lien and second lien loans, other senior *secured debt*, senior *unsecured debt*, *subordinated debt*, convertible notes, or other debt and debt-like instruments. If the company has traded debt, the traded price as of the measurement date may provide the best estimate of fair value, assuming the transaction is determined to be orderly, and may also be used to estimate the market yield for the debt which may then be used in estimating the value of the company's other debt instruments. It should be noted, however, that the market participants transacting in the equity are different than the debt investors transacting in the debt; therefore, the value of debt for the purpose of valuing equity may differ from the traded price for the debt.⁷ Please see paragraphs 4.34–.48 for an example.
- 4.12** When a traded price for the debt as of the measurement date is not available or is deemed not to be determinative of fair value, the typical valuation technique to estimate the fair value of the debt or the value of debt for the purpose of valuing equity is to use a discounted cash flow analysis, estimating the expected cash flows for the debt instrument (including any expected prepayments [for example, if prepayment is required upon a liquidity event]) and then discounting them at the market yield.⁸ This valuation technique is referred to as the *yield method*.
- 4.13** The market yield for the debt as of the valuation date can be measured relative to the market yield at the issuance date by observing the following:
- The change in credit quality for the enterprise.⁹
 - The change in credit spreads for comparable debt instruments, considering the characteristics of the debt instrument compared to the comparable traded debt, including the seniority, strength of the covenants, company performance, quality of the assets securing the debt, remaining time to maturity, early redemption features or

⁷ For the purpose of valuing the minority interests in the equity securities within an enterprise, the unit of account is a single share. Therefore, the analysis should consider the market participants who might invest in a share in the enterprise, not the market participants who might invest in the debt instruments or the enterprise as a whole.

⁸ The market yield at the issuance date may be inferred by calibration as long as the transaction price reflected fair value at initial recognition. If the transaction price was not fair value at initial recognition, then a best practice is to assess the market yield at issuance considering the negotiation dynamics and the resulting off-market terms, and then assess the change in yields to the measurement date in the same manner as discussed in paragraphs 4.12–.21.

⁹ If the company has other debt instruments that are traded, the change in the yields for the traded debt instruments of the company may be considered good indications of the change in yields for the other debt issued by the company, after adjusting for differences in seniority and other characteristics of the debt in question.

optionality, and any other differences that a market participant would consider in determining the value of the debt instrument.

- For fixed-rate debt, the change in the reference rate matching the remaining maturity of the debt (that is, the change in the SOFR *swap rate* or treasury rate).

4.14 For example, to estimate the fair value of the debt or value of debt for the purpose of valuing equity described previously for Company A as of June 30, 2X11, the first step is to look at the credit quality of the company and this debt issuance. Although the company is not rated, when the debt was issued on June 30, 2X08, the spread of 300 bps corresponded to roughly a B+ rating. In the 3 years since issuance, the company made significant progress on its business plan and grew EBITDA significantly. Based on a *synthetic credit rating* analysis, as described in paragraphs 4.16–.19, the estimated rating for the debt had improved from B+ as of the issuance date to BB+ based on the company’s most recent financial statements as of June 30, 2X11. However, during that same 3 years, the market *risk premium* for a given credit quality increased significantly. In particular, the credit spreads for debt rated B+ increased from roughly 300 bps to 900 bps, an increase of 600 bps. For Company A’s debt, this increase was offset to some extent by the improvement in credit quality. Spreads for debt rated BB+ as of June 30, 2X11, were, on average, 200 bps lower than spreads for debt rated B+. Therefore, the estimated market yield as of June 30, 2X11, is SOFR + 700 bps, as shown in the following table. Because the market yield is higher than the coupon, the fair value of debt and the value of debt for the purpose of valuing equity is lower than the face value.

	Measurement Date June 30, 2X11
Credit spread at issuance	300 bps
Credit rating at issuance	B+
Credit rating at measurement date	BB+
Change in B+ credit spread	+600 bps
Difference in BB+ vs. B+ credit spreads	–200 bps
Credit spread at measurement date	300 bps + 600 bps – 200 bps = 700 bps

4.15 There are several methods for assessing the credit quality of a company. Because many private companies may not be directly comparable to companies with public debt, it is important to use *calibration* to estimate the initial credit quality and corresponding credit spread. The change in credit quality would then be assessed by considering the company’s performance relative to peer companies with similar credit quality.

- If there have been no significant changes in the company’s performance, a qualitative analysis would likely indicate that the credit quality is unchanged, and the difference in the *required rate of return* would be captured in the change in credit spreads for that credit quality.
- If there have been significant changes in the company’s performance but the company’s performance has changed in the same way as the peer companies and the

peer companies have not been downgraded,¹⁰ the credit quality is likely to be unchanged, and the difference in the required rate of return would be captured in the change in credit spreads for that credit quality.

- If the company's performance has deteriorated or improved relative to the peer companies, then it may also be appropriate to consider a change in credit quality and assess the change in spreads given the change in credit quality.

4.16 To assess the change in credit quality for the subject company relative to the peer companies, it is necessary to consider the metrics that debt investors would consider and the change in the company's performance on these metrics relative to the peers.¹¹ The analysis may consider either a selected set of peer companies, or a broader market analysis, such as a synthetic credit rating analysis. A *synthetic credit rating* is a quantitative analysis that compares selected financial ratios for the subject company to public companies with rated debt, using these metrics to estimate the rating for the subject company. An assessment of credit quality typically considers the same types of metrics as those used by the major credit rating agencies, such as the following:

- *Natural logarithm* (total assets) [company size]
- Debt/total assets [leverage]
- *EBIT/net debt*¹² [solvency]

¹⁰ In some cases, when there is an overall downturn in an industry, the credit ratings may be unchanged, but market participants may demand a higher rate of return for a given credit quality. In other cases, the downturn may also be reflected in lower credit ratings. When assessing the credit spread for a given debt instrument, it is important to consider the initial calibrated credit spread, the change in the company's credit quality (if applicable), and the change in the credit spreads for the applicable credit rating at issuance and at the measurement date. See paragraph 4.14 for an example.

¹¹ Note that in many cases, the debt ratings for specific companies are stale and, thus, the observable ratings, metrics, and credit spreads for the peer companies may reflect a rating that is one year or older, which may lead to inaccurate inferences in times when a company's business changes. In addition, smaller bond issuers may not have ratings, which may make it difficult to find good peer companies. If the initial credit spread for the subject company debt is calibrated, and updates consider the change in credit quality metrics and corresponding observed credit spreads consistently, using either specific peer companies or a synthetic credit rating analysis would provide a good indication of the change in the required rate of return for the subject company debt. If warranted, a more robust analysis could drill down into the specific facts and circumstances for a selected set of peer companies as well as for the subject company.

¹² Solvency may also be measured as the debt service coverage ratio (DSCR), or *net debt/EBITDA*, or *EBITDA/Interest expense*, or other similar indicators. For a synthetic credit rating analysis, it is important to use a form of the metric that is analytically appropriate.

- Return on assets [operating performance]
- EBIT/revenues [operating margin]
- EBIT/average capital [return on capital]

- 4.17** Most synthetic credit rating algorithms use a variety of metrics (for example, five to seven selected metrics that have been shown to be predictive of ratings, while avoiding overlap) and compare these metrics across a pool of all relevant public companies with rated debt (for example, public companies in the United States and Canada or other relevant markets with rated debt, excluding industries that have significantly different characteristics such as financial services and utilities, and in some cases, oil and gas) using some form of regression analysis. To estimate the range of spreads for a given credit rating, the same population of public companies would be considered using the *option-adjusted spreads (OAS)* reported for each outstanding bond for these companies and filtering to find bonds with similar maturities.
- 4.18** A synthetic credit rating analysis provides a mathematical estimate for the corporate family rating (CFR) that does not take into consideration any qualitative factors that may affect the credit rating of the company. After calculating this rating, the valuation specialist would then apply judgment to adjust, considering the factors that the synthetic credit rating analysis may not capture. In particular, companies that seek capital from private capital markets may have qualitative factors that prevent them from obtaining debt from more conventional sources and, therefore, the calibrated spreads for debt investments often fall at the higher end of the indicated synthetic credit rating or may better be considered to fall within the range for a lower credit rating. Therefore, it is important to calibrate the *valuation model* to the issuance price to infer a credit spread and corresponding rating, and then consider the changes in the company's credit quality, if any, as indicated by the synthetic credit rating model.
- 4.19** In addition, a synthetic credit rating is designed to estimate the CFR for the company, which typically also reflects the rating that would be expected for a senior unsecured bond issued by the company. Secured bonds typically are rated one notch better than the CFR (for example, BB+ instead of BB), whereas subordinated bonds may be two to three notches below the CFR. However, these are not prescriptive thresholds and, as with any valuation, the assumptions should be properly supported. Other methods for adjusting for seniority consider the relative expected recovery rates upon default, especially when the company has a recent debt issuance for another debt instrument or has traded debt that can be used to infer the spreads for the debt issued by the company. It is important to consider the seniority of the debt instrument when estimating the credit risk.
- 4.20** In some cases, the issuance of debt or debt-like preferred stock may not initially be considered to be an arm's-length transaction. For example, new debt may be issued to existing debt investors as part of a recapitalization following a bankruptcy or in a

negotiation to avoid a default, and debt-like preferred stock may be issued to investors who also received common stock proportionately. In these cases, the market yield for the debt or debt-like preferred stock as of the valuation date can be measured by considering the following:

- Credit quality for the company
- Credit spreads for comparable debt instruments, considering the characteristics of the debt compared to the comparable traded debt, including the seniority, strength of the covenants, company performance, quality of the assets securing the debt, maturity, and so on
- Base rate corresponding to the expected maturity of the debt (for example, the treasury rate)

4.21 If the debt has prepayment features (such as call or put rights), it may be necessary to consider the optimal timing of repayment for the issuer (call features) and the holder (put features), given the future evolution in market yields. For example, if the debt is prepayable with decreasing levels of prepayment penalties as time progresses, it may be optimal for the issuer to prepay at a later date, rather than prepaying immediately. Debt instruments with such features may be valued using a one-factor stochastic model considering the volatility in market yields, such as a Black-Derman-Toy (BDT) model. Alternatively, in many circumstances a reasonable approximation would be to embed the cost of the prepayment feature in the calibrated market yield, and then assess the optimal prepayment strategy at later measurement dates using a scenario analysis considering the remaining term to each prepayment level. For example, if the debt was prepayable at 102% of par at the measurement date, 101% in 9 months, and 100% thereafter, the analysis would consider three scenarios, and the fair value and the value of debt for the purpose of valuing equity would be measured as the lowest value among the three scenarios because the company would have the right to choose the timing of repayment and market participants transacting in the equity would be assumed to act in their own economic best interest.

Value of Debt for the Purpose of Valuing Equity

4.22 Although the valuation techniques for measuring the fair value of debt and the value of debt for the purpose of valuing equity are similar, the concepts are distinct. Specifically, the fair value of debt reflects the price at which the debt would transact between debt investors transacting in the debt, and the value of debt for the purpose of valuing equity reflects the value of the liability that market participants would consider when transacting in the equity securities of the business. The following section discusses approaches for valuing debt for the purpose of valuing the equity securities in the enterprise, given a reasonable estimate of the enterprise value.

4.23 The value of debt for the purpose of valuing equity reflects the cost that market participants transacting in the equity would assign to this liability given the expected interest and principal payments over the expected time horizon for the debt. Note that

market participants transacting in the equity may make different assumptions than debt investors transacting in the debt because these transactions would take place in different markets. Market participants transacting in the equity would consider the impact of the debt on the investment knowing that the company ultimately would be responsible for redeeming all the debt, not just a piece. Therefore, the value of debt used in estimating the fair value of equity may be different than the fair value of debt considered independently.

- 4.24** In many cases, valuation specialists valuing equity interests may use the par value, face value, book value, or payoff amount as a proxy for measuring the value of debt for the purpose of valuing equity. These proxies provide a lower and upper bound on the value of equity. Specifically, the *equity value* measured based on the enterprise value less the payoff amount may be regarded as a lower bound on the value of equity because the equity holders could redeem the debt for this price. The equity value measured based on the enterprise value less the fair value of debt may be regarded as an upper bound on the value of equity because the equity holders would recognize that the company ultimately would be responsible for redeeming all the company's debt. If the company were to redeem the debt before maturity or the equity holders were to buy the debt back in a negotiated transaction, they would typically have to pay a higher price than the fair value for the debt instrument on a stand-alone basis. Judgment is required to estimate the value of debt for the purpose of valuing equity within this range, considering the facts and circumstances.¹³
- 4.25** Market participants transacting in the equity might consider a value of equity closer to the upper bound if the debt has a below-market coupon and the time horizon for the investment is relatively long, so that they would expect to be able to realize value from the below-market coupon over a period of time. Market participants transacting in the equity might consider a value of equity closer to the lower bound if they expect that the business would be sold in a short period of time, and the debt has a change of control provision that would prevent them from realizing value from any below-market coupon. If the payoff amount, the face value and the fair value of debt are close, the market participant assumption regarding the value of debt for the purpose of valuing equity is that they typically would transact based on an equity value measured as the enterprise value less the face value of debt.¹⁴

¹³ In practice, if a company is close to bankruptcy or in covenant default, the equity holders may have little ability to negotiate with the debt holders, and the time horizon over which the equity holders may benefit from the below-market terms for the debt would be limited. When the company has a longer liquidity runway or the investors have better negotiating leverage, the equity holders would have more ability to repurchase debt below the payoff value, negotiate a favorable exit, or realize value from the below-market debt coupon over the time horizon for the investment.

¹⁴ The fair value of debt will typically not be higher than the payoff amount because debt investors would assume that the company would pay off the debt, rather than paying an above-market coupon for an extended period of time. If the fair value of debt is above the face value, it would be more appropriate to subtract the fair value or payoff amount from the enterprise value to estimate equity, rather than assuming that face value is a reasonable proxy.

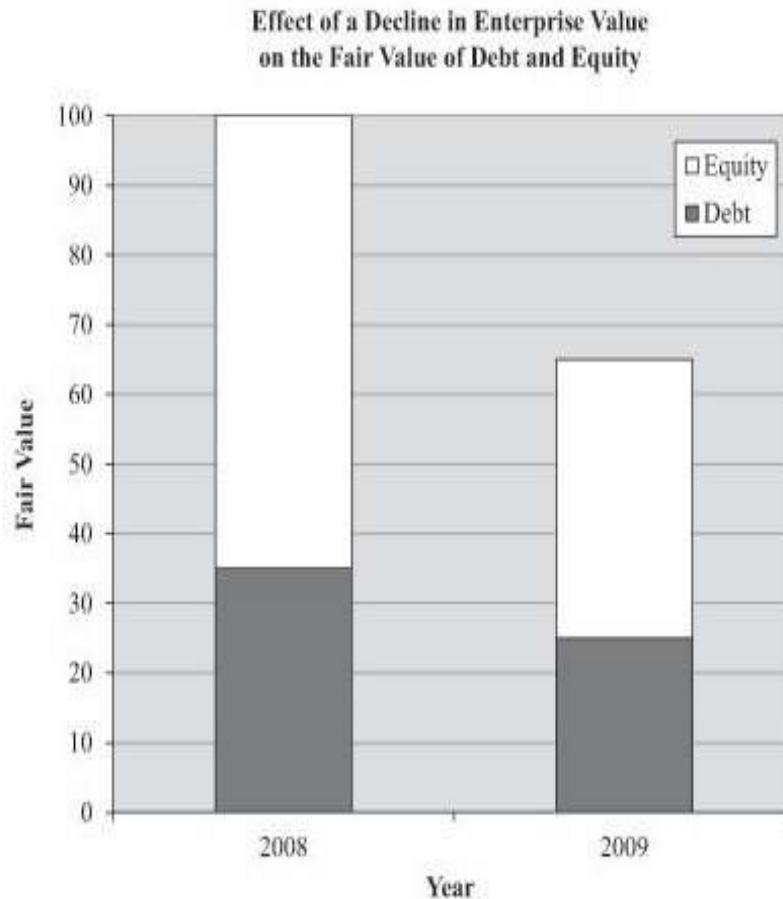
- 4.26** The value of debt for the purpose of valuing equity will typically be estimated using the same valuation methodologies used for estimating the fair value of debt. The value of debt for the purpose of valuing equity will consider the expected cash flows, including the coupons and principal payments, taking into account any change of control provisions that would apply at the expected liquidity event for the company and the timing of repayment that market participants transacting in the equity would expect. In fact, the maturity of the debt and the duration of any penalties associated with an early change of control are factors that should be considered in establishing the likely timing of a liquidity event.
- 4.27** If the company's debt is traded, the traded price as of the measurement date may be the best starting point for estimating the value of debt for the purpose of valuing equity, assuming the transaction is determined to be orderly. However, as discussed in paragraph 4.23, the market participants transacting in the equity are different than the debt investors transacting in the debt; therefore, the value of debt for the purpose of valuing equity may differ from the traded price for the debt. The valuation model used for estimating the value of debt for the purpose of valuing equity would be calibrated to the traded price for the debt consistent with the assumptions that debt investors transacting in the debt would make and then adjusted to capture any differences in assumptions that market participants transacting in the equity would make (for example, including such differences as assumptions about the expected timing of repayment, if equity holders have information regarding a pending sale of the business that the debt holders do not know about).
- 4.28** Another valuation technique for estimating the value of debt for the purpose of valuing equity is to include the future payoff for the debt within the model used for allocating the enterprise value among the various claims on the company. The allocation model would then calculate the expected value of debt that would subtract from the total enterprise value, resulting in the residual value of equity:
- For PIK debt without covenants, the future payoff for the debt equals its principal plus accrued interest through maturity, and the value of the debt for the purpose of valuing equity can be measured via an allocation methodology that includes the debt.
 - For debt that pays cash interest or is amortizing, the value of the debt will be higher than the value of an equivalent non-amortizing debt in which the interest accrues through maturity.¹⁵ Because allocation models typically model the payoff amounts for the various instruments, rather than modeling the interim cash flows, they typically cannot capture the value of the requirement to make current payments on the debt. In this situation, it is possible to model the present value of the interim cash flows separately and include only the final debt payoff in the allocation model.

¹⁵ *Paid-in-kind (PIK)* debt is riskier than debt that pays cash interest because the performance of the company can decline significantly without triggering a default (unless the debt has tight covenants). If the company is obligated to make cash interest, principal payments, or both, the company will default whenever the cash flows are not sufficient to cover these payments. When company performance is declining, triggering a default earlier may improve the recovery rate for the debt and effectively decreases its risk.

- 4.29** If the future payoff for the debt is included in the allocation model used for allocating value to the equity interests for the business as described in paragraph 4.28, the allocation may not fully capture the risks that market participants would consider when valuing the debt. Therefore, it may be necessary to estimate its value for the purpose of valuing equity outside the allocation model (for example, using a yield method, as discussed previously). See Q&A 10.38, "Including Debt in the Option Pricing Method."
- 4.30** In a few situations, it may not be possible to estimate the market yield from public debt data. For example, in some *leveraged buyout* situations, the debt may have much higher leverage than is observable in the public debt markets. In these situations, the debt will behave more like equity, and the value of the debt and equity may be estimated by allocating the total enterprise value as follows:
- For PIK debt, one approach would be to allocate the enterprise value using a payoff amount for the debt equal to its face value, plus accrued interest through the liquidity event, plus any prepayment penalty.
 - For debt with cash interest, one approach would be to subtract the present value of the cash interest from the enterprise value and then allocate the residual value using a payoff amount for the debt equal to its face value plus any prepayment penalty. When estimating the value of debt by allocating the total enterprise value directly, it is a best practice to also calculate the yield implied by the analysis and assess whether it is reasonable, given the leverage and terms of the debt.
- 4.31** One key difference in estimating the value of debt for the purpose of valuing equity when the debt has a change of control provision is that market participants transacting in the equity may not assign full value to the benefit that they may ultimately realize from paying a below-market interest rate because this benefit can be realized only by holding the investment through the maturity of the debt. Assessing this impact requires judgment. This additional illiquidity may be reflected by using a value between the fair value of debt and the payoff amount as the value of debt for valuing equity (estimating a negotiated debt payoff) or by applying an *illiquidity discount* to the value of equity resulting after subtracting the fair value of debt (estimating the fair value of equity adjusted for illiquidity). See paragraphs 4.34–.48 for examples of these approaches. See chapter 7, "Control and Marketability," for further discussion of illiquidity discounts, and appendix A, paragraphs A.12.01–.10, "Models Used in Calculating Discounts for Lack of Marketability," for a discussion of methods for quantifying illiquidity discounts.
- 4.32** When the company is not highly levered and the fair value of debt is close to its book value or payoff amount, many market participants transacting in the equity use the book value of debt or payoff amount as the value of debt for valuing equity. Using the book value reflects the value of debt as originally negotiated, updated for accretion toward maturity. Using the payoff amount reflects the value of debt that would be due upon a repayment at the company's option, if the debt is prepayable, or would be due upon a change of control. These approaches may provide a reasonable approximation for valuing equity when the change in the value of the debt would have only limited impact on the equity value.

- If the credit quality of the company has not changed and credit markets have been reasonably stable, the fair value of debt is likely to be relatively close to its book value. For example, for debt that was funded at par, an increase in market yields of 50 or 100 bps over a five- to seven-year term to maturity would indicate a fair value of debt of approximately 94% to 99% of par. At 30% leverage (debt divided by total invested capital [TIC]), using a value of debt for the purpose of valuing equity of 95% of par would increase the estimated equity value by less than 2% of TIC.
- Alternatively, if the company's credit quality has improved or market yields have declined, it might be optimal for the company to pay off the debt and, thus, it would be reasonable to measure the value of equity using the payoff amount for the debt. If the debt has a prepayment penalty, the payoff amount for the debt would be above par. At 30% leverage (debt to TIC), using a value of debt for the purpose of valuing equity of 102% of par would decrease the estimated equity value by less than 1% of TIC.
- When the credit quality of the company has declined or the market yields have increased significantly, the value of debt for the purpose of valuing equity may be significantly below par, and furthermore, the leverage for the company may be higher as TIC may also have declined. At 50% leverage (debt to TIC), using a value of debt for the purpose of valuing equity of 70% of par would increase the estimated equity value by around 20% of TIC.

4.33 It should be noted that a decline in the fair value of debt or value of debt for the purpose of valuing equity is usually accompanied by a decline in the overall enterprise value as the enterprise performance declines or the enterprise's overall *cost of capital* increases. The overall decline in the fair value of the enterprise will typically be shared between the debt and equity, depending on the strength of the debt covenants. In the following example, the total enterprise value was \$100 million in March 2008, with newly issued covenant-lite debt with a \$35 million principal balance paying 10% interest and an equity value of \$65 million. By March 2009, following the financial crisis in the fourth quarter of 2008, the enterprise value had fallen by 35%, and rates had increased to the point that the fair value of debt had fallen to \$27 million, leaving \$38 million for equity. Thus, in this example, the fair value of debt declined slightly more than 20%, and the fair value of equity declined slightly more than 40%. Due to financial leverage, the percentage decline in equity value is expected to be greater than the percentage decline in debt value.



Example – Alternative Methods for Valuing Equity in a Highly Levered Company

4.34 The following example further illustrates various approaches for estimating the equity value when the value of debt is not equal to its payoff amount.

A) December 31, 20X1

4.35 In December 20X1, an investor purchases 100% of the equity of a company at an *enterprise value* of \$500 million, consisting of \$200 million in equity and \$300 million in third-party debt. The third-party debt has a five-year maturity and includes a change in control provision with repayment at 110% of par if a change of control occurs within the first year, 105% in the second year, 103% in the third year, 101% in the fourth year, and par in the fifth year. The expected time to a liquidity event is five years.

Ramifications of a Change in Control on the Measurement Date

4.36 An actual Day 1 sale of the investment would trigger the change in control provision, which includes a *prepayment penalty* or premium on the debt, thereby reducing the proceeds that the equity holder would realize (that is, resulting in an immediate loss in the value of the investment). In particular, in this example, the payoff value for the debt if the

business were to be sold on Day 1, would be \$330 million, including the 10% prepayment penalty, resulting in a net payoff to equity of \$170 million. This suboptimal result is inconsistent with the initial transaction and the assumptions that the equity investors, acting in their economic best interest, would use in pricing the asset.

Expected Time Horizon through Repayment on the Measurement Date

- 4.37** In measuring the value of the equity interest, it is presumed that equity investors would consider the expected time horizon for the investment, similar to the assumptions made in the original transaction. The Day 1 fair value of the equity interest would be determined under this logic to be \$200 million, including the expected impact of the change in control provisions. Because the equity and debt holders already had full knowledge of the change in control provisions when establishing the transaction price for both the equity and debt, the \$200 million equity value already considers the equity investors' assumptions regarding the expected probability and timing of a change of control, and the required rate of return given these provisions; therefore, no additional adjustment is needed. Typically, equity investors would only agree to the change of control provision for the debt in the context of the overall negotiations, which would also include the coupon rate, allowable leverage, covenants, and other features. As such, the fair value of the equity interest would be measured assuming a transfer to another equity investor who would realize value over the expected time horizon for the investment:

	<i>(\$ millions)</i>
Total enterprise value	\$500
Value of debt for valuing equity	\$300
Fair value of equity	\$200

Calibration

- 4.38** The valuation model used to estimate the enterprise value would then be calibrated to the transaction price. For example, under the income approach, the valuation specialist would estimate the expected cash flows for the business under current ownership through a liquidity event and then calibrate to calculate the required rate of return for the business on the initial investment date. For subsequent measurement dates, the valuation specialist would consider the updated expected cash flows and the change in the investors' required rate of return given current market conditions. A similar thought process would be used under the market approach. See paragraphs 3.111–.116 for an example.

B) December 31, 20X3

- 4.39** Two years later, the company has faced significant challenges. The debt has a payoff value of 103% of par (\$309 million) and a fair value of 80% of par (\$240 million), based on the traded price for the debt considering the cash flows through maturity discounted at the current market yield. The value of the enterprise has decreased to \$350 million, and the expected time to a liquidity event is now three years. The value of equity considering the cash flows to equity, including the benefit of the below-market coupon for the debt and considering the cost of equity based on an equity investor's required rate of return under current market conditions, is \$80 million. This \$80 million value for the equity is more than the amount that could be realized by selling the business and paying off the debt at \$309 million, but less than what could be realized by selling the business as a whole if the new buyer were still able to benefit from the below-market debt, as discussed in paragraphs 4.42–.48.

Ramifications of a Change in Control on the Measurement Date

- 4.40** Under the circumstances, an actual sale of the investment would trigger the change in control provision, which includes a premium on the debt relative to its fair value, thereby reducing the proceeds that would inure to the equity holder (that is, resulting in an immediate loss in the value of the investment compared with its value realized over the expected time horizon for the investment). This suboptimal result is inconsistent with assumptions that equity investors, acting in their economic best interest, would make in pricing the asset at the measurement date.

Expected Time Horizon through Repayment

- 4.41** In measuring the fair value of the equity interest, it is presumed that equity investors who in aggregate have control of the business would consider the expected time horizon for the investment, consistent with their economic best interest. Using this valuation premise, under the income approach, the valuation specialist would consider the expected cash flows for the business under current ownership through a liquidity event, using a consistent framework and calibrating the valuation model to the fair value at initial recognition and to the previous interim measurement dates. On December 31, 20X3, the expected time to a liquidity event is three years.

Valuation — Cash Flows to Equity

- 4.42** Although the typical approach for valuing equity is to first consider the total enterprise value and then subtract an appropriate value of debt, the value of equity can also be modeled more directly by considering the cash flows to equity.¹⁶ For the December 31,

¹⁶ As discussed in footnote 2 in paragraph 4.02, since it is more difficult to assess the required rate of return for a leveraged investment, and most valuation techniques rely on market data to estimate certain assumptions and guideline companies are likely to have different leverage structures, it may be easier to assess inputs to value equity as the enterprise value less the value of debt. The example presents the valuation using the cash flows to equity as a conceptual benchmark to be compared with the other methods shown.

20X3 valuation date, the valuation specialist would consider the updated expected cash flows and the change in equity investors' required rate of return given current market conditions. The resulting fair value of the equity interest under this logic in this example would be \$80 million, consistent with equity investors' assumptions regarding the cash flows from the enterprise over the time horizon for the investment and the required cost of capital given current market conditions.¹⁷ As such, the fair value of the equity interest would be measured assuming a transfer to another equity investor who would realize value over the expected time horizon for the investment:

	<i>(\$ millions)</i>
Fair value of equity (based on cash flows to equity)	\$ 80

Valuation — Net Equity Value (Contractual Debt Payoff)

4.43 At one extreme, the debt holders have a contractual right to repayment at \$309 million; thus, it would be feasible (albeit suboptimal) to sell the company on the measurement date and repay the debt at its contractual payoff, resulting in a fair value of equity of \$41 million. As discussed in paragraph 4.40, this approach would be inconsistent with assumptions that equity investors, acting in their economic best interest, would make in pricing the asset at the measurement date – that is, it is not consistent with the three-year expected time to the liquidity event, and it would not be reasonable to assume that the equity holders would enter into such a transaction when it would result in such a large loss in value. Nevertheless, this estimate could be viewed as a lower bound on the fair value of the equity.

Valuation — Net Equity Value (Fair Value of Debt)

4.44 At the other extreme, even though the assumed transaction when valuing equity is a transfer of the equity interest, rather than a sale of the entire business on the measurement date, in the valuation analysis, it would not be unreasonable to estimate the fair value of the equity interest by first estimating the enterprise value and subtracting the fair value of debt. In this example, the enterprise value on December 31, 20X3 is \$350 million, and the fair value of debt is \$240 million; hence, if it were feasible to sell the company on the measurement date and repay the debt at this lower price, the fair value of equity would be \$110 million. In practice, however, equity investors may not be willing to pay this full

¹⁷ Note that while this approach presumes that market participants will realize value over the expected time horizon for the investment, in certain situations, market participants may choose to realize a lower value with an earlier exit because the perceived downside risk of an extended time horizon is too great. This result indicates that the required rate of return for the investment under current market conditions is higher than anticipated and is consistent with market participants' economic best interest in such a situation. As such, it is important to look at the circumstances within a particular market when assessing the expected time horizon and market participants' required rate of return, given the risks of the investment under current market conditions. Weighting of scenarios might be appropriate in estimating fair value.

value for the equity because the equity position is more illiquid due to the effective restriction resulting from the change of control provision on the debt. Therefore, this estimate could be viewed as an upper bound on the fair value of the equity.

Valuation — Net Equity Value (Negotiated Debt Payoff)

4.45 Another approach for estimating the fair value of equity in this fact pattern would consider that the equity investor could negotiate directly with the debt holders to repay the debt at a price lower than the contractual payoff but higher than the fair value that they would otherwise realize. In this scenario, both parties benefit by completing an earlier exit, giving them an incentive to negotiate. The negotiated payoff would consider the relative strength of the debtors' and creditors' positions, given the terms of the debt agreements, the motivations of each party, and the facts and circumstances for the company in the context of current market conditions. Assuming that the negotiated repayment value would be \$270 million, the resulting equity value is \$80 million.¹⁸ This approach assumes that the total enterprise value and the value of debt that would be realized in a current transaction (via market purchases or negotiations with the debt holders, or both) are estimated directly, and that the equity value is measured as the difference. The resulting equity value will generally be consistent with the equity value estimated directly based on the cash flows to equity as described previously.¹⁹ However, it is often more practical to use the indirect approach for measuring equity value because market data on the overall cost of capital is more easily available than data on the cost of equity for levered investments.²⁰ As such, the fair value of the equity interest would be

¹⁸ In this example, the entire business could be sold for \$350 million, but due to the change of control provision, the equity holders could not immediately realize the full business value less the fair value of the debt. Therefore, the sum of the parts (fair value of equity plus fair value of debt) does not equal the whole (fair value of the business). The lower bound price for the equity could be considered to be \$41 million, based on the value that could be realized if the business were sold without any attempt to minimize the amount payable to the debt holders, giving the debt holders the full \$309 million due upon the change of control. The upper bound price for the equity could be considered to be \$110 million, based on the value of the business less the fair value of the debt, giving the equity holders the full benefit of the below-market interest rate on the debt without any adjustment for the illiquidity of the position. In accordance with FASB ASC 820-10-35-24B, when considering indications of value from multiple valuation techniques, the "fair value measurement is the point within that range that is most representative of fair value in the circumstances." For the purposes of this example, the valuation specialist selected \$80 million, consistent with the fair value of equity based on the cash flows to the equity interests and the estimated required rate of return as discussed in paragraph 4.42. Other estimates within this range also may be reasonable, given the inherent uncertainty of the estimate. See paragraphs 4.22–.33 for further discussion.

¹⁹ Because the fair value of the equity interest was \$80 million based on the calibrated cash flows to equity and market participants' required rate of return, the equity investor would realize more value from selling immediately if the equity investor can negotiate the repurchase of the debt at less than \$270 million. However, it would generally not be appropriate to record a value higher than the indicated value considering the cash flows to equity unless the company is considering a specific transaction and can demonstrate that the debt can be repurchased at a lower value. For example, if the equity investor is able to repurchase the debt at \$265 million instead of \$270 million, the fair value of equity would then be estimated as \$85 million.

²⁰ Another way of looking at this situation is that the \$240 million fair value of debt reflects the differential between the coupon rate and the current market yield. The equity investor can benefit from this full differential only over a time horizon through the maturity of the debt. In these market conditions, a market participant may require a

measured based on the controlling enterprise value less the estimated renegotiated debt payoff:

	<i>(\$ millions)</i>
Total enterprise value	\$350
Value of debt for valuing equity (negotiated)	\$270
Fair value of equity	\$ 80

Valuation — Net Equity Value (Fair Value of Debt), Adjusted for Illiquidity

- 4.46** A final approach for estimating the fair value of equity in this fact pattern would first consider the equity value based on the enterprise value less the fair value of debt, but then apply a *discount for illiquidity* consistent with equity investors’ assumptions regarding the cash flows from the enterprise over the time horizon for the investment and the required cost of capital given current market conditions. Specifically, because equity investors could not realize the full difference between the total enterprise value and the fair value of debt without holding the investment over a longer time horizon, they might demand a higher rate of return, commensurate with the risk and illiquidity of the position.²¹ The fair value of the equity interest would be measured assuming a transfer to another equity investor who would realize value over the expected time horizon for the investment:

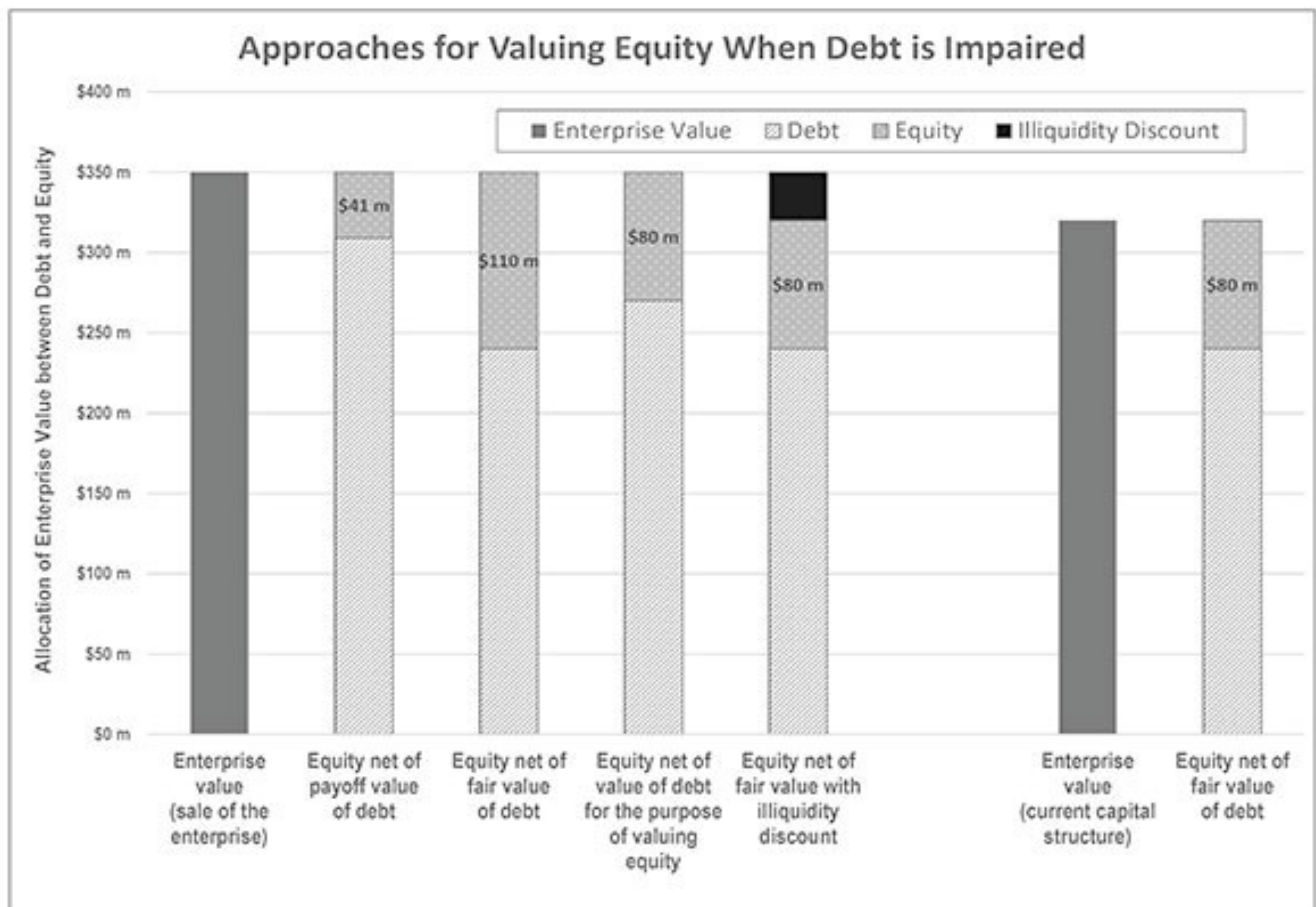
higher rate of return for the asset. Therefore, the company-specific *cost of capital* through the expected *liquidity event* (based on the current market yield for the debt and the equity investors’ required rate of return) is higher than the cost of capital for a new third-party buyer using a new debt structure. The result is that the *enterprise value* used for valuing the equity interest under this valuation premise would be lower than the enterprise value that could be realized by selling the company today; nevertheless, the *equity value* would be the same or higher because the equity holder would benefit from the below-market interest rate on the debt.

²¹ Discounts for illiquidity (also sometimes referred to as *discounts for lack of marketability*) reflect the incremental rate of return that market participants transacting in a specific class of equity may require to compensate for the illiquidity of that class of equity. When possible, the task force recommends measuring the required rate of return for the investors who in aggregate have control of the business directly, via calibration, considering these interests to be equally marketable with the enterprise as a whole. When the equity securities underlying the stock-based compensation are less marketable than the enterprise as a whole, a *discount for lack of marketability* may be measured using various models considering the volatility (risk) and length of the expected restriction period. See chapter 7, “Control and Marketability,” for further discussion of illiquidity discounts, and appendix A, paragraphs A.12.01–.10, “Models Used in Calculating Discounts for Lack of Marketability,” for a discussion of methods for quantifying illiquidity discounts.

	<i>(\$ millions)</i>
Total enterprise value	\$350
Fair value of debt	\$240
Value of equity (unadjusted basis)	\$110
Discount for illiquidity	(\$ 30)
Fair value of equity	\$ 80

Summary of Approaches

- 4.47** The following chart illustrates the lower and upper bound values discussed in paragraphs 4.43–.44 as well as the approaches for estimating the fair value of the equity discussed in paragraphs 4.42 and 4.45–.46. Judgment is required to estimate the value of debt for the purpose of valuing equity within this range, considering the negotiating leverage between the equity and debt holders as discussed in paragraph 4.24.



- 4.48** All the approaches outlined in paragraphs 4.42 (cash flows to equity), 4.45 (enterprise value less negotiated debt payoff), and 4.46 (enterprise value less fair value of debt, adjusted for illiquidity) are different ways of measuring the fair value of equity considering equity investors' required rate of return over the expected time horizon of the investment. As illustrated, these different conceptual approaches will result in similar estimates.

Chapter 5

Valuation of Equity Securities in Simple Capital Structures

- 5.01** This chapter provides guidance regarding the valuation of equity securities for an enterprise with a capital structure involving a single primary class of equity (for example, common stock of a corporation or Class A units of a limited liability company [LLC]). The capital structure may also include debt or *debt-like preferred stock* as well as options and warrants or profits interests in an LLC. For a discussion of the valuation of equity securities in an enterprise having multiple classes of stock (for example, convertible or participating preferred and common stock), see chapter 6, "Valuation of Equity Securities in Complex Capital Structures."
- 5.02** In a *simple capital structure*, the value of the single primary class of equity securities in the enterprise typically is calculated based on the total *enterprise value* less the value of debt for valuing equity,^{1 2} measured considering the cash flows from the enterprise under current ownership and the *required rate of return* for the investors who in aggregate have control of the business.³ The key assumption underlying this method is that the price that the investors who in aggregate have control of the business are willing to pay for an enterprise reflects their risk-adjusted expected returns from that investment.⁴ To the extent that market participants investing in minority interests in the business will share in the same returns, the *fair value* of any interests would need to reflect those returns; therefore, the enterprise value used to value the equity interests in the enterprise would need to be consistent with the expected returns of the investors who in aggregate have control of the business. Subsequently, adjustments to the per share value of the securities (such as a *discount for lack of marketability*, if applicable) should be made for differences in the return that a market participant purchasing the minority securities would require, if appropriate, given any differences in the contractual rights for the securities, the

¹ The value of debt for the purpose of valuing equity reflects the cost that *market participants* transacting in the equity would assign to this liability given the expected interest and principal payments over the expected time horizon for the debt. Note that market participants transacting in the equity may make different assumptions than market participants transacting in the debt, as these market participants would typically have access to different information; therefore, the value of debt used in estimating the *fair value* of equity interests within an enterprise may be different than the fair value of debt considered independently. See chapter 4, "Value of Debt for the Purpose of Valuing Equity."

² Note that it is also possible to value equity securities considering cash flows to equity, price-to-earnings multiples, or other direct methods. Most market participants use methods that involve first estimating the enterprise value and then estimating the value of equity by subtracting the value of debt for the purpose of valuing equity. Therefore, this chapter focuses on the latter approach.

³ See chapter 7, "Control and Marketability," for further discussion.

⁴ Most privately held companies have investors who in aggregate have control of the enterprise. When valuing the enterprise for the purpose of valuing equity securities within a privately held enterprise, it is appropriate to consider these investors' *required rate of return*.

alignment of the investors' interests, and the primary exit market. See paragraph 5.08, paragraphs 2.12–.14, "Considering Whether Investors' Interests Are Aligned," and chapter 7, "Control and Marketability."

- 5.03** The valuation of an enterprise used when valuing equity securities in the enterprise is not necessarily the same as the fair value of the enterprise used when valuing the enterprise as a whole. In particular, the assumed transaction considered in estimating the fair value of equity securities is a sale of those equity securities (subsequently referred to as *the securities perspective*), whereas the assumed transaction considered in estimating the fair value of the enterprise is a sale of the enterprise (subsequently referred to as *the enterprise perspective*). Although the enterprise values considered from these two different perspectives will typically be similar or identical, they are conceptually different and can differ significantly in some circumstances. The discussion that follows compares the enterprise perspective to the securities perspective.
- 5.04** The potential key difference between the enterprise perspective and the securities perspective is that in most cases, a market participant acquiring the equity securities would not have the unilateral ability to change the enterprise's strategy and policies. In addition, there may be other differences in how value is realized when selling the enterprise relative to the way value is realized in the sale of the securities. The assumptions used in valuing the equity securities in the enterprise generally should be consistent with the enterprise's plans under current ownership and the required rate of return for the investors who in aggregate have control of the business. If the investors who in aggregate have control of the business can be assumed to be acting in their economic best interest,⁵ the enterprise value input considered from the securities perspective will typically be consistent with the enterprise value measured from the enterprise perspective. In other situations, the enterprise values from the enterprise perspective and the securities perspective could differ for reasons illustrated in table 5-1 that follows. See paragraph 5.06 and chapter 7 for additional discussion.
- 5.05** Table 5-1 briefly describes some of the key differences between the enterprise perspective and the securities perspective. This table is not all-inclusive, and there are other differences that are not discussed herein.

⁵ Private equity and venture capital investors typically manage their portfolios to maximize their economic returns. Therefore, if the value that they could realize by selling the business on the measurement date would be higher than the value that they expect to realize in the future discounted at their required rate of return, it would be optimal to exit on the measurement date. If the private equity and venture capital investors are not exiting on the measurement date, it is evidence that the market participants consider the value of the business measured from the securities perspective to be consistent with the value of the business measured from the enterprise perspective (the controlling enterprise value).

Table 5-1

<i>Fair Value of the Enterprise from the Enterprise Perspective⁶</i>	<i>Fair Value of the Enterprise from the Securities Perspective</i>
- Assumes sale of the enterprise on the measurement date. - Market participant would be a buyer for the enterprise as a whole; typically, a strategic or financial buyer. - Considers the enterprise value consistent with the following: - Cash flows and capital structure that market participants buying the entire enterprise would expect (including market participant synergies, but excluding buyer-specific synergies), which might assume changes to strategy. - Tax attributes that a market participant buying the entire enterprise would expect. - Cost of capital reflecting a market participant required rate of return	- Assumes sale of the securities in the enterprise on the measurement date.⁷ - Market participant would be a buyer for the equity securities. - Considers the enterprise value consistent with the following: - Cash flows and capital structure that market participants buying an interest in the enterprise would expect considering the current ownership (through the expected liquidity event, if any). - Tax attributes under current ownership through the expected liquidity event, if any. - Company-specific cost of capital (based on the investors' expected

⁶ For a business that has a single reporting unit, the task force believes that the fair value of the enterprise from the enterprise perspective would be consistent with the fair value considered for testing goodwill for impairment in connection with FASB ASC 350, *Intangibles – Goodwill and Other*. This value would include any market participant acquisition premium (MPAP) that market participants would assume could be realized in a sale of the enterprise on the measurement date. For companies that are not yet ready for a sale or IPO, it may not be appropriate to consider a MPAP on the measurement date. See Q&A 10.57, “Comparison Between the Fair Value of the Enterprise and the Value of the Enterprise Used for Valuing Equity Securities,” for further discussion.

⁷ When valuing the enterprise from the securities perspective, the valuation would consider the cash flows under current ownership and the required rate of return for the investors who in aggregate have control of the business. The valuation considers a hypothetical transaction where a market participant could buy the securities without triggering a change of control. This approach ensures that the valuation reflects the plans of the investors who in aggregate have control of the business, capturing the impacts if the business is not maximizing value, while still reporting the enterprise value in aggregate without adjustment for discounts that may apply to specific minority securities that lack the rights that investors would typically expect. In situations where the business is being run optimally, the enterprise value from the securities perspective would be the same as the enterprise perspective.

<i>Fair Value of the Enterprise from the Enterprise Perspective⁶</i>	<i>Fair Value of the Enterprise from the Securities Perspective</i>
for the acquisition of the enterprise, considering a market participant leverage structure. Valuation may reflect adjustments relative to guideline public company or guideline company transaction multiples to the extent that market participants buying the enterprise would make such adjustments.	rate of return for an investment in the securities of the enterprise). Valuation may reflect adjustments relative to guideline public company or guideline company transaction multiples, if justified based on company-specific factors.⁸

5.06 Almost all venture capital and private-equity-backed private companies⁹ will ultimately seek liquidity through the public markets or a sale of the company. When considering the enterprise value for the purpose of valuing equity interests, market participants may think about the value of the enterprise from the enterprise perspective or the securities perspective:

- a. From the enterprise perspective, the fair value of the enterprise on the measurement date is estimated based on the expected value upon a sale of the enterprise to a third party (typically referred to as the *controlling enterprise value*).¹⁰
 - i. This enterprise value would reflect the typical *cost of capital* based on the market participant required rate of return for the acquisition of the enterprise and the market participant leverage structure, as well as any market participant *synergies* or improvement strategies that third parties would expect (excluding unique, buyer-specific synergies that would not be expected to be incorporated into the purchase price, given the

⁸ Valuing a business from the securities perspective does not mean that the value will be consistent with the median multiples of the guideline public companies or transactions. The selected multiples should be consistent with the plans of the business under current ownership and reflect the differences in size, growth and profitability relative to the selected guideline public companies or transactions. When possible, it would be appropriate to calibrate to any relevant transactions to support the selected multiples. See chapter 7.

⁹ Certain family-owned businesses or certain investor-owned businesses may not seek an ultimate liquidity event, but instead may be managed to generate cash flows. For such businesses, it may be appropriate to focus more on the cash flows under current ownership (as described in 5.06b).

¹⁰ Measuring the enterprise value on the measurement date consistent with the value that would be expected to be realized upon a hypothetical sale to a third party is a reasonable approach even if the expected exit strategy for the business is an IPO. The value that a third party would pay for a private company that plans to IPO would be consistent with the expected premoney value at the IPO, adjusted for any additional required capital infusions prior to the IPO, discounted at the third party's required rate of return.

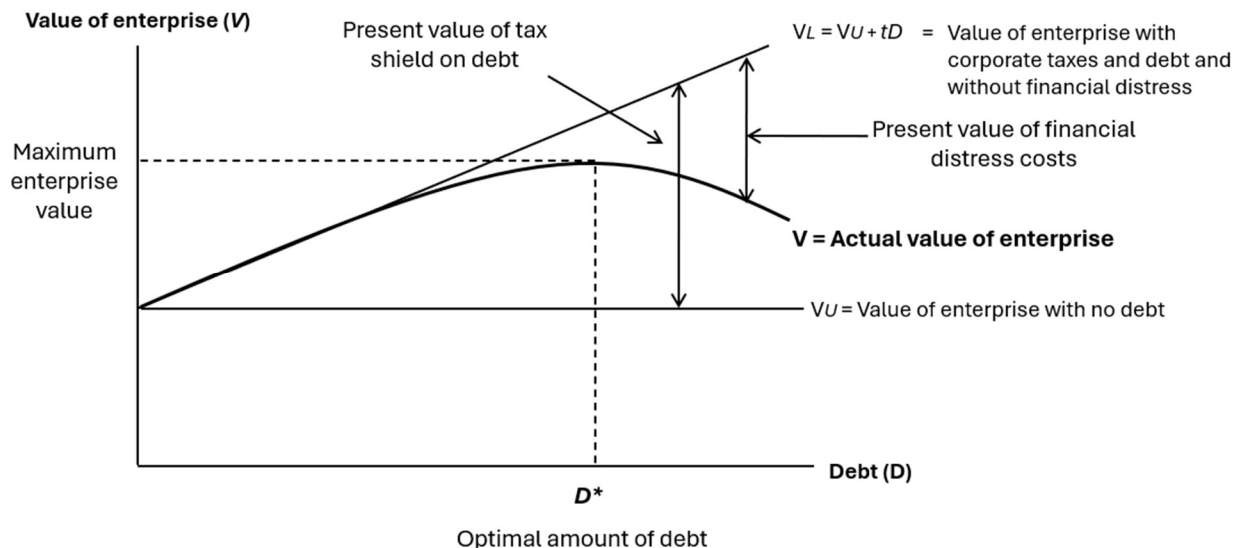
negotiation dynamics). Such synergies may be reflected via a market participant acquisition premium (MPAP), if applicable.

- ii. The *equity value* would then be measured by subtracting the value of debt for the purpose of valuing equity and adjusting the resulting equity value for illiquidity, if applicable, as discussed in chapter 4, "Value of Debt for the Purpose of Valuing Equity."
 - iii. The enterprise perspective is consistent with the way that valuations of businesses are typically performed in other situations, such as goodwill impairment testing. The Equity Securities Task Force (task force) recommends using this approach for valuation of an enterprise used when valuing equity securities, unless there are factors that this approach would not capture as discussed in paragraph 5.06(b)(i). Specifically, after a transaction that included an MPAP or near an exit that is expected to include an MPAP, it would not be appropriate to remove the MPAP when valuing the business for the purpose of valuing the equity securities. At dates when no MPAP is expected to be realizable at the measurement date, it would typically not be appropriate to include an MPAP when valuing the business for the purpose of valuing the equity securities.¹¹
- b. From the securities perspective, the fair value of the enterprise on the measurement date is estimated using equity investors' assumptions about the company-specific plans and cost of capital through the *liquidity event*. At the liquidity event, the estimated exit value would be based on the amount that might be realized through the public markets or a sale, considering the way that public market investors or a new third-party buyer would evaluate the enterprise at that point.
- i. Through the liquidity event, this enterprise value would reflect the company-specific cost of capital and leverage structure as well as any synergies or improvement strategies that market participants transacting in the equity interests would expect under current ownership, consistent with the assumptions that market participants would make when investing in the securities in the enterprise.¹²

¹¹ One example would be when a business has recently been taken private in a controlling transaction. Such a transaction may reflect an MPAP relative to the value under previous ownership represented by the market cap of the public company prior to the transaction. The MPAP may be attributed to the changes in cash flows or reductions in risk that are expected to be achieved under new ownership. These benefits would inure to all shareholders. Therefore, it would not be appropriate to remove the MPAP when valuing the securities in the business.

¹² For some enterprises (for example, some family-owned or other tightly held enterprises), the investors who in aggregate have control of the business may have goals that are not consistent with a third party perspective and may intend to hold the business indefinitely. A market participant investing in a minority interest in such an enterprise would use company-specific assumptions regarding the plans of the enterprise, including the cash flows and the expected capital structure, when estimating the enterprise value for the purpose of valuing the interest. That is, when

- ii. The equity value would then be measured by subtracting the fair value of debt adjusted for any differences in assumptions between market participants investing in the equity and market participants investing in the debt. The fair value of debt is measured using the company-specific cost of debt, which is a component of the company-specific cost of capital.
- iii. If the enterprise is not in financial distress, then the company-specific cost of capital assumption that market participants would make when investing in securities in the enterprise and the third-party cost of capital assumption that market participants would make when acquiring the entire enterprise would be expected to be approximately the same across a wide range of capital structures. Specifically, as leverage increases, both the cost of debt and the cost of equity increase, but the percentage of debt increases, and the value of the tax savings increases. Formulaically, the company-specific cost of capital may appear lower than the third-party market participant cost of capital; if so, it would be appropriate to add the additional return to the cost of equity. Increasing leverage is one of the strategies that PE investors use to increase equity returns.



- iv. If the fair value of debt is significantly below its face value, then the company-specific cost of capital most likely reflects some degree of financial distress and would be expected to be higher than the third-party market participant cost of capital, consistent with the assumptions that

market participants investing in the interest would have no ability to change the cash flows or capital structure or other business plans, market participant assumptions for the specific interest would be aligned with company-specific assumptions for the enterprise. The company-specific assumptions for the enterprise would be consistent with the assumptions that a market participant investing in the securities would make in valuing those securities.

market participants would make when investing in the securities in the enterprise. At the same time, the investors in the equity securities would benefit from having locked-in a below-market coupon for the debt. The increased company-specific cost of capital reflects the fact that market participants transacting in the equity interests would require higher returns, given the requirement either to hold the investment through the maturity of the debt to gain the benefit of the below-market coupon or to negotiate with the debt holders to obtain these benefits in a near-term exit. This approach is equivalent to valuing the enterprise considering the third-party market participant cost of capital and then subtracting the expected negotiated debt payoff or subtracting the fair value of debt and adjusting the resulting equity value for illiquidity, as discussed previously.

- c. For private equity and venture capital-backed businesses, in most cases, the enterprise value for the purpose of valuing equity interests may be measured from either perspective (that is, the two approaches would be equivalent):
 - i. The investors who hold the single primary class of equity in aggregate have control of the enterprise, so they could sell the whole business and realize the proceeds if that were their optimal strategy. Therefore, it would not be optimal for the investors to sell their securities for less than could be realized by selling the enterprise as a whole on the measurement date, considering the value of debt for the purpose of valuing equity.¹³
 - ii. In addition, even if the investors who in aggregate have control of the business believe that the equity interest will have more value given the company's plans under current ownership than in an immediate sale, they would be unlikely to be able to sell the interest for more than the pro rata value that could be realized by selling the enterprise as a whole on the measurement date, considering the value of debt for valuing equity. That is, market participants investing in the equity securities might believe that the business has enormous potential, but they would expect a correspondingly high rate of return.
 - iii. When valuing minority securities that lack information rights and tag along rights and other rights that investors typically expect, it would still be appropriate to measure the enterprise value from the perspective of the investors who in aggregate have control of the business. To capture the

¹³ The investors who in aggregate have control of the business make strategic decisions for the business, including decisions regarding the timing and form of the liquidity event. Other shareholders who hold the same class of equity will ultimately realize the same cash flows, but these shares may lack non-economic rights that investors typically expect. In addition, some shareholders' interests may not be aligned with the investors in the controlling group, due to different strategic objectives or different liquidity needs. To capture the impact of these differences, the valuation would first measure the total enterprise value from the perspective of the investors who in aggregate have control of the business, then allocate the total enterprise value among the debt and equity securities, and finally consider whether to apply adjustments for specific securities to account for the differences in the rights of these securities. See chapter 7 for further discussion.

impact of the differences in rights for these securities, it may be appropriate to apply a discount for lack of marketability. See chapter 7 for additional discussion.

- 5.07** The use of company-specific assumptions when estimating the value of the enterprise for the purpose of valuing the equity securities may be appropriate because the unit of account is the equity security, not the enterprise as a whole. A market participant investing in a minority interest in the enterprise would typically not be able to change the company's strategy and policies. Therefore, a market participant investing in an interest in the enterprise would consider the company's plans under existing ownership and make corresponding assumptions regarding the expected cash flows for the business and the expected time horizon.
- 5.08** When measuring the value of the equity securities in an enterprise, the enterprise value should be measured including the benefits of control, considering the way that such control would be exercised by the current owners or in a third-party sale of the enterprise. The valuation for any equity securities that do not have the same non-economic rights or whose interests are not aligned with the investors who in aggregate have control of the business may then be adjusted for differences in risk and lack of marketability, if appropriate. See chapter 7.
- 5.09** For the purpose of valuing equity securities in the enterprise, the valuation specialist would need to estimate the value of equity. Thus, if the valuation specialist begins by estimating the total enterprise value including cash, the valuation specialist would then subtract the value of debt for the purpose of valuing equity, as discussed in chapter 4. Note that in some cases, the *market approach* or *income approach* is used to value equity directly using equity multiples or after-debt cash flows. If such an approach is used, it is not appropriate to subtract debt to estimate the equity value.
- 5.10** After estimating the total equity value and subtracting the value of any options or warrants, or profits interests as discussed in paragraphs 5.11–.23, the remaining value may be allocated to the single primary class of equity.¹⁴ Typically, this allocation would be made on a pro rata basis, as all investors have the same class of equity. It might be appropriate to make further adjustments to this value if the specific equity security lacks certain noneconomic rights, such as information rights or tag along rights, that market participants would typically expect. See chapter 7 for a discussion of the circumstances in which it might be appropriate to apply a *discount for lack of marketability* to capture the additional rate of return that market participants might demand for securities that lack these rights.

¹⁴ This chapter assumes that the equity has a simple capital structure with a single primary class of equity. For a discussion of complex capital structures, please see chapter 6, "Valuation of Equity Securities in Complex Capital Structures."

Incorporating Stock-Based Compensation Awards into the Valuation

- 5.11** Stock-based compensation is an important part of the total compensation package required to attract and retain employees for many companies. For such companies, a market participant acquiring the business or investing in the equity securities in the business would assume that the business would continue to issue stock-based compensation awards to employees; therefore, the value that a market participant would pay for the enterprise would take into account the expected cost of this compensation.
- 5.12** At the acquisition of a business or at a financing date, the transaction price reflects the value of the equity securities that the investors acquired. For example, suppose that investors buy the equity of a business for \$200 million. If the company then issues stock-based compensation awards, the value of the equity held by the investors is still \$200 million. The stock-based compensation awards do not reduce the value of the investors' equity because the investors would have expected that the company would need to issue stock-based compensation awards as part of the total compensation package needed to attract and retain employees; therefore, the impact of the stock-based compensation awards was already factored into the original purchase price of \$200 million (see paragraph 5.16 for further discussion).
- 5.13** The premise of value for financial reporting for option-like stock-based compensation awards considers the potential upside (option value or time value) over the expected term (expected time to exercise). At a financing date, the valuation analysis should be calibrated to the transaction price, treating stock-based compensation in one of two ways:

• Expense treatment: Equity value treating stock-based compensation awards as an expense (Expense Treatment)	• Equity value will reflect the price that a third-party would pay for the outstanding shares of the business, knowing that they would also need to issue stock-based compensation awards in the future • Considers stock-based compensation as a cost of the business • Because the projected expenses will be higher and cash flows lower compared to the Capital Structure Treatment, this treatment will result in a lower equity value compared to the Capital Structure Treatment of stock-based compensation. • The resulting equity value (considering only the intrinsic value of stock-based compensation awards) is allocable only to the existing/outstanding securities in the company plus the common stock equivalent shares of the in-the-money options as of the measurement date. See further discussion in paragraph 5.14.
• Capital structure treatment: Equity value treating stock-based compensation awards as securities in the	• Equity value will reflect the price that a third-party would pay for the outstanding shares of the business plus the incremental value that the stock-based compensation awards may realize over the expected term

capital structure (Capital Structure Treatment)	• Considers the stock-based compensation awards as equity securities of the business • Because the projected expenses will be lower and cash flows higher compared to the Expense Treatment, this treatment will result in a higher equity value compared to the Expense Treatment of stock-based compensation. • The resulting equity value is allocable to the existing/outstanding securities in the company as of the measurement date and the outstanding and future stock-based compensation awards, considering the option value of those awards. See further discussion in paragraph 5.15.

5.14 Under the Expense Treatment of stock-based compensation, in-the-money options outstanding as of the measurement date would be treated as if converted to common stock. Options not in-the-money should not be included in this adjustment.

- Equity value: The equity value would be adjusted for the incremental cash that would be received upon exercise of the in-the-money options. That is, the exercise price multiplied by the number of in-the-money options will be added to equity value.
- Capital structure: The equity value including the proceeds from exercising the in-the-money options would then be allocated to the existing/outstanding securities in the company as of the measurement date, including the common stock outstanding plus the additional common stock resulting from the assumed exercise of the in-the-money options as of the measurement date.

5.15 Under the Capital Structure Treatment of stock-based compensation, existing/outstanding options as of the measurement date and future stock-based compensation awards would be considered in the capital structure.

- Equity value: The equity value would be measured by calibrating to a recent transaction, increasing the value relative to the Expense Treatment to include the incremental value of the stock-based compensation.
- Capital structure: All existing/outstanding common stock and options would be included in the capital structure (in contrast to the Expense Treatment of stock-based compensation, in which only in-the-money options are included). Future stock-based compensation awards would include expected options to be granted in the near future (that is, those contemplated as of the measurement date) as well as an estimate of future stock-based compensation awards to be granted through the expected liquidity event (that is, including an estimate of future awards not yet specifically planned as of the measurement date).

5.16 Measuring the equity value using the Expense Treatment of stock-based compensation is consistent with standard valuation practice and aligns with the discussion in paragraph 4.34 of the AICPA Accounting and Valuation Guide, *Testing Goodwill for Impairment*, which states that “noncash expenses associated with share-based payments should be

included as a cash outflow. This adjustment would be needed to the extent such expenses are thought to be compensatory in lieu of cash and, therefore, similar in nature to other accruals included in PFI.” In addition, using the Capital Structure Treatment would require additional procedures, such as including the value of the outstanding and expected option pool for the guideline public companies to estimate the total invested capital for the market approach, as well as estimating the uncertain future stock-based compensation awards to be granted through the expected liquidity event. Given these factors, the task force recommends using the Expense Treatment of stock-based compensation in most circumstances.

5.17 To have an appropriate basis for comparison with the guideline companies and guideline transactions and for estimating the calibrated required rate of return for the discounted cash flow method, it would be appropriate to measure the enterprise value, and consequently, the equity value, considering the Expense Treatment of stock-based compensation. Therefore, if starting with a calibrated equity value that was calculated using the Capital Structure Treatment, the equity value should be adjusted by subtracting the time value for the stock-based compensation awards (the total value less the intrinsic value). For example, suppose investors buy a company for \$200 million and then issue stock-based compensation awards that participate in the upside with a fair value of \$17 million and an intrinsic value of zero. In the Capital Structure Treatment, the resulting calibrated equity value including stock-based compensation awards is \$217 million (\$200 million plus the \$17 million time value of the awards). In the Expense Treatment, the enterprise value used for calibrating market multiples in the market approach and the cost of capital for the income approach would still be based on the \$200 million equity value.

5.18 *Example.* Suppose that investors purchase the equity of a business for \$200 million and receive 20 million Class A Units at \$10 per unit. In connection with the transaction, the company also issues approximately 3.5 million Class B Profits Interests (15% of total units) as compensation, participating pro rata in the business’ appreciation above the \$200 million threshold.¹⁵ The total equity value measured utilizing the Expense Treatment of stock-based compensation awards is \$200 million. The total equity value measured utilizing the Capital Structure Treatment of stock-based compensation awards is \$216.98 million, calibrated so that Class A value is \$200 million.

Capital Structure	Number of Units	Purchase Price per unit	Liquidation Preference	Conversion Ratio	Seniority	Value per unit	Total Value
Class A units	20,000,000	10.00	10.00	1.00	1	10.00	200,000
Class B Profits Interests	3,529,412					4.81	16,980
Calibrated Equity Value, inclusive of Stock Based Compensation							216,980
Value of SBC							16,980
Equity value net of SBC							200,000
Term	5 years						
Volatility	60%						
Risk-free rate	0.29%						

¹⁵ Note that profits interests are economically equivalent to options on the Class A units, so another approach for addressing this example would be to model the Class B units as at-the-money options with the Class A as the underlying. Please see Q&A 10.52, “Valuing Profits Interests,” for further discussion.

Event	Strike Price	Call Option Value	Incremental Call Option Value	Allocation Table		Value by breakpoint	
				Class A units	Class B units	A	B
Class A reach their LP	0	216,980	103,783	100%	0%	103,783	0
Class B begin participating	200,000	113,197	113,197	85%	15%	96,217	16,980

5.19 At later measurement dates, the enterprise value would typically be measured using the Expense Treatment of stock-based compensation awards. Measuring the enterprise value using the Expense Treatment is consistent with standard valuation practice since it is consistent with how most guideline public companies present their financial results and shares outstanding; that is, companies expense stock-based compensation awards and calculations of market capitalization used in calculating the total enterprise value for the guideline public companies includes outstanding shares but does not include stock options or restricted stock. Similarly, transaction prices cited when applying the guideline company transactions method do not include the option value associated with stock-based compensation awards. In the discounted cash flow method, the projections for the business should include the fully loaded compensation costs, including stock-based compensation awards, consistent with the expenses that a market participant would expect for the business.¹⁶

5.20 Recognizing the distinction between the enterprise value measured treating stock-based compensation awards as an expense and the enterprise value measured treating stock-based compensation awards as equity securities is important for several reasons:

- Purchase prices paid in transactions are ordinarily reported as the price that the investors or acquirer paid, which reflects the value treating stock-based compensation awards as an expense, not the value treating stock-based compensation awards as equity securities in the capital structure. So beginning with the value measured treating stock-based compensation awards as an expense promotes consistency between measurement dates when calibrating and rolling the value forward between periods.
- The value measured treating stock-based compensation awards as an expense is the appropriate value for setting the participation thresholds for profits interests. Specifically, the participation threshold for profits interests must be set such that the intrinsic value of the profits interests is zero at issuance, when considering the value that a third party would pay for the business.

¹⁶ It also may be possible to incorporate the impact of stock-based compensation awards not by subtracting the expense in the discounted cash flow method, but rather by increasing the required rate of return for the investors to reflect the expected dilution impact, consistent with the calibrated discount rate from a recent transaction. However, if there is not a recent transaction, then it may be more appropriate to explicitly model fully loaded compensation costs or to model the expected dilution in the value that the investors may realize at the expected liquidity event and then recalibrate to estimate the corresponding required rate of return, as it would likely be difficult to appropriately determine an adjusted discount rate that incorporates market participant assumptions about expected future dilution at later dates. If used properly, both of these approaches will also result in an enterprise value that reflects the value that would be expected to be realized upon a sale of the business to a third party, consistent with the Expense Treatment.

- The enterprise value measured treating stock-based compensation awards as an expense is also the appropriate value for measuring purchase consideration at the transaction date and goodwill, promoting consistency between the enterprise values used for different purposes.
- Including stock-based compensation awards as an expense and also including stock-based compensation awards in the capital structure will double count the impact of stock-based compensation awards in the estimated value of the investor securities and common stock. The impact of stock-based compensation awards should be included once, not twice or not at all.

5.21 Conceptually, the incremental value of the stock-based compensation awards considered as part of the capital structure reflects the value of the employees' investment of time in the business, foregoing a portion of their total compensation that they might otherwise have received in cash so that they can participate as equity holders. This investment increases the total enterprise value but also increases the claims on the equity value, leaving the total value of the investor securities unchanged. This result is akin to the difference between the *premoney* vs. *postmoney value* when the company raises additional financing – the premoney securities receive a smaller share of the larger postmoney value, leaving the aggregate value of the premoney securities unchanged.

5.22 Two possible processes for reconciling the valuation between the equity value measured using the Expense Treatment and the equity value measured using the Capital Structure treatment are as follows:

- Intrinsic value method (values the underlying investor securities or common stock, then requires a separate calculation for stock-based compensation awards).* One process for estimating the value of the underlying securities held by the investors or the common stock, or both, is first to include the outstanding in-the-money stock-based compensation awards as full shares, adding the strike prices or per unit participation thresholds to the equity value.

When valuing employee stock options, after estimating the value of the underlying investor securities or common stock, the valuation specialist typically would value the options in a separate Black Scholes model (or lattice or simulation model if necessary), using the fair value of the underlying stock and considering the expected term of the options, volatility of the common stock and risk-free rate.

In some cases, instead of valuing the stock-based compensation awards using a separate model, the stock-based compensation may be valued within the overall allocation framework. For example, since profits interests have an expected term equal to the time to liquidity for the company, they are typically valued using the Option Pricing Method (OPM) considering the full capital structure. To capture the incremental value of the stock-based compensation awards within the model, the valuation specialist would first estimate the value of the investor securities and common stock using the intrinsic value method, then adjust the allocation model

to include all outstanding stock-based compensation awards (including out-of-the-money stock-based compensation awards) considering the contractual strike prices. Finally, the valuation specialist would solve for the total equity value such that the aggregate value allocated to the investor securities and common stock equals the value allocated under the intrinsic value method.

- b. *Iterative method (values both the underlying investor securities and common stock as well as the stock-based compensation awards within the same model).* Another process for estimating the value of the underlying investor securities and common stock, the corresponding equity value considering the incremental value of the stock-based compensation awards, and the value of the stock-based compensation awards themselves is to iterate by adding back the incremental value of the stock-based compensation awards within a single valuation model. As a first step, the valuation specialist would perform an initial allocation of the equity value measured treating stock-based compensation awards as an expense, considering the expected term to liquidity and including the outstanding options within the allocation framework. This initial allocation will double count the impact of stock-based compensation awards, treating the upside as dilutive. To offset this impact, the valuation specialist would then increase the allocable equity value by the difference between the value allocated to the stock-based compensation awards and the intrinsic value of the stock-based compensation awards. The valuation specialist would iterate until the allocable equity value converges.

5.23 *Example – One Year Later.* One year after the initial \$200 million investment, suppose that given changes in the company's performance and changes in the markets, the equity value has increased by 30%, to \$260 million. The intrinsic value of the Class B Profits Interests equals \$9 million, 15% of the \$60 million increase in equity value.

- a. Using the intrinsic value method, the valuation specialist would add the aggregate strike price (participation threshold) for the Class B Profits Interests to the equity value and then divide by the aggregate number of units to estimate the Class A value per unit. In this example, the aggregate strike would be $\$10 \times 3.53$ million Class B Profits Interests, or \$35.3 million. The resulting Class A value would be \$260 million plus the \$35.3 million strike price, divided by 23.5 million units, equal to \$12.55 per unit or \$251 million in aggregate.
- b. Using the iterative method, the valuation specialist would first allocate \$260 million among the Class A Units and Class B Profit Interests. This initial allocation will double count the impact of stock-based compensation awards, treating the upside as dilutive and allocating only \$240 million to the Class A Units. The valuation specialist would then adjust the initial \$260 million by adding the aggregate value of the Class B Profits Interests less the intrinsic value of the Class B Profits Interests, implying an equity value of \$270.6 million. This process is repeated until the value of the Class A units equals the total equity value less the intrinsic value of the Class B Profits Interests. The resulting total equity value including stock-based compensation awards would be \$272 million,

with a Class A value of \$251 million and Class B Profits Interests value of \$21 million (\$9 million of intrinsic value and \$12 million of time value).

Capital Structure	Number of Units	Purchase Price per unit	Liquidation Preference	Conversion Ratio	Seniority	Value per unit	Total Value
Class A units	20,000,000	10.00	10.00	1.00	1	12.55	251,000
Class B Profits Interests	3,529,412					5.95	21,014

Term	4 years					Equity Value including incremental value of stock-based compensation	272,014
Volatility	55%					Time Value of SBC (\$21m-\$9m)	12,014
Risk-free rate	0.67%					Equity value net of SBC	260,000

Event	Strike Price	Call Option Value	Incremental Call Option Value	Allocation Table		Value by breakpoint	
				Class A units	Class B units	A	B
Class A reach their LP	0	272,014	131,922	100%	0%	131,922	0
Class B begin participating	272,014	140,092	140,092	85%	15%	119,078	21,014

Chapter 6

Valuation of Equity Securities in Complex Capital Structures

- 6.01** This chapter provides guidance regarding the valuation of equity securities for an enterprise with a capital structure involving multiple classes of securities. Many enterprises are financed by a combination of different classes of equity, each of which provides its holders with unique rights, privileges, and preferences (hereinafter referred to collectively as *rights*). Often, these enterprises issue both preferred and common shares, with the preferred stock comprising several series resulting from successive rounds of financing, each of which has rights that likely differ from those of other series. When estimating the *fair value* of the equity securities underlying stock-based compensation awards, in addition to considering transactions in the enterprise's equity interests (see chapter 8, "Inferring Value From Transactions in a Private Company's Securities") and the other concepts in this guide, the valuation specialist should determine how each class of equity would participate in future distributions from a sale or other *liquidity event* and the implications for the fair value of each class of equity.
- 6.02** Typically, enterprises with multiple classes of equity divide the classes into two broad categories: preferred and common. Sometimes, one of the principal objectives of issuing preferred stock — the granting of different rights to different groups of stockholders — may be achieved instead by issuing multiple classes of common stock or different classes of membership units in a limited liability company (LLC). The issues discussed in this chapter for valuing equity interests in complex capital structures apply not only to preferred versus common stock but also to any situations involving multiple classes of equity issued by an enterprise wherein some classes have senior rights similar to those of preferred stock.
- 6.03** Capital structures involving multiple classes of equity are often found in start-up enterprises. Value creation in such enterprises is frequently a high-risk process. Investors may fund such enterprises beginning at an early stage of the enterprise's existence when the enterprise may have an unproven business model, little or no infrastructure, an incomplete management team, and little or no short-term prospects of achieving a self-sustaining business with revenue, profits, or positive cash flows from operations. In spite of such challenges, such enterprises may draw significant capital from investors because of the potential for high returns in the event that the enterprise is successful in achieving its plans.
- 6.04** Capital structures involving multiple classes of equity may also be found in larger enterprises. Investors may seek high returns through a variety of strategies (for example, acquiring well-run companies that can be used as a platform for expansion [a "roll up"] or acquiring poorly run companies in which profitability can be improved through better management [a "turnaround"]). In many cases, investors also increase the risk and reward profile for their equity investments through leverage.

- 6.05** In view of the high risks associated with certain investments, investors may seek downside protection and significant control or influence over the enterprise's activities. Thus, in many cases, in exchange for cash investments in the enterprise, investors may receive preferred stock that conveys various rights to its holders. Such enterprises will often also have shareholders who hold common stock, which may have been the result of initial issuances of common stock to founders for nominal or no cash consideration, stock issued to previous shareholders in an acquisition, or stock granted or sold to executives and employees. The result is that many enterprises have complex capital structures with various classes of equity involving different rights:
- a. Early-stage companies often burn significant cash and are funded through a series of financing rounds which occur over time. Each financing round is usually negotiated independently and often involve multiple investors which may be different from prior rounds; therefore, the capital structure may include many different classes of preferred stock with different rights and preferences.
 - b. In an acquisition, companies are often funded through a large initial investment to buy out existing shareholders, and a new capital structure is often put in place in connection with this investment. The acquisition of such companies may also be structured through a holding company that uses profits interests as compensation for key executives and may also include a junior class of units for rollover equity investors.
 - c. Another capital structure used by some enterprises is for investors to receive both a debt instrument or *debt-like preferred stock* with a specified cumulative dividend rate (sometimes referred to as the *hurdle rate*), as well as common stock. In this structure, since investors receive multiple instruments even at the initial investment date, the preferred stock cannot be assumed to be worth its face value without further analysis. See paragraph 6.54(d) for further discussion.
- 6.06** Estimating the value of the different classes of equity in an enterprise requires an understanding of the rights associated with each class. Such rights are generally meaningful and substantive and often are intensely negotiated and bargained for by the investors.¹ The *lead investors* often structure the rights for their securities to allow the holders to control the business and direct the company's operations (for example, to replace management or force the sale of the company).
- 6.07** Most companies with complex capital structures have been funded by investors that will ultimately seek liquidity through an initial public offering (*IPO*) or sale of the company; therefore, the methods in this chapter focus on estimating the fair value of the different classes of equity based on the future payoffs at the time of the liquidity event. However, there are other situations in which a company with a complex capital structure may

¹ The terms *meaningful* and *substantive*, as applied to rights, are used in this chapter to describe preferred stock rights that are important to an investor, in the sense that those rights provide the investors with the protections that they require to invest in the enterprise, which may include liquidation preferences and a level of control and influence.

remain private indefinitely. In these situations, the liquidity event should be considered to be the event in which the preferred stock is to be redeemed or repurchased. Examples include the following:

- a. In rare instances, a private company will choose to stay private by acquiring the preferred stock from outside investors. In this situation, the company typically retires the preferred stock at the repurchase date, and this repurchase may be treated as a "liquidity event."
- b. Many family-owned or other closely held businesses have *simple capital structures* (See chapter 5, "Valuation of Equity Securities in Simple Capital Structures"). However, when these businesses raise capital from outside investors without creating a new class of equity, the investment is often accompanied by various side agreements. In these situations, or when such a business has a more complicated capital structure, the valuation specialist will need to consider the specific facts and circumstances, considering the time frame until the resolution of the uncertainties relating to the future payoffs to the investment. Note that when an investor makes a minority investment in such a business, the investor will typically negotiate a path to liquidity (for example, a put right or mandatory redemption feature that forces the company to repurchase the investment at the higher of cost or *fair market value* or a negotiated formula price after a specified amount of time). In addition, when these companies issue stock-based compensation awards to their employees, they typically also provide some degree of liquidity to these employees (for example, through a repurchase program that may be available once per year). In these fact patterns, such rights should also be considered when estimating the fair value of the related equity securities. If there is a share repurchase program, the repurchase price may be fair value or formula driven, depending on the terms of the arrangement.²

6.08 For simple capital structures (that is, capital structures that include only common stock plus debt, debt-like preferred instruments, or both), where the debt leverage is consistent with the leverage observed for commercial debt as discussed in footnote 30 in paragraph 6.54(d), it would be possible to estimate the value of the equity securities in the enterprise by directly estimating the value of any debt and debt-like preferred instruments as discussed in chapter 4, "Value of Debt for the Purpose of Valuing Equity," and subtracting those values from the total *enterprise value*, adjusting for the value of any options and warrants as applicable, then allocating the residual *equity value* pro rata to the common stock. See chapter 5. In this circumstance, the more sophisticated methods discussed later in this chapter typically would not be required when estimating the fair

² If the repurchase price is formula-driven, the repurchase price may or may not represent the price at which the shares would have transacted if the formula price had not been available. Therefore, additional analysis may be required when estimating the fair value of the stock-based compensation award. See paragraph 8.63 for further discussion.

value of the securities underlying stock-based compensation awards.³ This chapter focuses primarily on companies that raise capital in stages (e.g. Series A, Series B, Series C), as would typically be the case for venture capital-backed companies.

Rights Associated With Preferred Stock

- 6.09** The rights received by preferred stockholders may be divided into two broad categories: direct economic rights and noneconomic rights.⁴ Economic rights are designed to facilitate better economic results for preferred stockholders as compared with common stockholders. Those rights relate to the timing, preference, and amounts of returns the preferred stockholders receive as compared with the holders of other classes of stock. Noneconomic rights provide preferred stockholders with the ability to influence the enterprise in a manner that is disproportionate to their ownership percentages.
- 6.10** The following are some of the typical economic rights enjoyed by preferred stockholders (which are discussed in detail in appendix A, “Valuation Reference Guide,” paragraphs A.05.03–.15, “Rights Associated With Preferred Stock”):
- a. Preferred *liquidation preferences* and seniority
 - b. Preferred dividends
 - c. *Mandatory redemption rights*
 - d. *Conversion rights*
 - e. *Participation rights*
 - f. *Antidilution rights*
 - g. *Registration rights*

³ Chapter 5, “Valuation of Equity Securities in Simple Capital Structures,” describes a simple capital structure as a capital structure involving a single primary class of equity (for example, common stock of a corporation or Class A units of a limited liability company [LLC]). The capital structure may also include debt or debt-like preferred stock as well as options and warrants or profits interests in an LLC. The more sophisticated methods discussed in this chapter would typically not be required when estimating the fair value of the single primary class of equity. However, Black Scholes, Monte Carlo simulation, lattice models or other variants of option methods are typically required for valuing many types of stock-based compensation awards (e.g. options or profits interests) or for valuing warrants held by investors. In addition, option pricing methods or hybrid methods may be required for valuing debt or debt-like preferred stock or preferred stock liquidation preferences when the leverage is much higher than is observable in the public debt markets, as discussed in paragraphs 6.71–.72.

⁴ Economic rights may also allow investors to influence negotiations regarding future financing, whereas noneconomic rights may also allow investors to protect the economics of their investment. For purposes of this discussion, *economic rights* have been classified as those that are typically explicitly included in the valuation analysis, and *noneconomic rights* as those that would be considered in estimating the expected time horizon for the investment and determining who would have influence over the enterprise’s strategy and direction.

6.11 The following are some of the typical noneconomic rights enjoyed by preferred stockholders (which are discussed in detail in appendix A, paragraphs A.05.16–.25):

- a. Voting rights*
- b. Protective provisions and veto rights*
- c. Board composition rights*
- d. Drag-along rights⁵*
- e. Right to participate in future rounds*
- f. First refusal rights*
- g. Tag-along rights*
- h. Management rights*
- i. Information rights*

6.12 Noneconomic rights allow preferred stockholders to influence the manner in which an enterprise governs itself and manages its operating and financial affairs, irrespective of those stockholders' proportional ownership interests. For example, preferred stockholders may own 30% of the outstanding voting capital stock, but noneconomic rights could allow them to influence the enterprise's operations as if they owned a majority of the outstanding voting capital stock.

6.13 The following tables summarize the nature of the rights typically held by preferred stockholders. Economic rights (Table 6-1) are generally considered meaningful and substantive in the context of valuing privately held company equity interests, and methods for valuing equity interests typically consider such rights. Noneconomic rights (Table 6-2) also are generally considered meaningful and substantive, but quantifying the impact of such rights is more challenging and methods for valuing equity interests typically do not consider such rights, although the impact may be considered when assessing whether it is appropriate to apply any adjustments (e.g., a discount for lack of marketability) to the output from the valuation model. See chapter 7, "Control and Marketability," appendix A, paragraphs A.05.01–.25, "Rights Associated With Preferred Stock," and paragraphs A.12.01–.10, "Models Used in Calculating Discounts for Lack of Marketability," for additional details.

⁵ *Drag-along rights* should not be confused with *tag-along rights*, which have different meanings in various other contexts. (See appendix A, "Valuation Reference Guide," paragraphs A.05.01–.25, "Rights Associated With Preferred Stock," and the glossary for definitions.)

Table 6-1

Economic Rights

<i>Nature of right</i>	<i>Purpose of right</i>	<i>When, if ever, is the right generally meaningful and substantive before initial public offering (IPO)?</i>
Preferred dividends (noncumulative)	Preference to receive dividends if declared	N/A ¹
Preferred dividends (cumulative)	Aims to provide a minimum fixed return in all situations except IPO	Entire life of instrument
Liquidation preference (nonparticipating)	Ensures higher return up until break-even point ²	Up until break-even point ²
Liquidation preference (participating)	Ensures disproportionately higher return in all situations except IPO	Entire life of instrument
Mandatory redemption ³	Right to return of capital; aims to provide liquidity	Entire life of instrument
Conversion (fixed or variable ratio)	Produces better economic results in certain circumstances	Entire life of instrument
Participation (fixed or variable ratio)	Ensures disproportionately higher return in all situations except IPO	Entire life of instrument
Antidilution ⁴	Aims to protect value of investment	Entire life of instrument
Registration ⁵	Aims to provide liquidity	N/A
¹ Noncumulative preferred dividends are payable only if declared. Because it is unusual for private companies to declare dividends, these rights are not considered substantive until market participants would assume that the company will declare a dividend. Cumulative preferred dividends are payable regardless of whether declared and, thus, increase the liquidation preference for the preferred and are considered substantive. ² <i>Break-even point</i> or <i>breakpoint</i> refers to the value of the proceeds resulting from an assumed enterprise liquidation for which conversion of preferred to common stock would result in proceeds for preferred shareholders equal to their liquidation preference. When performing scenario analysis (see the discussion starting at 6.20), it is important to note that the future value of the business in some scenarios may be below the breakeven point for a given class of equity, in which case the liquidation preference for that class has value, and the future value of the business in other scenarios may be above the breakeven point for that class of equity, which makes the liquidation preference for that class less relevant. ³ Mandatory redemption provisions provide investors with a mechanism for influencing the timing of a liquidity event or other negotiated exit strategy, even when the investors in the respective class of equity do not have control over the enterprise as a whole. ⁴ <i>Antidilution provisions</i> (for example, down-round protection features) increase the value of preferred stock and preferred or common warrants by increasing the conversion ratio or decreasing the warrant strike price if shares are issued at a lower price at a future date. The existence of such provisions may have minimal impact on the value of the common stock, and the valuation methods discussed in this chapter will generally not capture the value of these provisions. However, if the enterprise also needs to report the valuation of these instruments directly, the provision should be taken into account in a simulation model (or a lattice if only one financing is expected), capturing the timing of any expected future financings and the impact of the provision on the strike price or conversion ratio for the instrument given the simulated stock price at the financing date. If the company expects to reach a liquidity event without needing any additional financing, modeling the impact of the antidilution provision within a simulation would not be required. A scenario analysis that focuses on only a few specific outcomes, rather than considering the distribution of outcomes in one or more		

scenarios, is generally not an appropriate method for valuing a warrant or convertible note because it does not provide enough granularity in the future scenarios.

- ⁵ Typically, private enterprises go public when they are operationally ready, and when market conditions are conducive to a successful IPO. It is not typical for a private enterprise to go public as a result of the preferred stockholders exercising their rights to force the enterprise to file a registration statement for an IPO. However, like mandatory redemption provisions, registration rights provide investors with leverage to influence the timing of a liquidity event or other negotiated exit strategy.

Table 6-2

Noneconomic Rights

<i>Nature of right</i>	<i>Purpose of right</i>	<i>When, if ever, is the right generally meaningful and substantive before initial public offering (IPO)?</i>
Voting	Ability to control or influence	Entire life of instrument
Protective provisions and veto rights	Ability to influence disproportionate to ownership	Entire life of instrument
Board composition	Ability to influence disproportionate to ownership	Entire life of instrument
Drag along	Ability to require other shareholders to participate in any sale of the investment	Entire life of instrument
Right to participate in future rounds	Ability to maintain or increase ownership percentage	Entire life of instrument
First refusal	Restricts ability to sell shares to third parties	Entire life of instrument
Tag along	Improved ability to sell shares when another investor decides to sell to a third party	Entire life of instrument
Management	Access to inside information not available to common stockholders	Entire life of instrument
Information	Access to inside information not available to common stockholders	Entire life of instrument

Methods of Estimating the Fair Value of Multiple Classes of Equity

- 6.14** If there are no transactions in the securities underlying the stock-based compensation awards, then it is necessary to use a valuation model to estimate the fair value of these securities, considering the rights and preferences of each class of equity. If there are relevant transactions in the securities underlying the stock-based compensation awards, then these transactions should be considered as discussed in chapter 8. In addition, any valuation model⁶ that is given some weight when estimating the fair value of the securities underlying the stock-based compensation awards should be reconciled to any

⁶ Note that a scenario analysis that uses higher and lower value scenarios would not necessarily be expected to reconcile to the transaction within each scenario, but instead, the weighted average across the scenarios would be expected to reconcile to the transaction.

relevant transactions in the equity securities, considering both primary transactions in the investor securities and secondary transactions, if applicable.

- 6.15** This chapter discusses three primary methods for valuing multiple classes of equity used in practice as observed by the task force, as well as two special case methods that are often used as one of the methods considered within scenarios in the *scenario-based method (SBM)* or the hybrid method but that would be used on a stand-alone basis only in limited circumstances. Please see paragraphs 6.19–.20. Other methods also may exist or be developed in the future.

Overall Comments Applicable to Methods for Valuing Equity Securities

- 6.16** No single method for valuing equity interests appears to be superior in all respects and circumstances over the others. Each method has merits and challenges, and there are trade-offs in selecting one method instead of others. The level of complexity differs from one method to another.
- 6.17** Some methods for valuing equity securities may appear to have more theoretical merit than others. However, such methods typically are more complex, and often, it may be difficult to corroborate estimates of certain critical inputs. A more complex or detailed method would not necessarily be superior to a simpler method that captures the key characteristics that *market participants* would consider. In addition, there appears to be no method available that takes into account all rights of preferred stockholders. Rather, due to the nature and complexity of some of the typical preferred stock rights, the effect of only certain of the various preferred stock rights is considered under the available methods. That most of these rights typically do not appear in conjunction with securities issued by publicly traded enterprises contributes to the absence of market comparable transactions for valuation specialists to draw upon. The resulting challenges in estimating fair value do not, however, justify the use of “rules of thumb.”
- 6.18** Noneconomic rights, such as voting rights, protective provisions and veto rights, board composition rights, drag-along rights, first refusal rights, tag-along rights, management rights, and information rights, are generally not explicitly considered in any of the commonly used methods for valuing equity securities. However, these rights would be considered in assessing market participant expectations regarding expected exit scenarios and the timing of exit. In addition, the impact of these rights may be captured in adjustments such as a discount for lack of marketability applied to the modeled value for the common stock using one of the methods described subsequently. See chapter 7 for a discussion of these adjustments.

Considerations Affecting the Selection of a Method for Valuing Equity Securities in Complex Capital Structures

- 6.19** In a complex capital structure, the payoff to the various share classes as a percentage of the total equity value varies depending on the equity value at exit. For example, if the capital structure includes convertible preferred stock with a liquidation preference, the payoff to the common stock may be low or zero on the downside, but the payoff to

common would be the same as preferred on the upside where preferred converts. This complexity results in a *nonlinear payoff structure*.⁷ As such, valuing equity securities within a complex capital structure requires considering the distribution of possible equity values at exit and the corresponding values for each class of equity. The following sections describe three broad categories of methods for valuing equity securities in complex capital structures:

- *Scenario-based method (SBM)*. A forward-looking method that considers one or more possible future scenarios, allocating value within each scenario and discounting back to the valuation date. This method may also be referred to as the probability-weighted expected return method (PWERM).
- *Option pricing method (OPM)*. A forward-looking method that considers the current equity value and then allocates that value to the various classes of equity considering a continuous distribution of outcomes, rather than focusing on distinct future scenarios.
- *Hybrid method*. A hybrid of the SBM and the OPM, where OPM is used to allocate value in one or more scenarios. One specific example of a hybrid method is a two-scenario hybrid method using a weighting between the OPM scenario and a common stock equivalent (CSE) scenario (see paragraph 6.20).

6.20 In addition to the SBM, OPM and hybrid method, there are two special case allocation methods that are often used as one of the methods considered within scenarios in the SBM or the hybrid method. When used on a stand-alone basis, however, these methods typically would be appropriate only in certain limited circumstances. Each of these two methods is based on assumptions that allow for simplification of the more comprehensive models described in the SBM, OPM and hybrid method, while still satisfying the theoretical framework for handling non-linear payoffs in a complex capital structure.

- *Common-stock equivalent (CSE) method*. The common stock equivalent (CSE) method values each class of equity on an as-converted basis, considering the number of common stock equivalents represented by each class. This method may also be referred to as the fully-diluted method or as-converted method, and ties to the fully-diluted (postmoney) equity value for the business that is often used in negotiations. The CSE method assumes that there is a de minimis likelihood of an equity value at exit that results in a payoff to the liquidation preferences for the preferred stock; that is, it assumes that the only possible exit scenarios result in either a value (a) \$0 for all equity holders or (b) all equity holders receiving the same amount per share on an as-converted basis. Under this assumption, it would be unnecessary to perform a full SBM.

⁷ For further discussion of nonlinear payoff structures, refer to sections 5.2 and 10.3 in the Appraisal Foundation's Valuations in Financial Reporting (VFR) Valuation Advisory #4: *Valuation of Contingent Consideration* (Valuation Advisory #4).

- *Current value method (CVM)*. The CVM allocates the equity value to the various equity securities in a business as though the business were to be sold on the measurement date. The CVM would be appropriate if the company had an imminent exit event with de minimis uncertainty regarding the exit value and timing. Under this assumption, it would be unnecessary to perform a full SBM.

See paragraphs 6.96–.109 for more detail on these methods.

- 6.21** The remainder of this chapter provides a discussion of these methods. Generally, only one allocation method is used. It would be appropriate for the valuation specialist to use judgment in selecting a reasonable methodology under the circumstances, considering the nature of the enterprise and the characteristics of the specific equity securities being valued, as further described in the next paragraph. If circumstances warrant the additional effort, the valuation specialist may also choose to apply a second method to corroborate the results of the selected method.
- 6.22** The task force recommends that the following criteria be considered in selecting a method for valuing equity securities:
- a. The method reflects the going-concern status of the enterprise. The method reflects that the value of each class of equity results from the expectations that market participants investing in those securities would make about future economic events and the amounts, timing, and uncertainty of future cash flows to be received by the holders of each security.
 - b. The method assigns some value to the *junior securities*, unless the enterprise is being liquidated and no cash is being distributed to the junior securities.
 - c. The results of the method can be either independently replicated or approximated by other valuation specialists using the same underlying data and assumptions. The method does not rely so heavily on proprietary practices and procedures that assurance about its quality and reliability cannot be readily and independently verified.⁸
 - d. The complexity of the method is appropriate to the enterprise's stage of development. Consider, for example, a start-up company with few or no full-time employees and in the early stages of development. A highly complex scenario analysis performed at high cost may not be appropriate for such an enterprise. The assumptions underlying that valuation could be highly speculative, and the variability in the valuation may be correspondingly high. Using a hybrid method (such as a hybrid method that includes a CSE scenario plus an OPM scenario,

⁸ New methods or variants of established methods may still be needed as investors and companies develop new financial instruments or as valuation practice evolves. As always, it is important to use appropriate judgment when estimating fair value, including the use of appropriate judgment when selecting the method and assumptions for the valuation analysis.

with the simpler set of assumptions required for these scenarios) may give equally reasonable results at a lower cost.

Scenario-Based Method (SBM)

- 6.23** A *scenario-based method*, also referred to as a scenario analysis or probability-weighted expected return method (PWERM), is a forward-looking method that considers the payoff to each class of equity across a range of future exit scenarios, discounted to the measurement date at an appropriate rate of return for that class. A scenario-based method can be relatively simple or extremely complex, depending on the number and complexity of the scenarios used to capture the differences in value between the various classes of equity.
- 6.24** In a scenario analysis, the value of the various equity interests is estimated based upon an analysis of future values for the enterprise, assuming various future outcomes. Share value is based upon the probability-weighted present value of expected future investment returns, considering each of the possible future outcomes available to the enterprise, as well as the rights of each share class. Although the future outcomes considered in any given *valuation model* will vary based upon the enterprise's facts and circumstances, common future outcomes modeled might include an IPO, a merger or sale, a dissolution, or continued operation as a private company until a later exit date.⁹ The future exit scenarios and required rate of return would be calibrated to the most recent round of financing, secondary transactions, if applicable, or reconciled to the valuation as of the previous valuation date,¹⁰ considering expected dilution from future financings. Then, to estimate the fair values as of the current measurement date, the calibrated analysis would be adjusted for changes between the transaction date or previous valuation date and the measurement date. The required rate of return for other classes of equity would be assessed considering the relative risk of each class as discussed in paragraphs 3.83 and 6.28.
- 6.25** The SBM involves a forward-looking analysis of the potential future outcomes available to the enterprise, the estimation of ranges of future and present value under each outcome, and the application of a probability factor to each outcome as of the valuation date, consistent with market participant assumptions. The following list is a simple overview of how this method may be applied. The specific construct of the valuation

⁹ As discussed in paragraph 6.07, most private companies backed by financial investors will ultimately seek liquidity through an initial public offering (*IPO*) or sale of the company; therefore, it is typically not appropriate to model a scenario in which such a company remains private indefinitely.

¹⁰ Calibration to a relevant observable transaction is most useful when the measurement date is close to the transaction date. However, even if a substantial period has passed, calibration can be used to ensure the consistency of the unobservable assumptions with the transaction price as of the transaction date and that the evolution of those assumptions over time is reasonable in light of the facts and circumstances at each measurement date. In addition, calibration can be used to ensure that the movement in the valuation between measurement dates is reasonable, even in the absence of a recent transaction. See paragraphs 3.124–.125.

model and the assumptions used will depend on the facts and circumstances surrounding the enterprise.

- a. *Determine the possible future outcomes available to the enterprise.* First, the valuation specialist needs to work with management to determine the range of possible future exit scenarios for the enterprise (for example, IPO, merger or sale, dissolution, or continued operation as a private enterprise until a later exit date). It is important for the valuation specialist to understand the relevant considerations and assumptions that are necessary conditions to achieving each such scenario. For example, if certain interim milestones must be achieved to get to the next round (or rounds) of financing or if certain competitive market conditions or dynamics are assumed to exist in each scenario, those conditions and the probabilities associated with each would be included in the analysis.
- b. *Estimate the future equity value under each outcome, either as a point estimate or range.* The future *equity value* is estimated at the date of each possible future outcome. A simple application might use a single value and date for each outcome, whereas a more complex application might use a range of values and dates for each outcome. At a minimum, the range of outcomes considered should include both high and low values (for example, a high-value strategic sale and a low-value sale of assets). If the range of possible future values considered is too narrow, as discussed in paragraph 6.30, the scenario analysis will not fully capture the value of the upside participation for the preferred and common stock and the value of the downside protection and the impact of differences in seniority and liquidation preferences for the preferred stock. In some cases, it may be appropriate to consider a hybrid approach with a probabilistic distribution of values for a given scenario. For example, if the company is considering a near-term IPO, but the IPO might also be deferred and the company is unsure what exit value it might achieve, it might be reasonable to use specific details for the IPO scenario and a lognormal distribution of future values (such as in the OPM) in the postponed exit scenario, consistent with market participant assumptions. This hybrid approach would also be appropriate in the situation in which the company has a number of possible near-term exits that can be modeled explicitly, but it may also remain private for an extended period of time and does not have good insight into the distribution of outcomes if the exit is delayed (the delayed exit scenario). See the discussion of hybrid methods in paragraphs 6.86–95.
- c. *Allocate the estimated future equity value to each share class under each possible outcome.* Within each scenario, the future values are then allocated to the various shareholder classes based upon the rights afforded to each class, estimating the distributions assuming each class of shareholder will seek to maximize its value. For example, at value levels when preferred shareholders would maximize their return by converting to common stock, conversion is assumed. Conversely, at value levels when return would be maximized by exercising a liquidation preference, such exercise is assumed. The allocation should also include the dilution impacts of any additional required financings for each scenario and any options and warrants that may be exercised, when exercise should be assumed for

a given scenario (with the resulting proceeds added to the equity value) if exercising the options and warrants would be optimal in that scenario. Companies frequently reserve an option pool that includes the options that may be issued to new and existing employees as the company progresses toward a successful liquidity event. In a scenario analysis, it is appropriate to include in the allocation the options that will be needed to reach each exit scenario, along with the cash that would be realized from their exercise prices.

- d. *Weight each possible outcome by its respective probability to estimate the expected future probability-weighted distributions allocated to each share class.* Probabilities are assigned to each of the possible future outcomes, consistent with market participant assumptions, and calibrated to the most recent financing, secondary transactions, if applicable, or reconciled to the valuation as of the previous valuation date. If needed to model the uncertainty in the outcomes, the valuation model may include various sub-scenarios within each outcome, each with its own probability, or it may use a probability function to model a range within each outcome.
- e. *Discount the expected future probability-weighted distributions allocated to each share class to present value using a risk-adjusted discount rate.* The expected shareholder value under each outcome is discounted back to the valuation date using appropriate *discount rates*. The valuation specialist should consider whether different discount rates should be used for each shareholder class, considering the relative risk of each class. The discount rates for each class of equity would typically be calibrated to the most recent round of financing, secondary transactions, if applicable, or reconciled to the valuation as of the previous valuation date, so that the selected probabilities and discount rates are internally consistent.¹¹
- f. *Divide the present value allocated to each share class by the respective number of shares outstanding to calculate the value per share for each class.* The per-share

¹¹ The *discount rate* for the common stock and junior preferred may take into consideration the leverage imposed by the debt as well as the liquidation preferences senior to each class. The weighted average discount rate across all the classes of equity should equal the company's cost of equity. This approach is a form of method 2 of the *expected present value technique* discussed in paragraphs 3.62, 3.80 and 3.83.

In most cases, it would not be appropriate to consider a different discount rate for different scenarios. The selected discount rate for each class of equity would reflect the risk in the weighted average cash flows across all scenarios. This discount rate captures the investors' required rate of return given the uncertainty in the outcomes. An exception to this general guidance would be that in some circumstances, the scenarios modeled in a scenario analysis incorporate a different level of company-specific risk. For example, the IPO scenario may be modeled using aggressive banker projections, but the sale or later exit scenarios may be modeled using more conservative internal projections. In these situations, it may be appropriate to use a moderated projection or to use a lower probability of the aggressive outcome and a higher probability of a more realistic IPO scenario. In situations where that is not possible, another approach would be to include an additional *risk premium* within specific scenarios and to estimate the conditional present value for each instrument before estimating the probability-weighted average. Even in these situations, however, it is important to keep in mind that the selected discount rate for each instrument should reflect the overall required rate of return to the *expected cash flows* for that instrument (that is, a portfolio rate of return).

value of each class of shares, including the common stock, is then calculated. A good check is to compare the share price of the latest round of preferred financing or secondary transactions, if applicable, with the value implied for that share class by the valuation model, to assess whether the assumption set used is reasonable in light of the actual transactions, considering the change in the company and the markets between the transaction dates and the measurement date.

- g. *Consider additional adjustments.* The valuation specialist should consider whether any additional discounts are appropriate (for example, discounts for illiquidity or lack of marketability). See chapter 7 for a discussion of these adjustments.

6.26 Although scenario-based methods focus on the future exit values and their allocation to each class of equity, it is also important to consider the interim cash flows. Often, a scenario analysis approach is used when the company is close to exit and does not plan on raising additional capital.¹² In this case, the interim cash flows would be funded out of existing cash, and the cash considered at the liquidity event would be the expected residual cash. If additional financing is needed to reach the modeled exit scenarios, the capital structure used in the scenario analysis allocation should include both the future payoff amount for the debt (calibrated so that the expected present value of the debt across all the scenarios equals the value of debt for the purpose of valuing equity as discussed in chapter 4) as well as any future rounds of financing the company will need to reach that future exit. Because the details of these future financings are not known long in advance, the use of a scenario analysis for companies that still need one or more additional rounds of financing where the terms are not yet known would require additional assumptions.

Estimated dilution would be incorporated as discussed in appendix A, paragraphs A.07.01–.11, “Dilution.”

6.27 SBM focuses on a range of future exit values allocated to the various equity interests and then discounted to the measurement date. When possible, a best practice is to reconcile the probability-weighted present values of the future exit values to the overall equity value for the enterprise estimated as discussed in paragraph 5.02 to make sure that the overall valuation of the enterprise is reasonable. In a scenario analysis, *calibration* may be used to infer the equity value implied by a recent financing transaction or secondary transaction by considering the future outcomes available to the enterprise as described previously and then estimating the future exit values, the probabilities for each scenario, and the discount rates for the various equity interests such that value implied by the model for the instruments involved in the most recent transaction equals the amount paid. Care should be taken to avoid unrealistic assumptions regarding the return to the

¹² Investors also often use scenario analysis in their deal models when considering new investments, including their expectations about the ultimate exit that the business may achieve in various scenarios along with assumptions about the amount of dilution that would be expected considering the additional capital needed to achieve each exit. See appendix A, paragraphs A.07.01–.11, “Dilution,” for further discussion.

preferred in the dissolution or low-value sale scenarios.¹³ An assumption that the *senior classes of equity* would receive a substantial portion of their liquidation preference back even in the dissolution or low-value sale scenarios should be supported with evidence that the enterprise would have assets that would be saleable or distributable to shareholders upon dissolution even if, for example, cash is exhausted and current development plans are not successful.

Implementation Considerations

6.28 *Discount Rates.* Modeling the discount rates for each class of equity for SBM may be challenging. As discussed in appendix A, paragraphs A.04.01–04.05, “Venture Capital Rates of Return,” the required rate of return and corresponding credit spreads for senior venture capital and private equity debt and debt-like preferred stock is typically consistent with venture capital portfolio rates of return (see paragraph A.04.03) and the corresponding credit spreads.¹⁴ It would then be appropriate to add a credit spread premium for each incremental tier of subordination, considering differences in observed yields for different levels of seniority (for example, based on observed differences in credit spreads for high yield debt). In assessing the credit spread for the liquidation preferences, the valuation specialist may consider market participant perspectives on how much value the preferred stock would expect to recover in a dissolution scenario, the risk of subordination from future financings, and what fraction of the total value would derive from the liquidation preference. The discount rate for the common stock would consider the impact of leverage from the preferred stock liquidation preferences. The discount rate for the equity component of participating preferred would be the same as the common stock discount rate, and the discount rate for the conversion options for convertible preferred would be the same as the discount rate for the corresponding warrant on the common stock. One approach for estimating these discount rates would be to discount the future equity value in each scenario at a risk-adjusted discount rate that results in an reasonable overall present value of equity considering the weighted average across the scenarios, typically based on VC portfolio rates of return and ideally supported by calibration, and then consider the difference in leverage to estimate an appropriate discount rate for each class of equity.

6.29 *Time to liquidity.* An advantage of a scenario analysis approach is that the different scenarios may consider earlier and later liquidity events. The timing of exit for each scenario should be supported by company-specific plans as well as venture capital data,

¹³ VC data indicates that the average return to the investors in exits when the investor interests receive a return less than or equal to their original investment is between 10% and 15% of invested capital, depending on the round of the investment, and that the investors receive no value in approximately 35% to 50% of these exits. Therefore, when reconciling to a recent financing round in a scenario-based framework, the upside scenarios must have a high enough return to offset these downside scenarios. See, for example, Andrew Metrick and Ayako Yasuda, *Venture Capital and the Finance of Innovation*, 3rd edition (Hoboken, NJ: John Wiley & Sons, Inc., 2021).

¹⁴ The required rate of return for risky investments may be considered as a risk premium or credit spread in excess of the risk-free rate. Thus, when interpreting historical data on venture capital and private equity rates of return, it would be appropriate to adjust for the difference in risk-free rates between the measurement date versus the historical period referenced.

as available. In particular, since most venture-backed enterprises will not complete a low value exit if there is still cash available to pursue a better outcome, it would not be appropriate to assume that in an unsuccessful scenario the preferred stock would receive the return of a significant fraction of their invested capital, or that unsuccessful exits occur more quickly than successful exits.

- 6.30** *Volatility.* In the scenario-based method, the volatility of the outcomes is not used as an input, but rather may be inferred from the distribution of equity values across the various scenarios. Care should be taken that the distribution of returns captures the full range of downside and upside scenarios and the values of the securities implied from the valuation model reconcile to the most recent round of financing, secondary transactions, if applicable, or to reconcile to the valuation as of the previous valuation date. An important check is to confirm that the volatility implied by the selected scenarios is consistent with the volatility that would be expected for the business, considering the observable volatilities for the selected guideline public companies adjusted for size and leverage. See appendix A, paragraphs A.11.01–.09, “Estimating Volatility for Privately-Held Companies,” for further discussion.
- 6.31** *Application for Early-Stage Companies.* Because future outcomes need to be explicitly modeled, scenario analysis is generally more practical when the time to a liquidity event is short, making the range of possible future outcomes relatively easy to predict. Investors also often use scenario analysis in their deal models when considering new investments. Another variant of scenario analysis that is sometimes used for earlier-stage companies, is to consider the exit values on a per-share basis relative to the latest financing round (for example, considering the probabilities of achieving no return, less than 1 times the return, up to 1.5 times the return, up to 2 times the return, 2–5 times the return, 5–10 times the return, and 10 times the return or more), discounting at an appropriate rate as discussed in paragraphs 3.83 and 6.28 and calibrating to the most recent or expected transaction. Data on the distribution of exit multiples for early-stage ventures by round of financing is available.¹⁵ Another approach that has many of the advantages of scenario analysis and may be more practical for earlier-stage companies is a hybrid method that considers the expected equity value in various scenarios but that uses OPM to allocate the value within each of those scenarios. See paragraphs 6.86–.95.
- 6.32** *Calibration or Reconciliation to Recent Transactions or Valuations as of Previous Valuation Dates.* Another important consistency check is that the valuation model indicates values for the various classes of equity that are calibrated to the most recent preferred stock financing or secondary transactions, if applicable, or reflect a reasonable trend in values given the changes in the company and the changes in the markets between the previous valuation date and the measurement date. In situations where the secondary transactions are not regarded as the sole basis for the valuation (see chapter 8 for discussion), it still would be appropriate to ensure that the difference between the model values and the transaction prices is reasonable and that the valuation specialist can quantitatively or qualitatively explain the reasons that market participants in the

¹⁵ See footnote 13 in paragraph 6.27.

secondary market would pay a significantly different price than the model value. In particular, if the model indicates that the value of the securities is substantially lower than the transaction prices in the secondary market, that may be an indication that the model value is not reasonable.

Example – Biotech planning to IPO

- 6.33** A biotech company hopes to complete an IPO in the near-term, and raised \$500 million in Series D financing at \$10 per share, reflecting a \$2 billion postmoney valuation. Previous rounds included \$100 million in Series C at \$4 per share, \$50 million in Series B at \$2 per share and \$50 million in Series A at \$1 per share. The company also had 50 million shares of common stock outstanding. All of the preferred are convertible, not participating, and each successive round is senior to the previous round. In the context of this guide, in general, the goal of the valuation will be to estimate the value of the common stock underlying stock-based compensation awards. If there are no transactions in the common stock, the valuation as of the financing date will be calibrated to the transaction price in the latest financing. Thus, this example presents a scenario analysis calibrated such that the value of the Series D is equal to \$10 per share, considering the weighted average across several different scenarios.

Capital Structure	Number of Shares	Purchase price	Liquidation preference	Seniority
Class A	50,000,000	1.00	50,000,000	4
Class B	25,000,000	2.00	50,000,000	3
Class C	25,000,000	4.00	100,000,000	2
Class D	50,000,000	10.00	500,000,000	1
Common Stock	50,000,000			
Total	200,000,000		700,000,000	

Future Scenarios	Weight	Value (millions)	Time (years)
Short term IPO	25%	3,000	0.75
Delayed IPO	25%	2,500	1.50
Wait -- downside	25%	300	3.00
Wait -- upside	25%	6,000	3.00
Weighted average		2,950	

Implied volatility	49.2%

Future Scenarios	Weight	Class D (per share)	Class C (per share)	Class B (per share)	Class A (per share)	Common (per share)	Overall equity (millions)
Short term IPO	25%	15.00	15.00	15.00	15.00	15.00	3,000
Delayed IPO	25%	12.50	12.50	12.50	12.50	12.50	2,500
Wait -- downside	25%	4.21	1.69	0.84	0.42	0.10	300
Wait -- upside	25%	30.00	30.00	30.00	30.00	30.00	6,000
Weighted discounted value		10.00	9.39	9.14	8.99	8.80	1,853
Implied volatility		35.8%	47.4%	53.8%	58.8%	65.8%	49.2%
Discount rate (annual)		23.6%	25.5%	26.5%	27.3%	28.5%	25.8%

The implied volatility is calculated using the formula for the weighted standard deviation, with an adjustment considering the term for each scenario:

$$\sigma^2 = \sum_{i=1}^N w_i (x_i - \mu)^2$$

Where:

$$\sigma^2 = \text{variance}$$

$$w_i = \text{weight of each scenario}$$

$$x_i = \text{time weighted return in each scenario}$$

$$\text{calculated by adjusting the return by dividing by term}$$

$$\mu = \text{weighted average return}$$

The discount rate for the Series D is calibrated to the purchase price of \$10, considering the payoffs to the D in each case. In the downside case, the value is allocated to each preferred class based on their pro-rata portion of the total liquidation preference, and a small residual amount to the common for modeling purposes to avoid dividing by zero. The volatility for each class is calculated based on their specific payoff, using the formulas noted above. The ratio of the volatilities is then used to adjust the calibrated discount rate for each class.¹⁶

Advantages and Limitations

- 6.34** The primary virtues of the scenario-based method are its conceptual merit and alignment with the way that market participants consider these investments. The scenario-based method explicitly considers the various terms of the shareholder agreements, including various rights of each share class, at the date in the future that those rights will either be executed or abandoned. The scenario-based method is forward looking and incorporates expectations about future economic events and outcomes into the estimate of value as of the present. The scenario-based method is not simply a static allocation among

¹⁶ This “bottom up” approach for estimating discount rates for levered payoffs is outlined in VFR#4, section 5.2. See appendix A, paragraphs A.10.01–.03, “Estimating Differential Discount Rates Depending on the Risk for Each Security Using CAPM,” for additional details about the specific implementation considered here.

shareholders of a single estimate of the enterprise's value as of the present. Finally, if the scenarios are constructed using rational expectations and realistic assumptions and calibrated to any recent transactions, the relative equity values for each class of equity that result from these methods are typically not overly sensitive to changes in the probability estimates, except when one of the possible outcomes is assigned a very high probability.

- 6.35** When a scenario-based method is considered for valuing the stock-based compensation awards themselves (for example, common stock options or profits interests) or for valuing warrants or other instruments with option-like payoffs, it will be important to consider the degree of uncertainty within each scenario. If there is significant uncertainty in the scenario outcomes (for example, if the timing or value that will be realized for the instrument in that scenario is still uncertain), then it will be necessary to use a Black Scholes, Monte Carlo simulation, lattice model or other variant of an OPM within each scenario, to capture the upside potential for the instruments with option-like payoffs. For example, if the SBM includes a sale scenario at \$10 per share in 3 years where the options are expected to be cashed out at the sale, the valuation of the stock options in that scenario would be measured using a Black Scholes model considering the present value of the underlying common stock in that scenario (\$5.50), the strike price (contractual), the term in this scenario (3 years), the volatility and the risk-free rate. Other scenarios where the options would survive the liquidity event would consider a longer term.¹⁷ Alternatively, the options may be valued using a single Black Scholes model considering an overall expected life and an appropriate volatility across all the scenarios and using the concluded common stock value as the stock price input. Note, however, that if the exit scenarios still have significant uncertainty, it would likely be more appropriate to use a hybrid method or OPM to value the security underlying the stock-based compensation awards (that is, the common stock) as well, rather than using SBM. The need to consider uncertainty within each scenario adds additional complexity to the scenario-based method.
- 6.36** The primary limitation of the scenario-based method is that it can be complex to implement and requires detailed assumptions about potential future outcomes. It may be difficult to estimate the probabilities of occurrence of different events, the dates at which the events will occur, and the values of the enterprise under and at the date of each event.¹⁸ The scenario-based method may involve complex construction of probability

¹⁷ Another situation where the expected term of the stock-based compensation awards themselves would not match the expected time to liquidity would be profits interests in an LLC that is planning an IPO where the LLC will survive the IPO, such as an Up-C IPO. Up-C IPOs are generally structured so that the investor units in the LLC may be converted into shares of the public company at the holder's election after the IPO has been completed. The profits interests may also have the right to exchange into public company shares or may be modified to provide this right, or if an exchange right is not provided, the profits interests may have the right to participate only after the investors exit. The valuation of such profits interests should consider the expected term to settlement of the profits interests and the volatility over this expected term, even if the Up-C IPO transaction is imminent.

¹⁸ Note that a hybrid model that uses an option pricing framework within each exit scenario or a simulation model might be used to take into account the variability of each of these inputs. This approach provides advantages of the scenario-based framework while still capturing a full distribution of outcomes. See paragraphs 6.86–95.

models and might depend on management assumptions. Furthermore, it may be difficult to estimate an appropriate discount rate for each security. To the extent possible, calibration should be used to mitigate these issues.

- 6.37** In short, the attributes of the scenario-based method make it conceptually attractive, but it may be challenging to implement.

The Option Pricing Method

- 6.38** The OPM is an allocation method that considers the current value of equity and then allocates that equity value to the various classes of equity considering their rights and preferences. The OPM treats common stock and preferred stock as call options on the enterprise's equity value, with exercise prices (breakpoints) based on the liquidation preferences of the preferred stock, participation thresholds and caps, option/warrant strike prices, or other enterprise values at which benefits of ownership may shift between different securities or shareholders. Under this method, common stock has value only if the funds available for distribution to shareholders exceed the value of the liquidation preferences at the time of a liquidity event (for example, a merger or sale), assuming the enterprise has funds available to make a liquidation preference meaningful and collectible by the shareholders. The common stock is modeled as a call option or set of call options that gives the owner the right, but not the obligation, to buy the underlying equity value at a predetermined exercise price. In the valuation model, the exercise price is based on a comparison with the equity value rather than, as in the case of a "regular" call option, a comparison with a per-share stock price. The OPM has typically used the Black-Scholes model to price the call options at each breakpoint.¹⁹
- 6.39** The OPM considers the various economic terms of the stockholder agreements that would affect the distributions to each class of equity upon a liquidity event, including the level of seniority among the classes of equity, dividend policy, conversion ratios, and cash allocations. In addition, the method implicitly considers the effect of the liquidation preference as of the future liquidity event, not as of the valuation date.

Equity Value (or Allocable Value) Input for OPM

- 6.40** One of the critical inputs into the OPM is the total equity value for the enterprise. As discussed in chapter 5 and chapter 7, this total equity value should be measured considering the cash flows under current ownership and the investors' required rate of return. This basis of valuation provides an indication of value for the equity securities that considers the degree of control and marketability for the securities held by the investors who in aggregate have control of the business, providing a consistent basis for

¹⁹ Option valuation methodologies are constantly evolving, and readers should be alert to which methodologies are considered preferable to others under various sets of facts and circumstances. Examples of option valuation methodologies that differ conceptually from the Black-Scholes model include path-dependent or lattice models, such as Monte Carlo simulation or binomial lattice models. These types of approaches are used when valuing instruments whose value depends on the evolution of the value of the company at interim periods (for example, instruments with antidilution provisions or down-round protection).

comparison with the liquidation preferences for the preferred stock. Because the liquidation preferences for the preferred stock provide a threshold level of return for the investors before the common stock begins participating, option pricing models that treat liquidation preferences as a strike price should take as their input the enterprise value that is consistent with the investors' required rate of return.

- 6.41** Unlike the SBM that explicitly estimates future exits, the OPM begins with the current equity value and estimates the future distribution of outcomes using a lognormal distribution around that current value, allocating the value to the current capital structure. Therefore, the equity value input used in the OPM should not just consider the present value of the payoff expected at the liquidity event but should also incorporate the present value of the expected interim cash flows. For example, in a discounted cash flow analysis, the cash flows in each period would reflect the revenues and costs in that period. For early-stage companies, these cash flows are typically negative for several periods, reflecting the company's investments in growth. If additional financings will be required to cover those negative cash flows, it may be appropriate to consider whether those additional financings will impact the relative allocation of value among the current equity securities, as discussed in paragraph 6.48.
- 6.42** Although it is possible to use an OPM to allocate the total enterprise value among debt-like instruments in addition to preferred stock and common stock, the task force recommends estimating the allocable value by first subtracting the value of any third-party debt that was negotiated separately,²⁰ as well as the measurement date fair value of any convertible bridge notes or *simple agreements for future equity (SAFEs)* that will be settled in the next round of financing (unless the expected issue price and the terms of the next round can be estimated and the convertible bridge notes or SAFEs can be included considering the shares they will receive upon conversion). The residual allocable value, including the equity securities plus any remaining debt-like instruments (those issued to *related parties* with a term as long or longer than the time to liquidity), would be allocated using an OPM. If needed, adjustments may be made to the values allocated to the debt-like instruments and preferred stock liquidation preferences to capture the additional risks on the downside, as discussed in paragraphs 6.54(d) and 6.60.
- 6.43** In some cases, it may be appropriate to consider more than one scenario and run the option pricing model in one or more of those scenarios. For example, it may be appropriate to include a common-stock equivalent (CSE) scenario to represent earlier exits where either preferred converts to common (IPO or high value sale) or neither preferred nor common recover any value (dissolution), along with a delayed exit scenario using the OPM to represent later exits where the investors choose to sell the company or its assets even if the value has not appreciated as originally hoped. In other situations, if the payoff for the securities varies depending on a future event (for example, if the preferred stock is a participating preferred that has the right to both its liquidation preference and upside participation in a sale but is forced to convert upon a *qualified IPO*), considering more than one scenario would be appropriate to capture the difference

²⁰ See chapter 4, "Value of Debt for the Purpose of Valuing Equity."

in the rights of the securities. Another example in which this approach can be helpful is when a new financing round is being negotiated, but the price depends on whether the company achieves certain milestones. See the discussion of hybrid methods in paragraphs 6.86–95.

- 6.44** In an OPM framework, calibration may be used to infer the equity value implied by a recent financing or secondary transaction by making assumptions for the time to liquidity,²¹ volatility, risk-free rate, and other inputs as needed, and then solving for the value of equity such that value implied by the OPM for the most recent financing or secondary transaction, if applicable, equals the amount paid. This method is most appropriate when the financing transaction is an orderly, negotiated transaction that reflects fair value and is *pari passu* with previous rounds, although even in such cases, it will be important to consider the implied credit spread on the preferred stock liquidation preferences to ensure that it is consistent with market participant assumptions. If the preferred stock transaction is distressed, has seniority over prior preferred stock rounds, or lacks the non-economic rights and control features that investors typically expect (especially if it does not have the right to force an exit), it would be appropriate to use an alternative method or to make adjustments to avoid overstating the value of the downside protection when calibrating. See paragraphs 6.46–48 for a discussion of other key assumptions used in the OPM, paragraphs 6.50–54 for a discussion of variants of the OPM, paragraphs 6.55–60, 6.64–68, 6.69 and 6.71–72 for examples of these variants, and paragraphs 8.56–67 for a discussion of various types of transactions that may be considered in inferring the equity value and the value of related equity securities in an enterprise.
- 6.45** Note that the calibrated equity value implied in an OPM framework will typically be lower than the equity value on a CSE basis, because the OPM framework considers the full value of the downside protection associated with the preferred stocks' liquidation preferences using a lognormal distribution assuming that the company will exit at a fixed point in time, whereas the CSE value calculation assumes that all equity interests in the capital structure have the same pro rata value. Either the OPM calibration approach or CSE approach may be used for estimating the enterprise value to be used as an input for estimating the fair value of the securities in the enterprise, depending on the facts and circumstances and considering the extent to which market participants attribute value to the liquidation preferences for the preferred stock. However, the methodology used for estimating the enterprise value and the methodology used for allocating the enterprise value must be internally consistent. Using a CSE value and allocating it using an OPM, or vice versa, will yield nonsensical results.

²¹ The time to liquidity to be considered in the OPM is the term at which the investors who in aggregate have control of the business would choose to sell, even if the value has not appreciated as hoped (or been forced into dissolution) at an earlier date. For companies that are backed by PE or VC investors, the term may be estimated considering the remaining life of the fund, when the investors would be contractually obligated to return capital to their limited partners. The time to liquidity used in the OPM represents the term over which the *enterprise value* may evolve before the payoffs to the various classes of equity are resolved. Please see paragraph 6.46 for further discussion.

Other Key Assumptions Used in the OPM

- 6.46 *Timing of the Liquidity Event.*** In most implementations, the OPM assumes that the timing of the liquidity event is fixed and independent of the equity value.²² In many cases, however, the investors' decision about whether or not to have a liquidity event depends on the equity value at the decision date and the investors' view of the future potential for the business at that point in time. Short term exits may reflect more extreme outcomes: seeking a high value IPO or sale as soon as the company is ready and markets permit, or winding up the business if it is unable to raise additional financing and runs out of cash. Because the OPM assumes that the company will exit even at middle values where investors might instead choose to wait, using a fixed time to liquidity based on the probability-weighted expected term including earlier exits may overstate the value of the downside protection for the preferred stock.²³ Therefore, the time to liquidity to be considered in the OPM is the term at which the investors who in aggregate have control of the business would choose to sell even if the value has not appreciated as hoped (or been forced into dissolution). For companies that are backed by PE or VC investors, the term may be estimated considering the remaining life of the fund, when the investors would be contractually obligated to return capital to their limited partners.
- 6.47 *Volatility.*** Early-stage companies are more volatile than their larger, more diversified peers; however, since volatility for private companies is not observable, the volatility used in the OPM is typically based on the observed volatilities for guideline public companies. This approach may understate the volatility for many private companies, since public companies are typically less sensitive to the success or failure of any specific product or market. Adjusting the volatility to better capture the wide range of returns for early-stage companies may better reflect the risk associated with the preferred stock liquidation preferences. In other cases, it may be appropriate to model a multimodal distribution, where the business would experience jumps in value upon reaching (or failing to reach) key milestones. For example, for pre-commercial biotech companies, the value of the enterprise will jump (or fall significantly) based on progress through clinical trials. Using a single OPM model does not consider these jumps. For these types of enterprises, a hybrid model as discussed in paragraphs 6.86–.95 may be a more

²² It would be possible to use a simulation-based implementation of the OPM to simulate the equity value through various future financings and the ultimate liquidity event assuming that the liquidity event will occur when the equity value is high (successful exit) or low (dissolution / low value exit), but that if the equity value is between these extremes, the investors will wait to exit until markets are more favorable. This approach would capture the interdependence between the valuation and the timing of exit that is expected for many privately held companies, but would require additional assumptions and would add significant complexity. A hybrid method or other model that captures expected jumps in value would still be needed to capture the more bimodal nature of the exits.

²³ For a company with convertible preferred stock, the preferred and common stock receive the same cash flows (or nearly the same cash flows) both in high value exits where the preferred converts and in dissolution when there is no value (or little value) to return to either the preferred or common. Therefore, the value of the liquidation preferences derives from middle value exits where the preferred stock receives all or some of its liquidation preference and common receives little or nothing. Overstating the likelihood of these middle value exits by assuming that the investors will exit early irrespective of the company value or using a volatility or expected term that does not reflect the full dispersion of outcomes will thus overstate the value of the preferred stock liquidation preferences.

appropriate approach.²⁴ As the volatility increases, the indicated value of the common and preferred stock become more similar (the results for convertible preferred would be similar to a CSE allocation). See appendix A, paragraphs A.11.01–.09, “Estimating Volatility for Privately-Held Companies,” for further discussion.

- 6.48** *Risk to the senior securities considering the potential for changes to the capital structure prior to the liquidity event.* In a traditional OPM, the OPM assumes that the capital structure will be the same at exit as it is at the measurement date. However, if the company will need to raise capital prior to exit, the new financing would cause the capital structure to change. In some instances, the changes in the capital structure may subordinate the current *senior securities*, increasing their risk. See paragraph 6.54 for various approaches that capture this risk.

Assessing the OPM Assumptions in Aggregate

- 6.49** To ensure that the OPM assumptions are reasonable, the valuation specialist may consider the following:
- a) Consider the implied credit spread²⁵ on the liquidation preference and the percentage of the value of the preferred attributable to the liquidation preferences. If the credit spread is lower than the credit spread that would be appropriate for a subordinated debt or debt-like preferred instrument considering the company’s financial metrics and stage of development,²⁶ or if the percentage of the value of the preferred attributable to the liquidation preferences is not consistent with market participant assumptions, the OPM implementation may not appropriately reflect the limited recovery that investors would expect on their investment in a downside scenario. Therefore, the model understates the risk that investors face. Allocating too much value to the downside protection for the preferred stock when calibrating in turn leads to allocating too little value to the upside conversion option, resulting in an inappropriately low equity value and a correspondingly understated value for the common stock. A longer term to liquidity may reflect the investors’ ability to ride out a downturn. A higher

²⁴ In cases where the recovery for preferred on the downside is expected to be low, a hybrid approach or scenario analysis showing a multimodal distribution would indicate that the common stock value is a higher percentage of the preferred stock value than a standard OPM model.

²⁵ See paragraphs 6.55–.57 for examples showing how to calculate the implied credit spread on the preferred stock liquidation preference.

²⁶ If the company has other debt, it may be possible to estimate a credit spread for the preferred stock liquidation preferences by calibrating to the credit spread implied by the debt financing or traded prices for the debt, adjusting for changes in the company or changes in the market between the transaction or traded price date and the measurement date, and then adjusting for subordination considering the difference in seniority between the observed debt and the preferred stock. If the company does not have other debt, it may be appropriate to perform a synthetic credit rating and adjust for subordination, or to refer to PE/VC rates of return if appropriate. See chapter 4 and appendix A, paragraphs A.04.01–.04.05, “Venture Capital Rates of Return,” for further discussion. Estimating the appropriate credit spreads may be challenging; see paragraph 6.54(d) for additional discussion.

volatility or use of a hybrid model may more appropriately reflect the distribution of outcomes.

- b) Consider the potential effect of an additional financing on the value of the preferred liquidation preference. If management expects the company to require additional equity capital prior to a liquidity event, it may be appropriate to consider the potential impact of the additional financings on the value of the liquidation preference of the current preferred. If the additional preferred shares are expected to rank senior to the existing preferred shares, the senior liquidation preference may depress the value of a junior liquidation preference. Raising additional capital also may extend the time to liquidity.

Standard valuation practice is to incorporate additional financings in the analysis explicitly to the extent that the terms are known or knowable as of the measurement date. Even if the terms of any additional financings are not known or knowable, however, market participants transacting in the preferred stock would consider whether the company is likely to need additional capital when assessing the relative value of the downside protection (liquidation preference) vs upside participation (participation or conversion rights) to their overall investment. Therefore, it is important to consider this impact when calibrating to a preferred stock financing transaction.

- c) Consider objective evidence supporting the assumed time to liquidity. Such evidence may include the contractual life of the investment fund or studies of observed holding periods for venture investments.
- d) Compare the OPM allocation to the investors' goals and expectations. In most venture investments, the investor is motivated to achieve a favorable return, the "upside." If the OPM allocates most of the value of the preferred security to the liquidation preference (the downside), the result may be inconsistent with the way that market participants would value the investment. It may be appropriate to explicitly consider a scenario analysis or hybrid method to capture any expected jumps in value.
- e) Compare the OPM allocation to management's expectations. If the OPM allocates most of the value of the preferred security to the liquidation preference, but management expects to take the company public, the OPM result may be inconsistent with market participant assumptions. One approach for addressing this issue would be to consider a hybrid method with a CSE scenario. Typically, in an IPO, the liquidation preference is eliminated, and the preferred stock is automatically converted to common. Therefore, when an IPO is the expected exit strategy for the business, especially once the company has transparency into the steps needed to achieve the IPO (as would typically be the case when the company is around two to three years from the IPO), it is likely appropriate to consider some weight on the CSE scenario. At earlier stages of development, the CSE scenario may be used to incorporate not only the possibility of high value exits where the preferred converts, but also the possibility of dissolution with little

to no recovery for the preferred stock liquidation preferences. The time to liquidity in the OPM would reflect the delayed exit scenario when the investors who in aggregate have control of the business would choose to sell, even if the value has not appreciated as hoped and even if the company has not been forced to exit early at a low value due to lack of funds.

- f) Compare the OPM allocation to secondary transactions in the company's stock. If the concluded value of the common stock from the OPM is significantly lower than the value allocated to the latest preferred stock from the OPM, but preferred and common shares are selling at similar prices in secondary transactions, the OPM may be overstating the value of the liquidation preference as compared with market participant assumptions. If these transactions are occurring with expectations of an IPO or with expectations that the distribution of future values would be bimodal, the valuation specialist may consider a hybrid method with a CSE scenario.²⁷ The time to liquidity in the OPM would reflect the delayed exit scenario when the investors who in aggregate have control of the business would choose to sell even if the value has not appreciated as hoped and even if the company has not been forced to exit early at a low value due to lack of funds. Please see chapter 8 for additional discussion on secondary transactions.

Variants of the OPM

6.50 The OPM was designed to model option-like payoffs, such as common stock, capturing the value of the potential upside for an asset above a specified threshold. It also is an appropriate method for estimating the value of a highly levered debt or debt-like preferred instrument, where the debt-like instrument receives a specified payoff when the asset value exceeds that payoff, or the debt-like instrument receives the asset if the asset value is not high enough to meet the specified payoff. In this case, the value of the debt-like instrument can be measured as the total value of the assets less the value of the upside option. However, as discussed in the following paragraphs, the OPM and other structured models that estimate the payoff to the various classes of equity following the strict contractual terms of the *waterfall* at the fixed timing of a liquidity event may not be ideal for estimating the value of the liquidation preferences for preferred stock in some

²⁷ Note that it is possible to explicitly model both the IPO or high value sale scenario (high value CSE scenario) as well as a dissolution scenario where the preferred receives little to no recovery (low value CSE scenario). In this approach, the valuation would consider the present values of the preferred and common shares in each scenario (high value and zero value), would use the OPM to capture the delayed exit scenario where liquidation preferences may matter, and finally would estimate the weighted average across the three scenarios to estimate the fair value of each class of equity. However, it may be challenging to estimate the weightings for the high value exit vs. dissolution scenarios. Instead, it is possible to consider a hybrid method with a single CSE scenario where all shares have the same value, reflecting the extent to which market participants are considering the shares on a CSE basis, and a single delayed exit OPM scenario, reflecting the extent to which market participants expect that liquidation preferences may matter. In this approach, the value of the preferred stock would typically be the same in the CSE scenario and the OPM scenario and would be calibrated to the latest or pending preferred stock financing, adjusting for changes in the markets and changes in the company between the financing date and the measurement date.

situations, especially when considering the relative value of senior and junior preferred classes.

- 6.51** One challenge with the way that the OPM has typically been applied is that in most applications, the OPM does not take into account the right and ability of preferred shareholders to control the timing of exit (that is, to sell the enterprise or take the enterprise public earlier or later than anticipated), which can overstate the likelihood of middle value exits and understate the likelihood of high and low value exits. Another challenge with the way that OPM has typically been applied is that in most applications, the OPM assumes that any future financings will have no impact on the allocation of value between the debt-like liquidation preference and the upside; however, new senior financings can change the allocation of value between the debt-like claim and the upside for existing classes of preferred stock. The potential for changing the timing of exit depending on the evolution in the equity value or for raising future financing would most appropriately be modeled using a lattice or simulation model; however, estimating the assumptions for such a model may not be feasible.
- 6.52** In practice, the investors in the preferred stock have influence over the enterprise's operations and the timing of exit.²⁸ Rather than simply allowing the value of the company to evolve through a predetermined exit date, as is assumed in the traditional OPM, the investors may delay exits when the timing is not favorable. For example, if the company originally hoped to complete an IPO in two years, but the IPO "window is closed" at that time, the company would typically postpone the IPO. In addition, investors may manage the company's capital structure and financing needs through downturns, perhaps taking the opportunity to invest more capital or buy out *senior security* at a low valuation. Furthermore, in a low-value sale exit or bankruptcy scenario, even though each tier of seniority has its own interests that may be at odds with the other tiers, all the investors have an incentive to negotiate to achieve the best exit possible — the longer the enterprise languishes before finding a buyer, the lower the value that will be realized. Because the size of the pie is not static, the holders of the senior preferred may maximize their return by offering to share value with the junior preferred, rather than insisting on strictly following the waterfall. The traditional OPM does not model any of these dynamics.²⁹
- 6.53** When using the OPM to value securities in enterprises in which the preferred classes of equity have different levels of seniority or where the enterprise may need additional financing before the liquidity event, a valuation specialist may consider which class or classes of equity in aggregate have control of the timing of exit and decisions regarding

²⁸ Note that even though the venture capital or private equity investors typically in aggregate have control over the timing of exit for their portfolio companies, there may be practical limits as to how long they can hold their investments, due to factors such as the life of the funds or other requirements to return capital to their limited partners. Please see paragraph 6.46 for further discussion.

²⁹ Note that for valuation purposes, it would generally be appropriate to assume that any allocation of proceeds from a sale or IPO would follow the contractual terms of the agreements, unless market participants would make a different assumption. However, the valuation should also consider the risks associated with those cash flows. See paragraphs 6.92–93 for an example.

future financing rounds and assessing the company's strategies and the extent to which the liquidation preferences will affect the value that may be realized for each class of equity at the liquidity event. However, determining the specific characteristics of future financings may be challenging. Therefore, it will be important to apply a methodology that appropriately considers the value of both the liquidation preferences and the upside participation for each class of equity and is also supportable via information available at the time and consistent with market participant assumptions.

6.54 Considering these factors, a valuation specialist could select one of several variants of the OPM to model the values of the preferred classes and the corresponding value of the common stock:

- a) *Traditional closed-form option pricing method*: If the investors have a fixed maximum time horizon (such as the life of the fund holding the investment) where they will exit irrespective of the evolution in the equity value and market participants would attribute value to the liquidation preferences on that basis, it may be appropriate to apply a traditional closed-form OPM using that maximum time horizon as the time to liquidity and considering a volatility appropriate to the business given its stage of development.

Pros of this method include:

- Has been used for many years; companies, valuation specialists, auditors and users of financial statements understand what to expect from this method.
- Relatively simple to implement.
- Requires few significant assumptions that are relatively easy to support.

Cons of this method include:

- May be difficult to estimate the appropriate term to use in the OPM, since company management may be confident that the company will exit as planned; however, if the valuation specialist uses a time to liquidity in the OPM that is based on the shorter time to exit that management expects, the OPM would not capture situations where the company may delay the exit if market conditions are not favorable or where the company does not progress as hoped, if applicable.
- Does not capture situations where future financings would be expected to subordinate the latest round of preferred stock.
- May imply a credit spread for the liquidation preferences for the preferred stock that is not consistent with other indications of market participants' required rate of return for debt-like preferred stock.

- b) *Simulation method*: If the investors will choose the exit strategy and timing depending on the company's progress and on market conditions, or if the enterprise may need additional financing to reach a successful exit, then it may be appropriate to use a simulation analysis. The simulation analysis would model the company's exit strategy, considering the investors' ability to choose the timing of

exit depending on the evolution of the value of the enterprise. It would also include any additional financings needed, capturing the likely characteristics of the financings depending on the evolution of the value of the enterprise.

Pros of this method include:

- Addresses the issue of the interdependency between the equity value and the timing of exit.
- Reduces the likelihood of overstating the value of liquidation preferences (a limitation of other methods).
- Provides flexibility to consider multiple possible outcomes and model more detailed scenarios of the company's evolution, including assumptions regarding the exit strategy considering the company's specified criteria, e.g. *multiple of invested capital (MOIC)* or target equity value, or on the downside, equity values at which the investors would decide to exit early to avoid the possibility of further declines.
- Accurately captures capital structure at exit.
- May more accurately represent real world scenarios.

Cons of this method include:

- Relatively high cost and complexity; challenging to implement.
- Requires several significant judgmental assumptions, such as the thresholds of value at which exit may occur, the size and seniority of subsequent rounds, and so on, which may be difficult to estimate and validate, making the analysis difficult to audit.
- Not consistent with the methods used by venture capital or private equity investors when making investment decisions.
- Not widely used, so no track record demonstrating reasonable results.
- Results are largely driven by the longest possible holding period assumed in the simulation framework; therefore, using a traditional OPM with a longer holding period may provide similar values without requiring the more complex analysis.

- c) *Hybrid method (CSE and traditional closed form OPM)*: Another alternative would be for the valuation specialist to use a hybrid method as described in paragraphs 6.86–.95, considering various scenarios and using the OPM framework in certain scenarios as applicable. In particular, market participants may place especially little value on liquidation preferences for early-stage companies, where there would be little recovery for the preferred in a dissolution, or for high performing middle or later-stage companies, where market participants may assume that the business will exit on a common-stock equivalent (CSE) basis. For scenarios where OPM is used, it is still necessary to use reasonable inputs as discussed previously.

Pros of this method include:

- Venture capital investors often rely on “premoney” and “postmoney” nomenclature and logic, which is captured by a CSE scenario. Therefore, including a CSE scenario may be consistent with the investors’ assumptions.
- Introducing the CSE scenario allows the valuation to incorporate the extreme upside and downside events, which an investor in an early-stage company will likely consider.
- Allows for adjustments for the weighting applied to liquidation preferences of preferred shares via the inclusion of a CSE scenario.
- Provides flexibility to capture various exits that an OPM on its own does not capture.
- Implied credit spreads are in line with the expected credit spreads of debt-like preferred securities in private companies.
- Widely utilized methodology; relatively easy to implement.

Cons of this method include:

- The CSE scenario may ignore or incorrectly model the relative values of options and issued shares.
- Requires judgmental assumptions regarding the scenarios, scenario weightings and scenario terms that may be hard to estimate and to validate, making these assumptions difficult to audit.
- Market participants may place little value on the liquidation preference in early-stage companies; however, venture investors consistently negotiate for the protection of a liquidation preference, implying that the liquidation preference must have some value. A stand-alone CSE scenario is not consistent with the contractual terms of the securities in the company’s capital structure.
- The CSE scenario assumes that the business will either be highly successful or fail with no return to the liquidation preferences, which may focus too much on a narrow band of outcomes that contradict the business outlook on the company performance through exit.

- d) *Debt-like preferred plus upside method*: The liquidation preferences for the preferred stock, considered as stand-alone instruments, are equivalent to debt-like preferred stock. Therefore, the value of the liquidation preferences estimated in the allocation model should be consistent with the value of a stand-alone debt-like preferred stock.

One method for allocating value between the liquidation preference for each class of equity and the participation or conversion rights is to model the value of the liquidation preference outside the OPM using a debt-like preferred plus upside method, using the yield method or other appropriate method to value the liquidation preferences (debt-like preferred) and using the residual equity or

conversion option to value the equity component (upside). The value per share for participating preferred stock would simply be the value of the debt-like liquidation preference, plus the value of a share of common stock.³⁰ The value per share for convertible preferred stock would be the value of the debt-like liquidation preference, plus the value of the conversion option into common stock. Some models also include an adjustment to treat the liquidation preference (which acts as the strike price for the conversion option) within a risk-neutral framework on the upside, or to treat the as-converted value of the underlying stock as risk-neutral and consider only the downside protection (the put value) in excess of this as-converted value to be risky. The volatility for the underlying common stock would be measured including the leverage impact from the preferred stock liquidation preferences.

Pros of this method include:

- Easy to implement and explain; easy to show the drivers of the change in values between different valuation dates.
- Allows the valuation specialist to explicitly value the liquidation preference for each class of preferred stock using a specified discount rate, ensuring that credit spreads are in line with the expected credit spreads of preferred securities in private companies.
- Provides an additional lever allowing the valuation to specify both the credit spread and volatility in combination to ensure the conclusion makes sense (instead of using volatility as the key input in a traditional OPM).

³⁰ If the leverage (calculated as the sum of the interest-bearing debt and debt-like preferred stock divided by total invested capital [TIC]) falls within the observable range for commercial debt issuances, the task force believes that the *yield method*, which is described in paragraphs 4.12–21, may be an appropriate method for estimating the fair value of the debt-like preferred stock or debt-like component of a participating preferred or convertible preferred.

Commercial debt issuances, including venture capital debt investments, are typically funded only when the total enterprise value significantly exceeds the face value of the debt. Market participants investing in the debt require a yield that is commensurate with the risk. Companies typically must be profitable to obtain bank debt or corporate bonds; companies that are not profitable but have intellectual property or other assets that would have value even upon a dissolution of the enterprise may be able to obtain debt from venture capital investors. These factors would be considered when estimating an appropriate market yield in the yield method. The yields observed for distressed debt where the enterprise value and profitability have declined significantly since the original issuance date would not typically be representative. It is not necessary for the company to have access to the commercial debt or venture capital debt markets for these yields to be relevant benchmarks when considering the reasonable yield for the company's debt-like preferred stock or preferred stock liquidation preferences.

Using the yield method captures the required return on the debt or debt-like preferred investment, allowing for the fact that the investors have control of the timing of exit, similar to the control that covenants provide to commercial debt investments. If the leverage on the investors' debt or preferred stock holding falls outside the observable range for commercial debt issuances, then the common stock may be considered as an option, as discussed in paragraphs 6.71–72.

- Captures the value of the preferred stock liquidation preferences outside the option pricing model, consistent with the methods used to estimate the fair value of debt.
- Provides more precision when the capital structure includes preferred classes with different seniority and it is important to estimate the relative values of the preferred stock (for example, when calibrating to a pay-to-play transaction).³¹

Cons of this method include:

- Estimates the value of the preferred stock liquidation preferences based on the contractual payoffs without explicitly capturing situations where the recovery would be expected to be less than the contractual amount, such as when the aggregate liquidation preferences are much higher than the total equity value. Does not model the relationship between the value of the preferred stock liquidation preferences and the total equity value.
- Requires judgmental assumptions regarding the credit spreads for each level of seniority of the liquidation preferences of the preferred stock that may be hard to estimate and to validate, making these assumptions difficult to audit.
- If the analysis is not adjusted to treat the debt-like component within a risk-neutral framework on the upside, the analysis may indicate that the value of the senior preferred is lower than the junior preferred or that the value of the preferred is lower than common (see paragraph 6.60 for a description of adjustments that avoid this issue).
- Not widely used, so no track record demonstrating reasonable results.

e) *Calibration discount method*: The valuation specialist could also perform a valuation of the total equity as of the most recent financing date based on other methods (for example, using the discounted cash flow method or guideline public company method) and then allocate that value among the various classes of equity (for example, using a traditional OPM or variant).³² Typically, in these cases, the

³¹ A “pay to play” transaction is a financing that is structured so that the existing investors are penalized for failing to participate or incentivized to participate at a higher level. For example, the new preferred may have superior terms to previous classes and investors who participate may be allowed to exchange previous classes into the new preferred, or investors who fail to participate may have their previous rounds pushed down to common, or investors who participate at a higher percentage than their current equity ownership may receive warrants that allow them an additional share of the upside. It is challenging to calibrate to these transactions because investors not only receive a direct interest in the new preferred, but also receive additional benefits from participating or avoid additional penalties from not participating. For these transactions, it is important to use an approach that accurately models the value of the various classes of preferred.

³² A variant of the calibration discount method that some valuation specialists have used historically is the *pari passu* method. When there is a recent transaction in a senior preferred stock, rather than estimating the equity value via the discounted cash flow method or guideline public company method, the valuation specialist calibrates the equity value to the latest financing by modeling the liquidation preferences as *pari passu*. The intuition behind this method is that the senior securities would not be able to fully benefit from the contractual seniority if they lack the right to force a sale or redeem the securities if the equity value falls. The resulting equity value would then be allocated considering the contractual seniority, and a calibration discount would be applied to the senior liquidation

allocation method will imply that the senior classes of equity have a value above their most recent transaction price. If so, a calibration discount can be implied from the model value for the liquidation preference for the senior preferred considering the difference between the most recent transaction price and the allocation method. This calibration discount would then be carried forward for future measurement dates, continuing to use the same calibrated framework as long as market participants would use that same framework. Typically, the calibrated discount would be assumed to remain constant until there was a significant change in facts and circumstances, including factors such as any changes in the capital structure or changes as the company approaches a liquidity event, but may be reduced based on qualitative assessments regarding the change in the value of the liquidation preferences over time.³³ Note that the calibration discount typically would not be applied when valuing the liquidation preferences for the junior preferred classes that in aggregate have control of the business, as the OPM already allocated significantly less value to the liquidation preferences for these classes.³⁴ It may be appropriate to consider the implied credit spread for the liquidation preferences for each class as a check to confirm that the credit spreads are within a reasonable range.

Pros of this method include:

- May be necessary to model the transaction consistently with market pricing, especially if the transaction is senior or entitles the investors to a high return (for example, a 2x liquidation preference or warrant coverage). Such transactions may be an indication that the company had difficulty attracting capital and may reflect some level of distress; however, in most cases, the company followed an orderly process, and it would not be appropriate to assume that the investors had a day one gain.
- Relatively simple to implement.

preference to capture the difference. This approach provides an approximation for estimating the equity value in situations where other equity valuation methods are less applicable (for example, for pre-revenue companies). Pros of this method include that it is easy to implement and addresses concerns about overstating the value of the senior liquidation preference. Cons of this method include that it does not accurately model the contractual terms of the securities and that the method does not clarify how to adjust the liquidation preferences for the junior classes of preferred or how to update the calibration discount as the equity value changes at later measurement dates. Therefore, other approaches discussed in this section may be more appropriate.

³³ The challenges in estimating the change in the calibration discount between measurement dates is one of the limitations of this approach. Therefore, the task force recommends using other variants of the OPM and hybrid methods that more directly capture the risk of the liquidation preferences, when possible.

³⁴ If there are three or more tiers of seniority, it may be appropriate to apply some portion of the calibration discount to the liquidation preferences for the more senior of the tiers, especially if the junior preferred have control over the timing of exit. The debt-like preferred plus upside method may be a more appropriate method for addressing situations where the values of junior preferred classes are significant to the analysis.

- Provides an additional lever allowing the valuation to specify both the equity value and volatility in combination to ensure the conclusion makes sense (instead of using volatility as the key input in a traditional OPM).
- Implied credit spreads are in line with the expected credit spreads of debt-like preferred securities in private companies.

Cons of this method include:

- A calibration discount is difficult to explain and appears to be in conflict with the pricing of the investment.
- Performing income and market approaches may be challenging for early-stage companies.
- Updating the calibration discount in a consistent way for future measurement dates may be challenging.
- Not widely used, so no track record demonstrating reasonable results.

It is important to consider the facts and circumstances in estimating the fair value of each instrument in a complex capital structure.

Example – Series C Up-Round (Senior)

6.55 A venture-capital backed business raised \$15 million of Series C financing at a price of \$5 per share. Previous rounds included \$10 million in Series B at \$2 per share and \$5 million in Series A at \$1 per share, as well as 5 million shares of common stock. All of the preferred are convertible, not participating, and each round is senior to the previous round. In the context of this guide, in general, the goal of the valuation will be to estimate the value of the common stock underlying stock-based compensation awards. If there are no transactions in the common stock, the valuation as of the financing date will be calibrated to the transaction price in the latest financing. Thus, this example presents various alternative approaches calibrated such that the value of the Series C is equal to \$5 per share, estimating the corresponding total equity value for the company and the value of each class of equity.

6.56 The following table shows the results for certain of the methods discussed in paragraph 6.54, as well as the CSE method for comparison. Note that the results presented in this table reflect the values for a specific capital structure and set of assumptions; the implied equity values and corresponding common stock values from each approach will vary as these assumptions change. See the subsequent paragraphs for details on each method.

Paragraph	Method	Calibrated input	Assumptions		Outputs						
		Equity value	Term (yrs)	Overall Volatility	Common Stock Volatility	Class A	Class B	Class C	Common Stock (marketable basis)	Implied spread for Series C Liquidation Preference	% of Class C value attributable to Liquidation Preference
6.57	Traditional closed-form OPM	64,647,069	7.0	75%	82%	3.26	3.43	5.00	3.24	7.7%	53.9%
6.57	Traditional closed-form OPM	73,353,742	7.0	100%	104%	3.86	3.96	5.00	3.85	15.0%	34.4%
6.57	Traditional closed-form OPM	70,580,603	10.0	75%	79%	3.67	3.79	5.00	3.65	7.8%	40.9%
6.57	Traditional closed-form OPM	79,353,210	10.0	100%	102%	4.27	4.33	5.00	4.27	15.0%	21.7%
6.59	Hybrid Method (CSE and Traditional closed-form OPM), 20% CSE 80% OPM	76,682,864	7.0	100%	n/a	4.09	4.17	5.00	4.08	18.7%	27.5%
6.59	Hybrid Method (CSE and Traditional closed-form OPM), 40% CSE 60% OPM	80,012,245	7.0	100%	n/a	4.32	4.37	5.00	4.31	23.8%	20.6%
6.59	Hybrid Method (CSE and Traditional closed-form OPM), 60% CSE 40% OPM	83,341,497	7.0	100%	n/a	4.55	4.58	5.00	4.54	31.2%	13.8%
6.59	Hybrid Method (CSE and Traditional closed-form OPM), 80% CSE 20% OPM	86,670,748	7.0	100%	n/a	4.77	4.79	5.00	4.77	45.1%	6.9%
6.60	Debt-like Preferred + Upside (29%, 24%, 20%) with N(d2) adjustment	78,283,891	5.0	75%	84%	4.17	4.28	5.00	4.20	15.0%	46.6%
6.60	Debt-like Preferred + Upside (36%, 30%, 25%) with N(d2) adjustment	77,777,920	5.0	100%	106%	4.14	4.28	5.00	4.14	20.0%	37.8%
6.60	Debt-like Preferred + Upside (43%, 35%, 29%) with N(d2) adjustment	77,704,679	5.0	125%	129%	4.14	4.30	5.00	4.11	25.0%	30.9%
6.60	Debt-like Preferred + Upside (43%, 36%, 29%) with risky put adjustment	79,065,669	5.0	75%	85%	4.24	4.38	5.00	4.19	15.0%	46.6%
6.60	Debt-like Preferred + Upside (46%, 38%, 32%) with risky put adjustment	78,498,255	5.0	100%	107%	4.21	4.36	5.00	4.13	20.0%	37.8%
6.60	Debt-like Preferred + Upside (49%, 40%, 33%) with risky put adjustment	78,269,251	5.0	125%	129%	4.19	4.36	5.00	4.10	25.0%	30.9%

6.57 *Traditional closed-form OPM* – In a traditional closed-form OPM, the two key assumptions are the time to liquidity and the volatility. For this example, the valuation specialist considered a 7-year time to liquidity based on the maximum timeframe that the company estimated that the investors would allow, and a 100% volatility based on a size-adjusted volatility for the applicable industry, performing the calculations as follows:

Option Pricing Model				Allocation table				
Events	Strike price	Call option	Incremental call option	Class A	Class B	Class C	Common	Total
[1] C Liquidation Preference	0	73,353,742	5,161,726	0.00%	0.00%	100.00%	0.00%	100.00%
[2] B Liquidation Preference	15,000,000	68,192,016	1,942,038	0.00%	100.00%	0.00%	0.00%	100.00%
[3] A Liquidation Preference	25,000,000	66,249,978	814,672	100.00%	0.00%	0.00%	0.00%	100.00%
[4] Common stock participate	30,000,000	65,435,307	741,784	0.00%	0.00%	0.00%	100.00%	100.00%
[5] A convert	35,000,000	64,693,523	1,316,828	50.00%	0.00%	0.00%	50.00%	100.00%
[6] B convert	45,000,000	63,376,695	4,347,053	33.33%	33.33%	0.00%	33.33%	100.00%
[7] C convert	90,000,000	59,029,641	59,029,641	27.78%	27.78%	16.67%	27.78%	100.00%

Value by breakpoint			
Class A	Class B	Class C	Common
0	0	5,161,726	0
814,672	0	0	0
658,414	0	0	741,784
1,449,018	1,449,018	0	1,449,018
16,397,123	16,397,123	9,836,274	16,397,123

Aggregate value	19,319,226	19,768,178	15,000,000	19,246,338
Shares	5,000,000	5,000,000	3,000,000	5,000,000
Per share value	3.86	3.96	5.00	3.85

Implied Yield	29.6%	26.4%	16.5%
Implied Credit Spread	28.1%	24.9%	15.0%
Liquidation Preference as % of Face Value	4.2%	9.8%	34.4%

The valuation specialist calculated the implied credit spread as an internal rate of return (IRR) or compound annual growth rate (CAGR), less the risk-free rate, based on the following inputs: present value, future value, and time to repayment. The present value is the value allocated to the preferred stock liquidation preference within the OPM. The future value corresponds to the liquidation preference (including cumulative dividends, if any) at the conclusion of the OPM term. The time to repayment is the number of years from the measurement date to the liquidity event, which is the OPM term. That is:

$$\text{Value allocated to the liquidation preference} = \frac{\text{Future payoff for the liquidation preference}}{(1 + \text{implied yield})^{\text{Time}}}$$

For comparison, the valuation specialist also presented a sensitivity showing the impact of changing the term to 10 years and the volatility to 75%, as follows:

Method	Calibrated input	Assumptions		Outputs				Implied spread for Series C Liquidation Preference	% of Class C value attributable to Liquidation Preference
	Equity value	Term (yrs)	Overall Volatility	Common Stock Volatility	Class A	Class B	Class C		
Traditional closed-form OPM	64,847,069	7.0	75%	82%	3.26	3.43	5.00	7.7%	53.9%
Traditional closed-form OPM	73,353,742	7.0	100%	104%	3.86	3.96	5.00	7.7%	34.4%
Traditional closed-form OPM	70,580,603	10.0	75%	79%	3.67	3.79	5.00	7.8%	40.9%
Traditional closed-form OPM	79,353,210	10.0	100%	102%	4.27	4.33	5.00	15.0%	21.7%

Note that given the characteristics of the company in this example, the 7.7% – 7.8% implied credit spread for the 75% volatility scenarios likely is not consistent with market participants' required rate of return for debt-like preferred stock, and therefore the task force would recommend considering the higher volatility or using one of the other variants described in paragraphs 6.54 and 6.58–.60.

6.58 *Common Stock Equivalent method (also sometimes referred to as postmoney valuation or fully-diluted or as-converted value)* – In a common stock equivalent (CSE) valuation, all shares are assumed to be worth the same amount: that is, equal to the Series C price. The total number of shares outstanding (18.0 million) is multiplied by the \$5.00 price of the

Series C to estimate a total equity value of 90.0 million. The per-share value of the common stock is also \$5.00 per share on a marketable basis.

Total shares	18,000,000
Per-share price (based on Series C value)	5.00
Implied total equity value	90,000,000
Common stock value (marketable basis)	5.00

- 6.59** *Hybrid method (CSE and traditional closed form OPM)* – Hybrid methods consider multiple scenarios, using an option pricing method in one or more of the scenarios. See paragraphs 6.86–95 for additional discussion. One widely-used hybrid method is to consider a common stock equivalent (CSE) scenario, reflecting the extent to which market participants consider the securities on a CSE basis, weighted with an OPM scenario that assigns some value to the liquidation preferences. This type of hybrid method is frequently used when the company is approaching an IPO, but also may be used at earlier stages. The weighting on the CSE scenario effectively encompasses both the likelihood of a successful exit in which the preferred stock converts as well as the likelihood of a dissolution in which the preferred stock receives *de minimis* value. In both these situations, the preferred stock liquidation preferences have little impact. In this example, the valuation specialist considered 60% weight on the common-stock equivalent (CSE) scenario and 40% weight on the OPM allocation, as follows:

	Equity value	Class A	Class B	Class C	Common	Weight
Common stock equivalent	90,000,000	5.00	5.00	5.00	5.00	60%
OPM	73,353,742	3.86	3.96	5.00	3.85	40%
Weighted average	83,341,497	4.55	4.58	5.00	4.54	

	Class A	Class B	Class C
Liquidation preference value			
Common stock equivalent	0	0	0
OPM	814,672	1,942,038	5,161,726
Weighted average	325,869	776,815	2,064,690
Liquidation preference implied yield	47.7%	44.1%	32.7%
Liquidation preference implied spread	46.2%	42.6%	31.2%

The valuation specialist calculated the implied yield and credit spread under the hybrid method by estimating the present value of the liquidation preference as the weighted average between a value of 0 in the CSE scenario, since in the CSE scenario, all of the preferred shares (along with common) will convert into identical shares irrespective of liquidation preference, and the value allocated to the liquidation preference in the OPM. This weighted average present value of the liquidation preference across the two scenarios was then used to imply a yield, and then the risk-free rate was subtracted to estimate the implied credit spread.

For comparison, the valuation specialist also presented a sensitivity showing the impact of changing the CSE weighting over a range from 20% to 80%, as follows:

Method	Calibrated input	Assumptions		Outputs					Implied spread for Series C Liquidation Preference	% of Class C value attributable to Liquidation Preference
	Equity value	Term (yrs)	Overall Volatility	Common Stock Volatility	Class A	Class B	Class C	Common Stock (marketable basis)		
Hybrid Method (CSE and Traditional closed-form OPM), 20% CSE 80% OPM	76,682,994	7.0	100%	n/a	4.09	4.17	5.00	4.08	18.7%	27.5%
Hybrid Method (CSE and Traditional closed-form OPM), 40% CSE 60% OPM	80,012,245	7.0	100%	n/a	4.32	4.37	5.00	4.31	23.8%	20.6%
Hybrid Method (CSE and Traditional closed-form OPM), 60% CSE 40% OPM	83,341,497	7.0	100%	n/a	4.55	4.58	5.00	4.54	31.2%	13.8%
Hybrid Method (CSE and Traditional closed-form OPM), 80% CSE 20% OPM	86,670,748	7.0	100%	n/a	4.77	4.79	5.00	4.77	45.1%	6.9%

6.60 *Debt-like preferred plus upside method* – In this method, the fair value of any debt, debt-like preferred and preferred stock liquidation preferences are first estimated outside the OPM and then excluded from the OPM altogether. Then, the residual equity value is allocated to the common stock and preferred stock participation or conversion rights. The upside for any participating preferred is the same as the common stock, and the upside for convertible non-participating preferred stock is the same as a warrant with a strike price equal to the conversion price.

This method is similar to the way that convertible notes are modeled. Some models also include an adjustment to treat the liquidation preference (which acts as the strike price for the conversion option) within a risk-neutral framework on the upside, or to treat the as-converted value of the underlying stock as risk-neutral and consider only the downside protection (the put value) in excess of this as-converted value to be risky. Without this adjustment, the analysis may indicate that the value of the senior preferred is lower than the junior preferred or that the value of the preferred is lower than common, particularly if the conversion option is already in the money but the credit risk is high. The rationale for this adjustment is that the underlying equity value is already a present value reflecting the future payoffs discounted at the cost of equity, and therefore, there is no additional risk for this component. The excess credit risk applies only on the downside.³⁵

When estimating the relevered volatility for use in this method as discussed in paragraphs A.11.05–.06, the debt, debt-like preferred and preferred stock liquidation preferences should all be added to total debt and only the remaining equity value allocated within the OPM should be considered as equity.

For this example, given the company's risk profile, the valuation specialist selected a volatility of 100% and a credit spread of 20% for the senior preferred (Class C), increasing to 24% for the next most senior preferred (Class B) and 29% for the junior preferred (Class A), with an expected term to exit of 5 years. To estimate the downside only credit spread corresponding to these overall credit spreads, the valuation specialist made the following adjustments:

$$\begin{aligned} \text{Present value of liquidation preference} &= \frac{\text{Future value of liquidation preference}}{(1 + \text{risk free rate} + \text{credit spread})^T} \\ &= \frac{\text{Risky portion of liquidation preference}}{(1 + \text{risk free rate} + \text{downside credit spread})^T} + \frac{\text{Risk neutral portion of liquidation preference}}{(1 + \text{risk free rate})^T} \end{aligned}$$

With the N(d2) adjustment, the downside is treated as risky if the equity value is below the conversion price, so the risky portion of the liquidation preference is $(1 - N(d2))$ times the liquidation preference.

$$5,665,130 = \frac{15,000,000}{(1 + 1.5\% + 20.0\%)^5} = \frac{(1 - 0.1079) * 15,000,000}{(1 + 1.5\% + 24.8\%)^5} + \frac{0.1079 * 15,000,000}{(1 + 1.5\%)^5}$$

³⁵ Similar credit risk adjustments are made in convertible note lattice models such as the Goldman Sachs model or Tsiveriotis and Fernandes model.

The calculation uses 1.5% as the risk-free rate. The valuation specialist calculated the N(d2) value of 0.1079 using the calibrated share price of 4.14, relevered equity volatility and term to exit of 5 years. The 24.8% is the calibrated downside credit spread.

The valuation specialist then estimated the fair value of each class of equity as follows:

Method	Calibrated input	Assumptions		Outputs					Implied spread for Series C Liquidation Preference	% of Class C value attributable to Liquidation Preference
	Equity value	Term (yrs)	Overall Volatility	Common Stock Volatility	Class A	Class B	Class C	Common Stock (marketable basis)		
Debt-like Preferred + Upside (29%, 24%, 20%) with N(d2) adjustment	78,283,891	5.0	75%	84%	4.17	4.28	5.00	4.20	15.0%	46.6%
Debt-like Preferred + Upside (36%, 30%, 25%) with N(d2) adjustment	77,777,920	5.0	100%	106%	4.14	4.28	5.00	4.14	20.0%	37.8%
Debt-like Preferred + Upside (43%, 35%, 29%) with N(d2) adjustment	77,704,679	5.0	125%	129%	4.14	4.30	5.00	4.11	25.0%	30.9%

Debt-like Preferred + Upside with N(d2) adjustment

Calibrated equity value	77,777,920
Aggregate preferred conversion right value	48,888,151
Aggregate liquidation preference value	8,206,511
Remaining allocable value	20,683,258
Total shares	5,000,000
Share price	4.14

	Class A	Class B	Class C	Common
Strike/Conversion price	1.00	2.00	5.00	n/a
Call option value	3.73	3.51	3.11	
Shares	5,000,000	5,000,000	3,000,000	5,000,000
Total call option value	18,636,560	17,544,833	9,334,870	0
Per share values				
Liquidation preference	0.20	0.51	1.56	
Call option	3.73	3.51	3.11	
N(d2) adjustment	0.21	0.27	0.33	
As converted				4.14
Total	4.14	4.28	5.00	4.14
Shares	5,000,000	5,000,000	3,000,000	5,000,000
Total value	20,684,894	21,409,767	15,000,000	20,683,258
Calibrated downside credit spread	36.4%	30.1%	24.8%	
Selected discount rate	37.9%	31.6%	26.3%	

For comparison, the valuation specialist also presented a sensitivity showing the impact of changing the volatility to 75% with a credit spread of 15% for the Class C and changing the volatility to 125% with a credit spread of 25% for the Class C, as follows:³⁶

³⁶ Note that the calculated Class A value in this approach was lower than the common stock value, because of the high discount rate for the liquidation preference on the downside. An alternative approach would be to use the as-converted value for the Class A and add the risky put value to capture the value of the downside protection for the liquidation preference.

Debt-like Preferred + Upside with N(d2) adjustment

Calibrated equity value	78,283,891
Aggregate preferred conversion right value	47,146,585
Aggregate liquidation preference value	10,142,300
Remaining allocable value	20,995,006
Total shares	5,000,000
Share price	4.20

	Class A	Class B	Class C	Common
Strike/Conversion price	1.00	2.00	5.00	n/a
Call option value	3.62	3.28	2.67	
Shares	5,000,000	5,000,000	3,000,000	5,000,000
Total call option value	18,078,483	16,380,345	8,010,250	0
Per share values				
Liquidation preference	0.26	0.64	1.89	
Call option	3.62	3.28	2.67	
N(d2) adjustment	0.30	0.37	0.44	
As converted				4.20
Total	4.17	4.28	5.00	4.20
Shares	5,000,000	5,000,000	3,000,000	5,000,000
Total value	20,863,977	21,424,908	15,000,000	20,995,006
Calibrated downside credit spread	29.4%	24.3%	20.0%	
Selected discount rate	30.9%	25.8%	21.5%	

Debt-like Preferred + Upside with N(d2) adjustment

Calibrated equity value	77,704,679
Aggregate preferred conversion right value	50,331,021
Aggregate liquidation preference value	6,840,405
Remaining allocable value	20,533,252
Total shares	5,000,000
Share price	4.11

	Class A	Class B	Class C	Common
Strike/Conversion price	1.00	2.00	5.00	n/a
Call option value	3.84	3.71	3.46	
Shares	5,000,000	5,000,000	3,000,000	5,000,000
Total call option value	19,197,586	18,525,641	10,369,385	0
Per share values				
Liquidation preference	0.16	0.42	1.31	
Call option	3.84	3.71	3.46	
N(d2) adjustment	0.14	0.17	0.23	
As converted				4.11
Total	4.14	4.30	5.00	4.11
Shares	5,000,000	5,000,000	3,000,000	5,000,000
Total value	20,680,922	21,490,505	15,000,000	20,533,252
Calibrated downside credit spread	42.6%	35.2%	29.1%	
Selected discount rate	44.1%	36.7%	30.6%	

With the risky put adjustment, the downside is treated as risky for the put value between the equity value and the liquidation preference, so the risky portion of the liquidation preference is the value of a put option on the underlying equity value with a strike equal to the liquidation preference. The valuation specialist estimated the fair value of each class of equity under this approach as follows:

	Calibrated input	Assumptions		Outputs						
	Equity value	Term (yrs)	Overall Volatility	Common Stock Volatility	Class A	Class B	Class C	Common Stock (marketable basis)	Implied spread for Series C Liquidation Preference	% of Class C value attributable to Liquidation Preference
Method										
Debt-like Preferred + Upside (43%, 36%, 29%) with risky put adjustment	79,065,669	5.0	75%	85%	4.24	4.38	5.00	4.19	15.0%	46.6%
Debt-like Preferred + Upside (46%, 38%, 32%) with risky put adjustment	78,498,255	5.0	100%	107%	4.21	4.36	5.00	4.13	20.0%	37.8%
Debt-like Preferred + Upside (49%, 40%, 33%) with risky put adjustment	78,269,251	5.0	125%	129%	4.19	4.36	5.00	4.10	25.0%	30.9%

Debt-like Preferred + Upside with risky put adjustment

Calibrated equity value	78,498,255
Aggregate put option value	4,138,473
Remaining allocable value	74,359,782
Total shares	18,000,000
Share price	4.13

	Class A	Class B	Class C	Common
Liquidation preference (strike/conversion price)	1.00	2.00	5.00	n/a
Put option value	0.52	1.23	3.62	
Implied spread	46.1%	38.1%	31.5%	
Selected discount rate	47.6%	39.6%	33.0%	
Discount factor	0.14	0.19	0.24	
Discounted put value	0.07	0.23	0.87	
Shares	5,000,000	5,000,000	3,000,000	5,000,000
Total put option value	371,989	1,159,781	2,606,703	0
Total value (put option + as converted) - per share	4.21	4.36	5.00	4.13
Total value	21,027,484	21,815,276	15,000,000	20,655,495

The same sensitivities showing the impact of changing the volatility to 75% with a credit spread of 15% for the Class C and changing the volatility to 125% with a credit spread of 25% for the Class C, are as follows:

Debt-like Preferred + Upside with risky put adjustment

Calibrated equity value	79,065,669
Aggregate put option value	3,681,637
Remaining allocable value	75,384,033
Total shares	18,000,000
Share price	4.19

	Class A	Class B	Class C	Common
Liquidation preference (strike/conversion price)	1.00	2.00	5.00	n/a
Put option value	0.35	0.94	3.12	
Implied spread	43.0%	35.6%	29.4%	
Selected discount rate	44.5%	37.1%	30.9%	
Discount factor	0.16	0.21	0.26	
Discounted put value	0.06	0.19	0.81	
Shares	5,000,000	5,000,000	3,000,000	5,000,000
Total put option value	276,057	969,585	2,435,995	0
Total value (put option + as converted) - per share	4.24	4.38	5.00	4.19
Total value	21,216,066	21,909,594	15,000,000	20,940,009

Debt-like Preferred + Upside with risky put adjustment

Calibrated equity value	78,269,251
Aggregate put option value	4,389,221
Remaining allocable value	73,880,030
Total shares	18,000,000
Share price	4.10

	Class A	Class B	Class C	Common
Liquidation preference (strike/conversion price)	1.00	2.00	5.00	n/a
Put option value	0.66	1.46	3.99	
Implied spread	48.7%	40.3%	33.3%	
Selected discount rate	50.2%	41.8%	34.8%	
Discount factor	0.13	0.17	0.22	
Discounted put value	0.09	0.25	0.90	
Shares	5,000,000	5,000,000	3,000,000	5,000,000
Total put option value	433,247	1,269,313	2,686,662	0
Total value (put option + as converted) - per share	4.19	4.36	5.00	4.10
Total value	20,955,477	21,791,543	15,000,000	20,522,231

6.61 When selecting a reasonable method for a given valuation, the task force recommends that the valuation specialist consider the merits of the method versus its complexity. Two metrics that may be used to assess the merits of the method are the percentage of the value of the latest preferred stock financing that is attributable to the liquidation preference and the implied yield on the liquidation preference.

- The benefit of considering the percentage of the value that is attributable to the liquidation preference is that it aligns with market participant perspectives on the value of the investment. In many cases, market participants who invest in private companies are most focused on the upside appreciation, expecting most of their returns to be generated from a few winners, as discussed in paragraph A.04.05. Therefore, it would generally not make sense for the vast majority of the value to be derived from the liquidation preference since that would not be consistent with market participant assumptions.
- The benefit of considering the implied credit spread on the liquidation preference is that these yields may be compared with the credit spreads that would be appropriate for a debt-like preferred in the company, as discussed in paragraph 6.49.

6.62 When assessing the value allocated to the liquidation preferences, it is important to understand investors' motivations for negotiating liquidation preferences and the recovery that investors would expect on the downside. In some cases, the investors are almost exclusively focused on upside exits and would expect little to no recovery on the downside. In other cases, the investors may negotiate for seniority or a greater than 1x liquidation preference, or both. These negotiations may be considered from the perspective of the previous round investors, to understand why they are allowing their liquidation preferences to be subordinated to the new financing. Some investors may receive seniority because of their reputation, when the previous investors see a benefit to having a particular investor involved. Investors may also receive seniority when the previous financings were senior and the company has established a pattern, or when existing investors want to provide an incentive for all investors to participate in each future financing. Finally, investors may negotiate for seniority in situations where the business is distressed and the new investor has leverage to ensure that they would be

repaid first in a dissolution scenario. In some cases, an investor may also negotiate for a put right or mandatory redemption date, which may allow the investor to preserve value on the downside by requiring the company to raise more capital or sell the business before value deteriorates further. The more attention that the liquidation preferences receive in the negotiations, the greater the percentage of the value that is likely attributable to the liquidation preferences.

- 6.63** Note that there is no expectation that the valuation specialist will apply more than one of these methods. Instead, it would be appropriate for the valuation specialist to select one of the methods and then test to confirm that the allocation and the implied credit spreads are reasonable given market participant assumptions considering the nature of the business and the expected range of future outcomes for the business. In a traditional OPM, a higher volatility indicates a higher credit spread; in a hybrid method including a CSE scenario, a higher weighting on the CSE scenario implies a higher credit spread; and in the debt-like preferred plus upside method, the credit spread may be selected directly. The methods that are most appropriate for each situation will vary depending on facts and circumstances.

Updating the Valuation when there has not been a Recent Transaction

- 6.64** If there has not been a recent transaction and no information is available about the next expected transaction, the valuation will need to be updated considering the change in the equity value since the transaction date, and then that value will need to be allocated back to the various securities in the capital structure. Unless there has been a significant change in facts and circumstances, the valuation will typically use the same allocation method (e.g. traditional OPM, hybrid method, or debt-like preferred plus upside) that was used on the transaction date used in calibrating the analysis. See paragraphs 3.111–128, “Applying Calibration in Valuing the Securities in an Enterprise,” for further discussion.
- 6.65** Note that there are many possible methodologies for estimating the enterprise value and equity value at valuation dates when there has not been a recent round of financing and no information is known regarding the next expected round of financing. The valuation specialist may consider an income approach or market approach, or both, as discussed in chapter 3, “Overview of Valuation Approaches,” calibrating to the implied enterprise value and equity value from the financing date. The valuation specialist also may consider a trending analysis between the two dates, considering the change in the company and the change in the markets. Another approach would be to estimate the updated value for the latest class of preferred directly (if there is adequate support for that estimate), and then calibrate to that updated value within the valuation model. If the valuation specialist is using a methodology that uses multiple scenarios, and the valuation changes the scenario weightings between dates, the valuation specialist should also confirm that the change in the overall weighted equity value between dates is reasonable.
- 6.66** The following paragraphs show the same example as shown in paragraphs 6.55–.60, one year later, first showing the calculations when the total equity value has increased, and then showing the calculations when the total equity value has declined. In each case, please assume that the valuation specialist used appropriate methodologies to support the

enterprise value, calibrated the valuation analysis to the transaction date, and rolled the analysis forward considering both the changes in the company's performance and the changes in the overall market.

6.67 Increase in the Equity Value. Suppose that based on a detailed analysis of the enterprise value, beginning with the calibrated valuation as of the Series C financing date, the valuation specialist concluded that the equity value increased by 50% between the Series C financing date and the new measurement date. The valuation specialist then allocated the equity value using the same methodology that was used in calibration. These analyses resulted in the following values:³⁷

Method (Original Measurement Date)	Weight	Calibrated equity value	Class C	Common Stock (marketable basis)	Implied spread for Series C Liquidation Preference	% of Class C value attributable to Liquidation Preference
Traditional closed-form OPM, 50% increase in equity value		73,353,742			12.2%	31.9%
Hybrid (CSE and Traditional closed-form OPM), 60% CSE 40% OPM		83,341,497	5.00	4.54	31.2%	13.8%
CSE scenario	60%	90,000,000	5.00	5.00		
OPM scenario	40%	73,353,742	5.00	3.85		
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 60% CSE 40% OPM		83,341,497	5.00	4.54	31.2%	13.8%
CSE scenario	60%	90,000,000	5.00	5.00		
OPM scenario	40%	73,353,742	5.00	3.85		
Debt-like Preferred + Upside (59%, 49%, 40%) with risky put adjustment, 50% increase in equity value		83,214,833			20.0%	21.4%

Method (New Measurement Date)	Weight	New equity value	Class C	Common Stock (marketable basis)	Implied spread for Series C Liquidation Preference	% of Class C value attributable to Liquidation Preference
Traditional closed-form OPM, 50% increase in equity value		110,030,614	7.27	5.83	12.2%	31.9%
Hybrid (CSE and Traditional closed-form OPM), 60% CSE 40% OPM		125,012,245	7.41	6.83	30.8%	18.6%
CSE scenario	60%	133,337,135	7.41	7.41		
OPM scenario	40%	112,524,911	7.41	5.96		
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 60% CSE 40% OPM		125,012,245	7.40	6.83	31.2%	18.3%
CSE scenario	60%	137,187,076	7.62	7.62		
OPM scenario	40%	106,750,000	7.08	5.65		
Debt-like Preferred + Upside (59%, 49%, 40%) with risky put adjustment, 50% increase in equity value		124,822,249	7.25	6.83	20.0%	21.4%

Method (Comparison)	Change in Equity value	Change in Class C	Change in Common Stock
Hybrid (CSE and Traditional closed-form OPM), 60% CSE 40% OPM	50.0%	48.2%	50.5%
CSE scenario	48.2%	48.2%	48.2%
OPM scenario	53.4%	48.2%	54.9%
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 60% CSE 40% OPM	50.0%	48.1%	50.5%
CSE scenario	52.4%	52.4%	52.4%
OPM scenario	45.6%	41.6%	46.7%

In the hybrid method, as one approach for updating the values for the two scenarios between valuation dates, the valuation specialist calibrated the equity valuation to the weighted average equity value across the two scenarios, and then applied the change in equity value for each scenario such that the weighted average equity value across the two scenarios as of the new measurement date equaled the overall updated equity value and each scenario indicated the same value for the Series C Preferred Stock. This approach is a hybrid method using two calibrated scenarios, considering the latest round value as a proxy for the preferred pricing if it were sold on the measurement date. A more detailed scenario analysis would likely separate the CSE scenario into an upside scenario and a dissolution scenario with different values for the latest round of preferred in each scenario.

As another approach for updating the values for the two scenarios between valuation dates, the valuation specialist estimated the enterprise value and equity value in the two scenarios separately and then confirmed that the change in the overall weighted equity

³⁷ Note that the first table (highlighted in blue) is as of the calibration date, so both hybrid analyses are identical. The difference between the two hybrid analyses is in the approach for updating to the new measurement date, as shown in the second table (highlighted in green).

value was reasonable. The valuation specialist first calculated the implied revenue multiples for the CSE scenario and the OPM scenario as of the transaction date, considering the Company's LTM revenue of \$24 million, and noted that the implied multiples fell near the third quartile of the guideline public company multiples for the CSE scenario and near the median of the guideline public company multiples for the OPM scenario. As of the subsequent valuation date, the valuation specialist considered the updated LTM revenue and selected updated revenue multiples, resulting in a separate equity value for each approach. The valuation specialist considered the company's size, growth and profitability relative to the guideline public companies as of the two dates and noted that the company's positioning relative to the guideline companies was similar. Therefore, the valuation specialist selected multiples that were similarly near the third quartile for the CSE scenario and median for the OPM scenario. This approach resulted in the following equity values:

	Weight	LTM Revenues Transaction Date	Equity Value	Calibrated Multiple
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 60% CSE 40% OPM			83,341,497	
CSE scenario	60%	24,000,000	90,000,000	3.75x
OPM scenario	40%	24,000,000	73,353,742	3.06x

	Weight	LTM Revenues Valuation Date	Selected Multiple	Equity Value
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 60% CSE 40% OPM				125,012,245
CSE	60%	35,000,000	3.92x	137,187,076
OPM	40%	35,000,000	3.05x	106,750,000

	Change in Weight	Change in LTM Revenue	Change in Multiple	Change in Equity Value
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 60% CSE 40% OPM				50.0%
CSE	0.0%	45.8%	4.5%	52.4%
OPM	0.0%	45.8%	-0.2%	45.5%

The valuation specialist then allocated the equity value using the same methodology that was used in calibration and applied the appropriate weighting.³⁸

³⁸ For simplicity, this limited example demonstrates a calibration process using market multiples based on LTM revenues. In many cases, the valuation might also consider additional multiples (for example, forward multiples and multiples of EBITDA or other metrics), when feasible, as well as the income approach (for example, the discounted cash flow method), when feasible.

6.68 Decrease in the Equity Value. Suppose that based on a detailed analysis of the enterprise value, beginning with the calibrated valuation as of the Series C financing date, the valuation specialist concluded that the equity value decreased by 40% between the Series C financing date and the new measurement date. The valuation specialist then allocated the equity value using the same methodology that was used in calibration. These analyses resulted in the following values:

Method (Original Measurement Date)	Weight	Calibrated equity value	Class C	Common Stock (marketable basis)	Implied spread for Series C Liquidation Preference	% of Class C value attributable to Liquidation Preference
Traditional closed-form OPM, 40% decrease in equity value		73,353,742			18.3%	49.5%
Hybrid (CSE and Traditional closed-form OPM), 60% CSE 40% OPM		83,341,497	5.00	4.54	31.2%	13.8%
CSE	60%	90,000,000	5.00	5.00		
OPM	40%	73,353,742		3.85		
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 60% CSE 40% OPM		83,341,497	5.00	4.54	31.2%	13.8%
CSE	60%	90,000,000	5.00	5.00		
OPM	40%	73,353,742		3.85		
Debt-like Preferred + Upside (38%, 32%, 26%) with risky put adjustment, 40% decrease in equity value		83,214,834			20.0%	45.2%

Method (New Measurement Date)	Weight	New equity value	Class C	Common Stock (marketable basis)	Implied spread for Series C Liquidation Preference	% of Class C value attributable to Liquidation Preference
Traditional closed-form OPM, 40% decrease in equity value		44,012,245	3.41	2.21	18.3%	49.5%
Hybrid (CSE and Traditional closed-form OPM), 40% CSE 60% OPM		50,004,898	3.35	2.64	29.1%	20.1%
CSE	40%	60,386,853	3.35	3.35		
OPM	60%	43,083,595		2.16		
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 40% CSE 60% OPM		50,004,898	3.35	2.64	29.4%	19.9%
CSE	40%	62,125,000	3.45	3.45		
OPM	60%	41,924,830	3.28	2.10		
Debt-like Preferred + Upside (38%, 32%, 26%) with risky put adjustment, 40% decrease in equity value		49,928,900	3.44	2.53	20.0%	45.2%

Method (Comparison)	Change in Equity value	Change in Class C	Change in Common Stock
Hybrid (CSE and Traditional closed-form OPM), 40% CSE 60% OPM	-40.0%	-32.9%	-41.9%
CSE	-32.9%	-32.9%	-32.9%
OPM	-41.3%	-32.9%	-43.9%
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 40% CSE 60% OPM	-40.0%	-33.0%	-41.9%
CSE	-31.0%	-31.0%	-31.0%
OPM	-42.8%	-34.3%	-45.5%

In the hybrid method, the valuation specialist calibrated the equity valuation to the weighted average equity value across the two scenarios, but in addition, concluded that as of the new measurement date, because of the decline in value, market participants would consider a lower weighting on the CSE scenario and a higher weighting on the OPM scenario (40% CSE and 60% OPM, instead of 60% CSE and 40% OPM at the Series C financing date). The valuation specialist applied the change in equity value for each scenario such that the weighted average equity value across the two scenarios as of the new measurement date (using the updated weightings) equaled the overall updated equity value (using the calibrated equity value with the original weightings adjusted for the movement in the equity value between the dates) and each scenario indicated the same value for the Series C Preferred Stock. This approach is a hybrid method using two calibrated scenarios, considering the latest round value as a proxy for the preferred pricing if it were sold on the measurement date. A more detailed scenario analysis would likely separate the CSE scenario into an upside scenario and a dissolution scenario with different values for the latest round of preferred in each scenario.

As another approach for updating the values for the two scenarios between valuation dates, the valuation specialist estimated the enterprise value and equity value in the two scenarios separately and then confirmed that the change in the overall weighted equity value was reasonable. The valuation specialist first calculated the implied revenue multiples for the CSE scenario and the OPM scenario as of the transaction date, considering the Company's LTM revenue of \$24 million, and noted that the implied multiples fell near the third quartile of the guideline public company multiples for the

CSE scenario and near the median of the guideline public company multiples for the OPM scenario. As of the subsequent valuation date, the valuation specialist considered the updated LTM revenue and selected updated revenue multiples, resulting in a separate equity value for each approach. The valuation specialist considered the company's size, growth and profitability relative to the guideline public companies as of the two dates and noted that the company's positioning relative to the guideline companies was similar; however, because of the increased weighting on the OPM scenario, the valuation specialist selected slightly higher multiples for each. Therefore, the valuation specialist selected multiples that were near the 80th percentile for the CSE scenario and 60th percentile for the OPM scenario. This approach resulted in the following equity values:

	Weight	LTM Revenues Transaction Date	Equity Value	Calibrated Multiple
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 60% CSE 40% OPM			83,341,497	
CSE	60%	24,000,000	90,000,000	3.75x
OPM	40%	24,000,000	73,353,742	3.06x

	Weight	LTM Revenues Valuation Date	Selected Multiple	Equity Value
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 40% CSE 60% OPM				50,004,898
CSE	40%	17,500,000	3.55x	62,125,000
OPM	60%	17,500,000	2.40x	41,924,830

	Change in Weight	Change in LTM Revenue	Change in Multiple	Change in Equity Value
Hybrid (CSE and Traditional closed-form OPM, with independently calculated equity values for each scenario), 40% CSE 60% OPM				-40.0%
CSE	-20.0%	-27.1%	-5.3%	-31.0%
OPM	20.0%	-27.1%	-21.6%	-42.8%

The valuation specialist then allocated the equity value using the same methodology that was used in calibration and applied the appropriate weighting.³⁹

Example – Leveraged Buyout (LBO) with Senior Financing to Cure Debt Covenant Breach

6.69 Two years ago, a private equity fund acquired a company for \$500 million, structuring the investment with \$200 million in equity from the fund (all in Class A units) and \$300 million in third-party debt. In the period since the original investment, the company performed poorly. Based on the discounted cash flow method and guideline public company method using assumptions calibrated to the initial transaction and then updated considering the company's performance and market factors, the valuation specialist estimated that the business value had declined to \$350 million. In addition, the company's EBITDA had fallen enough to trigger a breach of the coverage ratio covenant in the third-party debt agreement, requiring the company to make an immediate payment of \$10 million to cure the breach. The company raised this \$10 million by issuing a new super senior Class AA preferred. To incentivize all the existing investors to participate, and because the company had been unsuccessful in attracting additional new investors, the new super senior Class AA negotiated a 2x liquidation preference and seniority over the Class A. The super senior Class AA also included a mandatory redemption date in five years if the company had not completed an exit by that date.

³⁹ See footnote 38 in paragraph 6.67.

In this situation, the valuation specialist noted that calibrating to the super senior Class AA investment using a traditional OPM without adjustment would imply a total equity value of only around \$60 million. Essentially, for a small financing with a 2x liquidation preference, even with a high leveraged volatility, nearly 100% of the value of that preferred class will be attributed to the liquidation preference, leaving little value for the liquidation preference for Class A or the upside for the Class A and Class B units.

Therefore, as one approach, the valuation specialist relied on the estimated \$350 million enterprise value before the new capital infusion less the value of debt for the purpose of valuing equity, using a calibration discount to reconcile to the Class AA transaction price. The valuation specialist estimated the value of debt for the purpose of valuing equity as the present value of future cash flows using a discounted cash flow model, resulting in an allocable equity value of approximately \$118 million plus approximately \$2.7 million of upside for the Class B profits interests. The valuation specialist then allocated the resulting equity value to the Class AA, Class A and Class B units. The Class AA value consisted of approximately \$14.4 million of liquidation preference plus approximately \$2.7 million of upside. Then the valuation specialist applied a calibration discount on the Class AA liquidation preference, resulting in a liquidation preference value of approximately \$7.3 million. This analysis resulted in the following values and implied credit spreads:

Capital Structure

Capital structure	Number of units	Purchase price per Unit	Liquidation preference	Conversion ratio	Seniority
Class AA	10,000,000	1.00	20,000,000	1.00	1
Class A	200,000,000	1.00	200,000,000	1.00	2
Class B Profit Interests	10,000,000				
Total Units	210,000,000				

Incremental Breakpoint Calculations

	AA LP	A LP	Pls participate and A converts	AA converts	Pro rata
Class AA	\$20,000,000				
Class A		\$200,000,000		\$0	
Class B Profit Interests			\$10,000,000	\$10,000,000	
	\$20,000,000	\$200,000,000	\$10,000,000	\$10,000,000	+

Option Pricing Model

Events	Strike price	Call option	Incremental call option	Allocation table			
				Class AA	Class A	Class B Profit Interests	Total
[1] AA LP	0	120,622,186	14,421,151	100.00%	0.00%	0.00%	100.00%
[2] A LP	20,000,000	106,201,035	47,546,288	0.00%	100.00%	0.00%	100.00%
[3] Pls participate and A converts	220,000,000	58,654,747	0	0.00%	0.00%	100.00%	100.00%
[4] AA converts	220,000,000	58,654,747	58,654,747	4.55%	90.91%	4.55%	100.00%

				Value by breakpoint		
				Class AA	Class A	Class B Profit Interests
Term	5.00	Value of Liquidation Preference (before adjustment)		14,421,151	47,546,288	n/a
Volatility	74.6%	Calibration Discount		49.1%	n/a	n/a
Risk-free rate (continuous)	1.50%	Value of Liquidation Preference (after calibration adjustment)		7,333,875	47,546,288	n/a
Annual dividend yield	0.00%	Value of Upside		2,666,125	53,322,497	2,666,125
Aggregate value				10,000,000	100,868,785	2,666,125
Units				10,000,000	200,000,000	10,000,000
Per-Unit value				1.00	0.50	0.27
Implied Yield				22.2%	33.3%	n/a
Implied Credit Spread				20.7%	31.8%	n/a
Liquidation Preference as % of Face Value				73.3%	47.1%	n/a

The calibration discount is an output of the analysis that results from the estimated equity value and the Class AA transaction price. It is important in assessing whether the implied yield and credit spread for the Class AA transaction is reasonable. For example, if the implied credit spread for Class AA is higher than the implied credit spread for Class A, a change in assumptions or approach may be warranted. The value for the Class B Profits Interests in this approach is primarily attributable to the equity value used in the analysis, which was estimated using the fundamentals approach described previously. Therefore, this approach does not directly calibrate to the transaction.

As an alternative approach, the valuation specialist calibrated to the transaction using a debt-like preferred plus upside approach for the Class AA. The valuation specialist estimated the credit spread for the Class AA by applying a subordination adjustment relative to the *senior debt*. The valuation specialist then included the value of the conversion option for the Class AA within the OPM as warrants that allow Class AA to participate on the upside. The valuation specialist then calibrated the remaining equity value using the OPM, so that the Class AA upside matched the transaction price. This analysis resulted in the following values and implied credit spreads:

Capital Structure					
Capital structure	Number of units	Purchase price per Unit	Liquidation preference	Conversion ratio	Seniority
Class AA	10,000,000	1.00	20,000,000	1.00	1
Class A	200,000,000	1.00	200,000,000	1.00	2
Class B Profit Interests	10,000,000				
Total Units	210,000,000				

Incremental Breakpoint Calculations					
	AA LP	A LP	Pls participate and A converts	AA converts	Pro rata
Class AA	\$0			\$0	
Class A		\$200,000,000		\$10,000,000	
Class B Profit Interests			\$10,000,000	\$10,000,000	
	\$0	\$200,000,000	\$10,000,000	\$10,000,000	*

Option Pricing Model					
Events	Strike price	Call option	Incremental call option	Class AA	Allocation table
					Class A
					Class B Profit Interests
					Total
[1] A LP	0	109,711,474	54,189,478	0.00%	100.00%
[2] Pls participate and A converts	200,000,000	55,521,996	0	0.00%	100.00%
[3] AA converts	200,000,000	55,521,996	55,521,996	4.55%	90.91%

Term	5.00		Credit spread for third-party debt	13.5%
			Senior recovery rate	40.0%
			Class AA Preferred recovery rate	10.0%
			Class AA credit spread	20.3%
			Class AA yield	21.8%
			Present value of Class AA liquidation preference	7,476,273

	Class AA	Value by breakpoint	Class A	Class B Profit
Value of Liquidation Preference (modeled outside OPM)	7,476,273	n/a	n/a	n/a
Value of Liquidation Preference (from the OPM)	n/a	54,189,478	n/a	n/a
Value of Upside	2,523,727	50,474,542	2,523,727	
Total value	10,000,000	104,664,020	2,523,727	

Units	10,000,000	200,000,000	10,000,000
Per Unit value	1.00	0.52	0.25

Implied Yield	21.8%	29.8%	n/a
Implied Credit Spread	20.3%	28.3%	n/a
Liquidation Preference as % of Face Value	74.8%	51.8%	n/a

Additional Considerations when the Preferred Stock includes PIK Dividends⁴⁰

6.70 Some preferred securities include not only a liquidation preference, but also the right to dividends, as described in paragraphs A.05.09–10. If the dividends are cumulative and increase the preferred liquidation preference whether or not declared, then they have an impact for participating preferred or on the downside where preferred does not convert. If the dividends also increase the conversion ratio for the preferred, then they also have an impact on the upside. In such cases, when modeling the common stock equivalent (CSE) scenario or allocating value in a scenario analysis or OPM, it would be important to consider the expected conversion ratio at the liquidity event, rather than the conversion ratio based on cumulative dividends through the measurement date. It may also be appropriate to consider multiple scenarios reflecting different possible timings of the liquidity event.

Additional Considerations when the Equity Value is Lower than the Preferred Stock Liquidation Preferences

6.71 The previous section focuses on variants of the OPM that avoid issues with allocating too much value to the preferred stock liquidation preferences when the timing of exit is not

⁴⁰ Similar considerations apply whenever the preferred stock has a conversion ratio that is not 1:1.

fixed and when additional financing may be needed. Some of these approaches may not be feasible when the value of the business has fallen enough that the aggregate value of the debt-like instruments and preferred stock liquidation preferences exceed the total business value. In this fact pattern, it is not possible to estimate the required rate of return for the debt-like instruments or preferred stock liquidation preferences directly, since the risk that the investors will not recover the full contractual amount owed is too high. When the expected cash flows for an instrument include many outcomes where the payoff is less than the contractual cash flows, the credit spreads for the contractual cash flows may exceed 50%. Instead, the valuation specialist may allocate the total enterprise value between the aggregate debt, debt-like preferred stock and preferred stock liquidation preferences⁴¹ and the remaining equity upside by treating the upside as a call option using an appropriate volatility and considering the time until the debt or senior preferred can force a redemption (sale or dissolution of the business in order to effect a recovery). The valuation specialist may then solve for the required rate of return for each tranche of the debt-like instruments or liquidation preferences by considering the senior tranche to have a required rate of return of $x\%$, the next tranche to have a required rate of return of $x\%$ with an adjustment factor, the next tranche to have a required rate of return of $x\%$ with two adjustments, and so on.

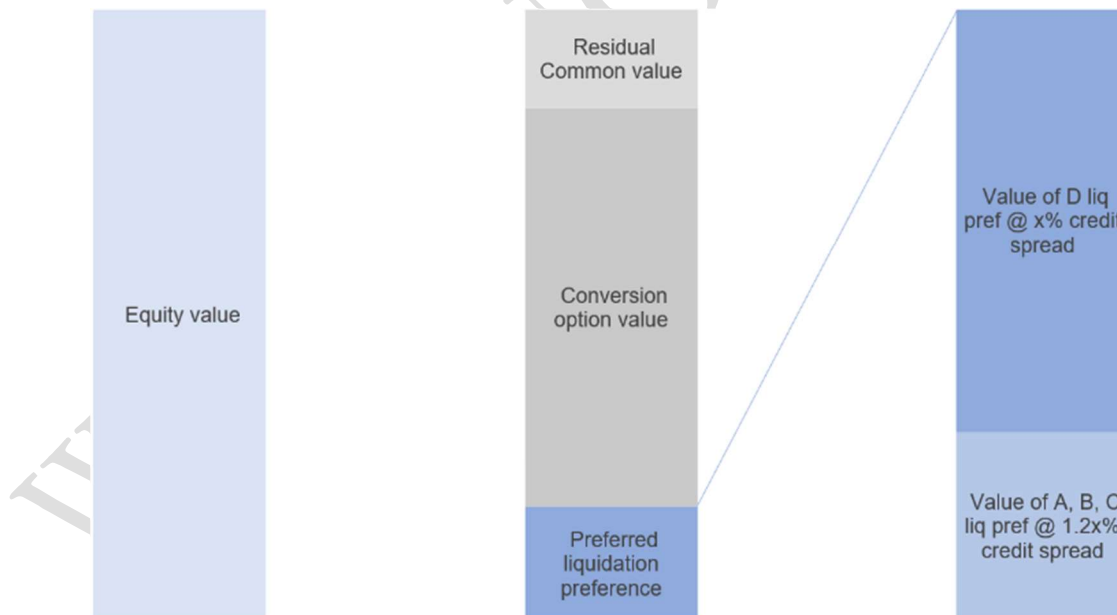
- 6.72** *Example* – This example illustrates one application of the debt-like preferred plus upside approach in a situation where the aggregate liquidation preference of preferred stock exceeds the total equity value of the company. Assume the same facts as in the example in paragraph 6.55, with a term of 6.0 years and volatility of 100%. A year later, the company has experienced a set-back and raises \$25 million in Series D as a *down round* at a transaction price of \$2.50 with a 2x liquidation preference. In addition, the Series A, B, and C were collapsed into the same seniority, while maintaining their original liquidation preference. To calibrate, the valuation specialist first estimated the total equity value and the value of the upside for each class considering the \$80 million aggregate liquidation preferences as the first breakpoint and then considering the conversion rights for each class on the upside. By considering the liquidation preferences in aggregate, the valuation avoids the issue of overstating the importance of seniority, considering that the junior preferred control the timing of exit.

Using this approach, the valuation specialist noted that the required rate of return could be calibrated in aggregate for the liquidation preferences for all preferred classes, such that the aggregate fair value equals the future liquidation preference discounted at this rate of return. However, to estimate the required rate of return for each class, it is necessary to make some assumption about the incremental rate of return required for each

⁴¹ Rather than including all the debt-like instruments and preferred stock liquidation preferences as the strike price for the call option as described in this paragraph, it is more typical to first subtract the fair value of debt for any debt-like instruments that are sufficiently collateralized that the yield method is feasible (for example, third-party debt), and then consider only the remaining allocable value with the remaining debt-like instruments and preferred stock liquidation preferences as the strike price to estimate the remaining equity upside. As always, the levered volatility appropriate to the allocable value included in the OPM should be used, unlevering using any debt or liquidation preference that is otherwise excluded from the allocation.

level of subordination between the classes (Series D as most senior, then Series C, B, and A next).

To estimate the required rates of return for the liquidation preferences for each class, the valuation specialist allocated the aggregate fair value of the liquidation preferences between classes using a subordination factor. The additional premium observed between securities with different credit quality tends to expand with higher credit risk – for example, the difference in credit spread between CCC and B rated bonds is typically higher than the difference between B and BB rated bonds. So rather than assuming that the credit spread for the most senior preferred is $x\%$ and the credit spread for each additional level of subordination is a fixed additive amount (such as 500 bps), in this example, the valuation specialist estimated that each additional level of subordination would increase the credit spread by a factor of 1.2x, based on the ratio between spreads from CCC+ (the lowest typically observable) and B– (a one notch improvement), at the measurement date. This approach applies a one notch subordination adjustment between each class of preferred. That is, the valuation specialist solved for the base spread $x\%$ and then assumed that each level of subordination would reflect a proportionately higher spread ($x\%$ for Series D, $x\% \times 1.2$ for Series C, B, and A). For example, if $x\%$ was a 15% spread, then the next tier would be 18% (300 bps increase), then the subsequent tier would be 21.6% (360 bps increase), and so on. The valuation specialist allocated the upside to each class in the OPM. The valuation specialist then solved for the breakpoint for each class and the total equity value of \$62.6 million corresponding to a Series D value of \$2.50 per share, as follows:



The valuation specialist then solved for the total equity value, credit spread for the Class D, and volatility, as follows:

- Value the aggregate preferred liquidation preferences for all classes, treating the aggregate upside as a call option given the total equity value and the future liquidation preference owed at the liquidity event (\$80 million, in this example).
- Allocate the aggregate liquidation preference value by class considering the subordination premium between each level of seniority.
- Value the Class D liquidation preference as the present value discounted at the risk-free rate plus the calibrated credit spread.
- Value the Class D upside based on its participation as a call option above its breakpoint at which it would be optimal for the Class D to convert (35.7% of the upside above \$140 million, in this example).
- Calibrate such that the aggregate value of the Class D equaled the transaction price (\$25 million, in this example).

This analysis resulted in the following values and implied credit spreads:

Option Pricing Model

Calibrated equity value	62,596,590
Aggregate preferred conversion right value	40,887,536
Aggregate liquidation preference value	11,580,045
Remaining allocable value	10,129,010
Total shares	5,000,000
Share price	2.03

	Class A	Class B	Class C	Class D	Common
Strike/Conversion price	1.00	2.00	5.00	5.00	n/a
Conversion right value	1.80	1.70	1.52	1.52	
Shares	5,000,000	5,000,000	3,000,000	10,000,000	5,000,000
Total call option value	8,993,814	8,481,150	4,556,175	15,187,250	0
Per share values					
Liquidation preference	0.12	0.24	0.60	0.80	
Conversion right	1.80	1.70	1.52	1.52	
N(d2) adjustment	0.11	0.15	0.19	0.18	
As converted					2.03
Total	2.03	2.08	2.31	2.50	2.03
Shares	5,000,000	5,000,000	3,000,000	10,000,000	5,000,000
Total value	10,149,463	10,402,370	6,915,748	25,000,000	10,129,010
Implied spread	41.0%	41.0%	41.0%	34.2%	
Selected discount rate	42.5%	42.5%	42.5%	35.7%	

Dilution from Future Financings

6.73 In general, because the OPM considers the evolution of the equity value without allowing for proceeds raised in additional financings, the allocation does not include the dilution impacts of any additional financings, nor the offsetting cash raised.⁴² The total equity value used in the allocation therefore considers the current invested capital and current outstanding shares, rather than considering the full range of value that might be realized

⁴² More sophisticated lattice or simulation models that consider future financings as a function of the change in value of the company over time are also feasible; however, the assumptions regarding the terms and conditions of future financing rounds may be speculative and difficult to estimate.

at the liquidity event and the additional financings and additional shares that would be required to achieve that range of exits. However, if the company was in negotiations for the issuance of the preferred stock as of the valuation date, the OPM would typically include both the proceeds and the shares of the to-be-issued preferred stock. Similarly, the OPM will generally include the future tranches of the preferred stock that have already been negotiated as of the valuation date. For a tranced preferred structure where the future tranche or tranches are conditioned on meeting certain milestones, it would be appropriate to use a hybrid method considering the likelihood of success and the preferred stock value contingent on success and the likelihood of failure and the preferred stock value contingent on failure, including all the tranches of preferred in the success scenario and only the first tranche in the failure scenario. See appendix A, paragraphs A.07.01–.11, “Dilution,” for additional discussion of the dilution impacts of future financing rounds.

Dilution from Stock-Based Compensation Awards

- 6.74** The equity value used in the OPM is measured considering the enterprise value based on the cash flows under current ownership and the required rate of return for the investors who in aggregate have control of the business, less the value of debt for the purpose of valuing equity. As discussed in chapter 7, the enterprise value measured on this basis typically is equivalent to the enterprise value that could be realized upon a sale to a third party (that is, the controlling enterprise value), since the controlling investors could sell the business immediately if it were optimal to do so. This value would also be consistent with the enterprise value implied by calibrating to the latest preferred stock financing and then adjusting for any changes in value between the transaction date and the measurement date.
- 6.75** In the Expense Treatment for stock-based compensation as discussed in paragraphs 5.11–.23, the enterprise value for the business should be measured considering the fully-loaded compensation costs (including stock-based compensation costs), since a third party buying the business would also expect to incur stock-based compensation costs. Therefore, the dilution impact from outstanding in-the-money stock-based compensation awards should be measured using the intrinsic value of these awards, excluding any option value that may be realized over the remaining expected time to the liquidity event. For FASB ASC 718 purposes, the value that the stock-based compensation derives from the potential upside over the remaining expected time to the liquidity event would be considered to be incremental, not dilutive. Please see paragraphs 5.11–.23 for further discussion of these concepts and the application in simple capital structures.
- 6.76** *Example – Using the Intrinsic Value Method for a VC-Backed Business with Options – Calibrated Equity Value.* A venture-capital backed business raised \$15 million of Series C financing at a price of \$5 per share. Previous rounds included \$10 million in Series B at \$2 per share and \$5 million in Series A at \$1 per share, as well as 5 million shares of founder common stock. The preferred stock were issued pari passu. In addition, the company has 1.5 million employee stock options outstanding with a weighted average exercise price of \$0.50 per option. To calibrate the equity value using the OPM and considering only the intrinsic value of the stock-based compensation, consistent with the

value that a third party would pay for the business, the valuation specialist would include the options as full shares of common stock, iteratively solve for the equity value that corresponds to the Series C price using the OPM, and then subtract the aggregate option strike. In this example, considering 7 years to liquidity with a volatility of 100%, the resulting equity value using the OPM and measured considering the stock-based compensation as an expense is \$85.4 million.

Capital Structure							
Capital structure	Number of shares	Purchase price per share	Liquidation preference	Conversion ratio	Seniority	Value per share	Total value
Class A	5,000,000	1.00	5,000,000	1.00	1	4.32	21,596,495
Class B	5,000,000	2.00	10,000,000	1.00	1	4.46	22,306,299
Class C	3,000,000	5.00	15,000,000	1.00	1	5.00	15,000,000
Common stock	5,000,000					4.20	20,991,634
Common options	1,500,000					4.20	6,297,490
Total shares	19,500,000						
Term	7 years		Calibrated Equity Value, intrinsic value method including strike price plus intrinsic value of SBC				\$86,193,918
Volatility	100%		Less: Aggregate strike (\$0.50 * 1.5m options)				(\$750,000)
Risk-free rate	1.50%		Equity Value treating SBC as an expense				\$85,443,918
			Intrinsic per share option value				3.70
			Intrinsic total option value				5,547,490

6.77 *Example (continued) – Using the Intrinsic Value Method for a VC-Backed Business with Options – Valuation of Stock-Based Compensation Awards.* When the company issues new options (new stock-based compensation awards), these options typically would be issued with an “at-the-money” strike price based on the common stock value derived from the preceding analysis adjusted for a discount for lack of marketability (if applicable). The valuation specialist typically would then use a Black Scholes model to value the options considering the underlying common stock price adjusted for the discount for lack of marketability (if applicable), strike price, expected term (often based on the simplified method), common stock volatility and risk-free rate. There is no need to consider the dilution impact of the stock options, since the equity value was already measured considering stock-based compensation as an expense. Please see paragraphs 5.11–.23 for additional discussion.

6.78 *Example (continued) – Using the Intrinsic Value Method for a VC-Backed Business with Options –Updating the Equity Value at Subsequent Measurement Dates.* Since the options are not valued directly within the OPM when using the intrinsic value method, there is no need to also estimate the equity value inclusive of stock-based compensation. Instead, the equity value in future periods would be calibrated to the equity value of \$77.8 million measured by treating stock-based compensation as an expense, and then adjusted for changes in the company and changes in the markets between the measurement dates. The valuation specialist would then allocate this equity value using the intrinsic value method to incorporate outstanding options, consistent with the approach used at the financing date. Please see paragraphs 5.11–.23 for additional discussion.

Adjustments to the Allocated Value for Specific Classes of Securities

6.79 After allocating the equity value to the preferred and common stock, the valuation specialist should consider whether any additional discounts are appropriate (for example, discounts for illiquidity or lack of marketability). See chapter 7 for a discussion of these adjustments.

Implementation Considerations

- 6.80** *Value Allocated to the Preferred Stock Liquidation Preferences and Implied Credit Spreads for the Preferred Stock Liquidation Preferences.* An important check is to ensure that the value allocated to the preferred stock liquidation preferences are consistent with market participant assumptions and the implied credit spreads for the preferred stock liquidation preferences are consistent with the required rates of return that investors typically demand for venture capital debt. If the implied credit spread on the preferred liquidation preferences is lower than the spreads implied by the required rates of return for venture capital debt, then the value of the preferred stock liquidation preferences is likely overstated and the corresponding value of the common stock is likely understated.
- 6.81** *Calibration or Reconciliation to Recent Transactions or Valuations as of Previous Valuation Dates.* Another important consistency check is that the valuation model indicates values for the various classes of equity that are calibrated to the most recent preferred stock financing or secondary transactions, if applicable, or reflect a reasonable trend in values given the changes in the company and the changes in the markets between the previous valuation date and the measurement date. In situations where the secondary transactions are not regarded as the sole basis for the valuation (see chapter 8 for discussion), it still would be appropriate to ensure that the difference between the model values and the transaction prices is reasonable and that the valuation specialist can quantitatively or qualitatively explain the reasons that market participants in the secondary market would pay a significantly different price than the model value. In particular, if the model indicates that the value of the securities is substantially lower than the transaction prices in the secondary market, that may be an indication that the model values are not reasonable.

Advantages and Limitations

- 6.82** An advantage of the OPM is that it explicitly recognizes the option-like payoffs of the various share classes, using information about the underlying asset (that is, the value and estimated volatility) as well as the contractual option-like payoff structure to allocate value. A disadvantage of the OPM is that it considers only a single liquidity event and assumes that the timing of exit is independent of the equity value and, therefore, does not fully capture the characteristics of specific potential future liquidity events (for example, IPO or sale) at various time horizons and the lower likelihood of mid-value exits where the liquidation preferences matter.
- 6.83** The OPM (or a related hybrid method) is an appropriate method to use when specific future liquidity events are difficult to forecast. That is, the use of the method may be appropriate in situations in which the enterprise has many choices and options available, and the enterprise's value will evolve depending on how well it follows an uncharted path through the various possible opportunities and challenges. If the distribution of outcomes is expected to be bimodal (for example, reflecting two outcomes in which a technology or product either succeeds and results in a very high return, or fails and results in a zero payoff to all equity holders), a scenario-based method or hybrid method may be more appropriate.

- 6.84** The primary limitation of the OPM is that it assumes that future outcomes can be modeled using a lognormal distribution where the timing of exit is independent of the equity value. Since investors often delay exits until conditions are favorable, this assumption may not be borne out in practice. In addition, like other valuation methodologies that rely on unobservable inputs, the OPM is sensitive to certain key assumptions, such as the volatility assumption (one of the required inputs under the Black-Scholes model), that are not readily subject to contemporaneous or subsequent validation. The lack of trading history for privately held enterprises makes the subjectivity of the volatility assumption a potential limitation on the effectiveness of the method to estimate fair value. See appendix A, paragraphs A.11.01–.09, “Estimating Volatility for Privately-Held Companies,” for further discussion.
- 6.85** Despite the implementation challenges inherent in OPM, traditional OPM or variants of the OPM as discussed in paragraph 6.54 or a hybrid method as discussed in paragraphs 6.86–.95 may be reasonable alternatives to a scenario-based method, especially when the company needs additional financing. In situations where the company needs additional financing, a scenario-based method might need to consider upside and downside financings leading to upside and downside IPO or M&A or dissolution scenarios, requiring multiple scenarios to capture the changes in the capital structure and ultimate payoffs to each class. Therefore, using a variant of the OPM as discussed in paragraph 6.54 that more correctly captures the risk in the preferred stock liquidation preferences would still be a reasonable approach for many companies.

Hybrid Methods

- 6.86** The hybrid method is a hybrid between scenario-based methods and the OPM, estimating the probability-weighted value across multiple scenarios but then allocating the value within one or more of those scenarios using a lognormal distribution of values in a risk-neutral framework (as is used in the OPM).
- 6.87** The hybrid method can be a useful alternative to explicitly modeling all scenario outcomes in situations when the company has transparency into one or more near-term exits but is unsure about what will occur if the current plans fall through. For example, consider a firm that anticipates an 80% probability of an IPO in nine months; however, if the IPO falls through due to market or other factors, the chances for a liquidity event are much more uncertain, and the firm is expected to remain private for three years. Under these circumstances, it might be appropriate to use a hybrid method. The value of the share classes under the IPO scenario might be based on the expected pricing and timing of the anticipated IPO explicitly modeling this scenario. Then, an OPM with a three-year time to liquidity might be used to estimate the value of the share classes, using the conditional equity value assuming the IPO does not occur. In this instance, the resulting share values under each scenario would be weighted considering the extent to which market participants would value the securities on an as-converted (CSE) basis.
- 6.88** Another example in which a hybrid method may be appropriate would be if the enterprise is in negotiations with investors and expects to close a new financing round at \$4 per share in six months if it achieves a technical milestone. However, if the financing does

not occur, the company will likely close its doors and no classes of equity will receive a return. Under these circumstances, it might be appropriate to calibrate the equity value contingent on the successful financing to the expected equity transaction using the OPM to solve for the equity value and corresponding value of each class of equity based on the \$4 per share expected price for the new financing round. The resulting preferred and common stock values would then be weighted by the probability of achieving the technical milestone and discounted at a risk-adjusted discount rate for six months to estimate the value of each class of equity as of the valuation date.

- 6.89** Additional examples of situations in which a hybrid method would be appropriate were discussed previously in connection with scenario-based methods and OPM. See paragraphs 6.25*b*, 6.31, 6.43, 6.54*c* and 6.59.
- 6.90** In applying a hybrid method, the valuation specialist will typically use a different current equity value within each of the relevant scenarios. For example, suppose there is a 40% probability that the enterprise will obtain a contract with a major customer and will then be able to complete an IPO in one year and a 60% probability that the enterprise will not get this contract and, instead, choose to exit via a sale in two years. In this situation, the equity value used in the IPO scenario would be higher than the equity value used as an input to the OPM in the sale scenario, and the overall current equity value would reflect the weighting between the two. Similarly, suppose that there is no recent financing and the valuation specialist's best estimate of the overall current equity value considering all the risks is \$50 million. In addition, the valuation specialist estimates that there is a 20% chance that the enterprise will not obtain financing and uses a hybrid method to explicitly model this scenario. Furthermore, suppose that if the enterprise does not obtain financing, it will dissolve, returning \$5 million to the investors. In this situation, the equity value in the success scenario is higher than the overall equity value because the \$50 million equity value is the weighted average between the two scenarios. More specifically, the equity value in the success scenario would be \$61.25 million, calculated as the \$50 million overall equity value, less the value from the dissolution scenario (20% multiplied by \$5 million), divided by the probability of the success scenario (80%). A best practice is to reconcile the probability-weighted present values of the future exit values to the overall equity value for the enterprise, estimated as discussed in paragraph 5.02, to make sure that the overall valuation of the enterprise is reasonable.

Example – Calibrating to a Crossover Financing for a Company Approaching IPO

- 6.91** One widely used form of a hybrid method may be considered when the company is approaching an IPO but there is still risk that the IPO will fall through. In this situation, the valuation specialist may consider a hybrid method with two scenarios: the IPO scenario (or CSE scenario), valuing the securities on a CSE basis, and a delayed exit scenario (or OPM scenario), valuing the securities assuming that market participants would assign value to the liquidation preferences. If there is a recent preferred stock financing, the valuation specialist would typically assume that the preferred stock value is the same in both scenarios, using a higher total equity value in the IPO scenario where the common stock has the same value as the preferred and a lower total equity value in the delayed exit scenario where the common stock has a lower value than the preferred. It

would generally not be appropriate to use a single overall equity value in the two scenarios, since the IPO scenario should be regarded as a success scenario and using the same total equity value in both scenarios would imply that the preferred stock investors would take a loss in the IPO scenario. It also typically would not be appropriate to assume that the preferred stock would be worth more in the IPO scenario than in the delayed exit scenario, since the preferred stock investors would expect to receive an adequate return even if the exit is delayed, and since modeling a preferred stock value that is lower than its liquidation preference exacerbates the issue of OPM overstating the value of the downside protection. If the IPO scenario is expected to provide a significantly higher payoff than the delayed exit scenario, so that the preferred stock value would be expected to be much higher than the liquidation preference in this scenario and lower in the delayed exit scenario, then it may be appropriate to use a hybrid method in combination with the debt-like preferred plus upside or other variants of the OPM so that the overall implied yield on the preferred stock liquidation preferences falls within a reasonable range.

Example – Business Facing Potential Restructuring

- 6.92** Another application of the hybrid method may be considered when the rights of the securities are likely to be renegotiated. For this example, suppose that a private equity-backed manufacturing business was acquired for a \$750 million nominal purchase price including \$500 million in third-party debt, \$125 million in participating preferred units funded by the private equity investor and \$125 million in junior participating preferred units issued as rollover equity to the sellers. In addition, the company planned to issue common units (profits interests) as stock-based compensation that participate alongside the preferred units after the preferred units receive a return of capital. When calibrating to this transaction, the valuation specialist estimated that the fair value of the debt-like component of the preferred as \$50 million for the senior preferred and \$33 million for the junior participating preferred, implying a total enterprise value of \$733 million and a value for the equity component of the preferred units at \$150 million. The valuation specialist considered the per unit value of the \$150 million equity component of the preferred units when estimating the per unit value of the common units that the company subsequently issues as stock-based compensation, on a marketable basis before any adjustment for differences in non-economic rights. The common units represent 10% of the total equity and the value was modeled as incremental to the \$733 million total enterprise value implied by the transaction.
- 6.93** Three years later, the business had experienced a significant decline in value, to approximately \$450 million, and was in violation of the covenants on the third-party debt. The company initiated an out-of-court renegotiation with the debt holders to resolve the situation. The company also needed an updated valuation of the common units in connection with retaining a new CEO. Based on the status of negotiations at the grant date, the valuation specialist considered two scenarios for the potential restructuring:
- The senior preferred investors would pay \$150 million to pay down the debt, curing the covenant violation and reducing the debt balance to \$350 million. They would retain a \$275 million liquidation preference. In exchange for not having to contribute

additional capital to cure the covenant violation, the junior preferred investors would agree to eliminate their liquidation preference and be converted to common units.

- The debt holders would take ownership of the company, restructuring into senior debt with a \$200 million face value and converting the remainder to receive 90% of the equity. The original senior preferred investors would receive 4.5% of equity, the original junior preferred investors would receive 4.5% of the equity in the form of warrants that begin participating at a total enterprise value of \$625 million, and the common unit holders would receive 1% of the equity in the form of warrants that begin participating at a total enterprise value of \$750 million.

The valuation specialist estimated the fair value of the new common units using a hybrid method, considering a three-year expected time to liquidity and a \$625 million participation threshold in the first scenario and a five-year expected time to liquidity and a \$750 million participation threshold in the second scenario. The valuation specialist also considered the fair value of the third-party debt and the liquidation preferences for the preferred in each scenario, based on a separate analysis of the credit risk post restructuring in each scenario, and considered the leverage when estimating the volatility for each scenario. Finally, the valuation specialist estimated the fair value of the new common units as the weighted average between the scenarios.

Implementation Considerations

- 6.94** In a hybrid framework, it is still important to reconcile the preferred stock values to the most recent transaction (subject to adjustments, as described in paragraphs 8.25–.29, 8.30 and 8.56–.61). This process involves developing the framework of the future scenarios, as described previously, and then calibrating the current equity values and probabilities for each scenario such that value for the most recent financing equals the amount paid.

Advantages and Limitations

- 6.95** An advantage of hybrid methods is that they take advantage of the conceptual framework of option pricing theory to model a continuous distribution of future outcomes and capture the option-like payoffs of the various share classes while also explicitly considering future scenarios and the discontinuities in outcomes that early-stage companies experience. A disadvantage is that these valuation models may require more subjective assumptions than the OPM and may be more complex to implement.

Special Case Methods

- 6.96** In addition to the primary methods discussed previously in this chapter, there are two special case methods that may be appropriate in certain limited circumstances. A more detailed discussion of each of these special case methods follows.

Common Stock Equivalent (CSE) Method

- 6.97** Under the CSE method, the value of the various equity securities is estimated based on their pro rata share of the total equity value for the company, considering the number of

common-stock equivalents that would be required to be issued if all outstanding classes of preferred equity in the current capital structure were converted and all in-the-money options were exercised.⁴³ This approach models each class of equity on an as-converted basis and then multiplies by the common-stock-equivalent price, updated for each measurement date considering the changes in the enterprise and changes in the markets as described in paragraph 6.100. The pro rata share of the total equity value is sometimes referred to as the *fully-diluted value of equity*.

- 6.98** The CSE method may be appropriate if the distribution of outcomes for the enterprise is expected to be bimodal with no value on the downside, that is, if the enterprise is either expected to succeed, exiting at a value that is high enough that all classes of equity will convert, or fail, exiting at a low value that would provide no payoff to the existing classes of preferred.⁴⁴ This approach may also be appropriate if market participants would assume that it is highly likely that the preferred stock would convert and transact on an as-converted basis, which may be the case for companies that are expected to exit via an IPO or when the later rounds have additional preferences but the earlier rounds have control over the timing of exit. In these situations, the liquidation preferences for the preferred stock would be expected to have no impact on the ultimate payoff realized and, thus, the future payoffs would be consistent with a fully-diluted approach for measuring the value of the equity interests on the measurement date.
- 6.99** The CSE method will imply that common stock has the same value as preferred stock on an as-converted basis, except for any differences in noneconomic rights that may be captured via a discount for lack of marketability, if applicable.⁴⁵ This conclusion is consistent with instances of pricing for common stock relative to preferred in some companies that have observable secondary market activity, as discussed in chapter 8. This approach may also be considered as one of several scenarios within the scenario-based method or hybrid method.
- 6.100** The equity value used as an input in the CSE method would be calibrated to the latest financing round, secondary transactions, if applicable, or reconciled to the valuation as of the previous valuation date and then updated for each measurement date, considering (a) the changes in the company and markets, (b) the changes in the expected future exit value in the "success" scenario, and (c) the changes in market participants' required rate of

⁴³ The CSE method typically includes the intrinsic value for in-the-money options. The aggregate equity value is estimated based on the number of common stock equivalents including in-the-money options, less the aggregate strike price for those options.

⁴⁴ See Q&A 10.48, "Value of Liquidation Preferences," for a discussion of the reasons why the *liquidation preferences* for early rounds of financing are unlikely to receive a direct economic payoff. See Q&A 10.49, "Is Postmoney Value the Same as the Fair Value?" for a discussion of considerations around using the CSE method to estimate the total equity value.

⁴⁵ See Q&A 10.58, "Discounts for Lack of Marketability and Control When the Enterprise Has a Simple Capital Structure," for a discussion of discounts for lack of marketability (DLOMs) in simple capital structures. Similar factors would be considered when assessing whether a DLOM would be applicable to common stock in a CSE method or IPO scenario within a scenario analysis.

return for the equity interests. A useful check in estimating the equity value for the CSE method is to consider what price the investors would be willing to pay if the company were to raise an additional round of financing on the measurement date.

- 6.101** Typically, the CSE method is calibrated to the most recent transaction date or reconciled to the valuation as of the previous valuation date and then updated to reflect the changes in the equity value through the measurement date. If the equity value considering common-stock equivalents is estimated by considering a future exit value, then these methods should incorporate an estimate of the dilution from future rounds of financing required to reach that exit. See appendix A, paragraphs A.07.01–.11, “Dilution.”
- 6.102** The primary advantages of the CSE method are that it is simple and avoids overstating the value of the preferred stock liquidation preferences in situations where market participants would not assign much value to these rights. The primary disadvantage of the CSE method is that it may oversimplify in situations where market participants would assign value to downside protection or other features that this method does not consider.

The Current Value Method

- 6.103** The CVM of allocation is based on first estimating equity value on a controlling basis, assuming an immediate sale of the enterprise, and then allocating that value to the various series of preferred stock based on the series’ liquidation preferences or conversion values, whichever would be greater. The CVM is easy to understand and relatively easy to apply, thus making it a method frequently encountered in practice. However, given the way in which market participants realize value from private company investments, the task force believes it is appropriate only when a transaction is imminent. Note that allocating value pro rata to the various classes of equity based on their as-converted values or common stock equivalents would be reasonable if market participants would assume that the liquidation preferences would have no impact on the ultimate payoffs received. This method would be considered a CSE method, which is described in paragraphs 6.97–.102.
- 6.104** The fundamental assumption of this method is that the manner in which each class of preferred stockholders will exercise its rights and achieve its return is estimated based on the enterprise value as of the valuation date, not at some future date. Accordingly, depending upon the enterprise value and the nature and amount of the various liquidation preferences, preferred stockholders will participate in equity value allocation either as preferred stockholders or, if conversion would provide them with better economic results, as common stockholders. Convertible preferred stock that is “out-of-the-money”⁴⁶ as of the valuation date is assigned a value that takes into consideration its liquidation preference. Convertible preferred stock that is “in-the-money” is treated as if it had converted to common stock. Common shares are assigned a value equal to their pro rata

⁴⁶ Convertible preferred stock is “out-of-the-money” if conversion to common stock would result in a lower value of the holdings of preferred stockholders than exercising the liquidation preference. Conversely, convertible preferred stock is “in-the-money” if conversion to common stock would result in a higher value of the holdings of preferred stockholders than exercising the liquidation preference.

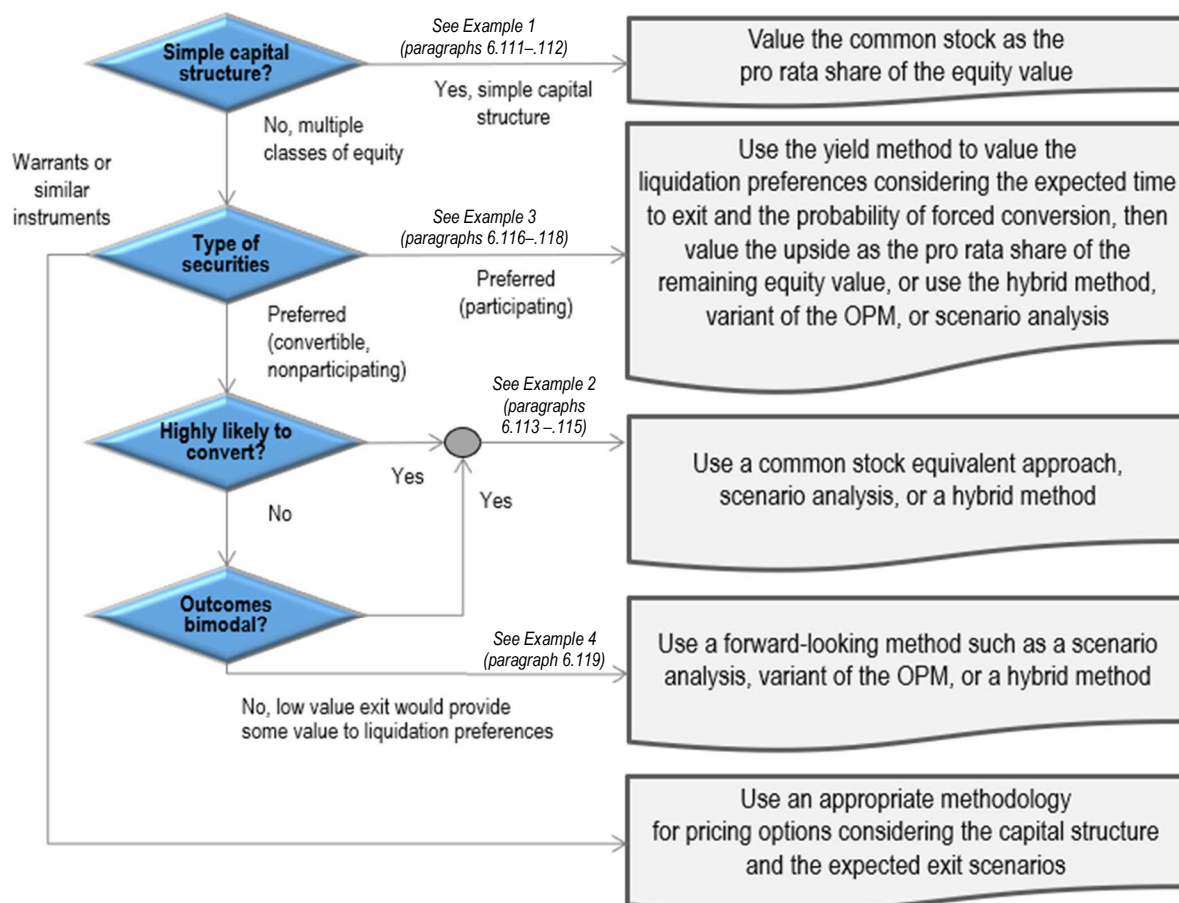
share of the residual amount (if any) that remains after consideration of the liquidation preference of "out-of-the-money" preferred stock.

- 6.105** The principal advantage of this method is that it is easy to implement and does not require assumptions about future exits or the use of complex tools. The method assumes that the value of the convertible preferred stock is represented by the most favorable claim the preferred stockholders have on the equity value as of the valuation date.
- 6.106** However, this method often produces results that are highly sensitive to changes in the underlying assumptions. Another limitation of the method is that it is not forward looking and fails to consider the option-like payoffs of the share classes and, therefore, may not appropriately reflect the way that market participants would realize value from private company investments. That is, absent an imminent liquidity event, the method fails to consider the possibility that the value of the enterprise will increase or decrease between the valuation date and the date at which common stockholders will receive their return on investment, if any.
- 6.107** Because the CVM focuses on the present and is not forward-looking, the task force believes it is appropriate when a liquidity event in the form of an acquisition or a dissolution of the enterprise is imminent, and expectations about the future of the enterprise as a going concern are virtually irrelevant. In this circumstance, the CVM value, adjusted if necessary for the timing and risk associated with the expected transaction, would reflect the fair value of the equity interests.
- 6.108** The CVM may also be used to estimate the intrinsic value of outstanding stock-based compensation. The value of stock-based compensation frequently includes the potential for additional upside participation (option value) that may be realized over time. The value of this potential for additional upside participation should be considered incremental, not dilutive, to the investor interests. If the investors were to sell the enterprise on the measurement date, their position would realize the allocated value from the CVM (the CVM value). Therefore, the value of the investor interests would typically not be lower than the CVM value, and the dilution impact for the stock-based compensation would consider only the intrinsic value. The incremental value of stock-based compensation given the expected time to liquidity would be added to the equity value used in the allocation using an appropriate methodology. See paragraph 6.74–.78 for further discussion.
- 6.109** Note that for simple capital structures, it is possible to allocate the enterprise value by directly estimating the value of any debt and debt-like preferred instruments using the yield method, subtracting those values from the total enterprise value, then allocating the residual equity value pro rata to the common stock, as discussed in chapter 5. Unlike the CVM, the yield method is a forward-looking method that estimates the value of the debt and debt-like preferred instruments for the purpose of valuing equity, given the market yield for these instruments over the expected duration, considering the risk of the instruments. This method may also be applicable for valuing participating preferred stock by considering the fair value of the debt-like component of the preferred stock corresponding to the liquidation preference, plus the fair value of the upside participation

as a common stock equivalent. See paragraphs 4.12–.21 for a discussion of the yield method. It would generally not be appropriate to use the CVM to estimate the fair value of debt and debt-like preferred instruments based on their recovery value.

Considerations in Selecting a Methodology for Valuing Equity Securities

6.110 The following flowchart and examples provide an overview of the factors that the valuation specialist may wish to consider when selecting a valuation approach for investments in equity interests for most situations. Note that when a liquidity event is imminent, a CVM may be appropriate; and, therefore, the valuation specialist may not need to consider the flowchart.



Example 1: Simple capital structure

6.111 In a simple capital structure (that is, when all outstanding shares are common or equivalents with the same rights and preferences), the fair value of the common stock equals the pro rata share of the total equity value. Because all investors have the same class of equity, more complex valuation models such as scenario analysis or OPM are not required to allocate the equity value to the interest. When the company is ultimately sold or goes public, all investors will receive a pro rata share of the value that is realized.

- 6.112** The allocation between shareholders will not be affected by the distribution of future outcomes (as could be the case if certain classes of equity were afforded downside protection under low-value outcomes, but others were not). Therefore, the equity value can be measured considering the expected cash flows under current ownership through the future liquidity event and the investors' required rate of return. Typical valuation practice is to estimate the fair value of the equity interest by measuring the enterprise value and subtracting the value of debt for the purpose of valuing equity. See chapter 5 for further discussion.

Example 2: VC-backed entity with bimodal outcomes or high probability of conversion

- 6.113** *Venture capital funds* typically make initial investments in the form of Series A preferred stock with a 1x liquidation preference. The preferred stock is generally convertible into common stock on a 1:1 basis. The price of the preferred stock is typically negotiated using an agreed-upon postmoney value for the enterprise measured on a CSE basis. For example, if the agreed-upon postmoney value is \$10 million and there will be 10 million common-stock equivalent shares outstanding upon closing, the preferred stock would be priced at \$1 per share. The founders often retain shares in the common stock in the enterprise, and later hires are typically granted options on the same shares.
- 6.114** As time passes, new rounds of financing are often used to fund operations to the point where the company either fails or reaches sustained profitability. If the company is progressing well, new rounds of financing will typically have a structure similar to the original financing (that is, 1x liquidation preference, no dividends and pari passu with earlier rounds), but each subsequent round may have a higher purchase price and, hence, a higher liquidation preference.
- 6.115** When market participants would assume that it is highly likely that the preferred will convert at the liquidity event, or if the company is at such an early stage that the outcome is likely to be bimodal (that is, there are no outcomes in which the liquidation preferences matter), using the fully diluted equity value and allocating the equity value to the preferred and common stock on an as-converted basis may be appropriate because the value of the liquidation preference is negligible in this case.⁴⁷ For valuing common stock, however, valuation specialists more often consider a method such as a scenario analysis, OPM or hybrid method, that considers the value of the downside protection for the preferred stock as well as the potential for upside participation, resulting in different values for the different classes of equity.

Example 3: Capital structure with participating preferred

- 6.116** In some cases, the company's capital structure may consist of participating preferred (that is, preferred instruments with participation rights). In this structure, the preferred stock holders will share in the upside on an as-converted basis without having to forgo the

⁴⁷ In addition, for a bimodal investment, when the low case is close to zero, the volatility would be essentially infinite. Using an extremely high volatility in an OPM model would also result in similar values for preferred and common shares.

liquidation preference for the interest (unless forced to convert at an IPO). This structure is used for many PE-backed companies and some VC-backed companies. When the enterprise is sold, the proceeds are typically distributed by first repaying the liquidation preferences for each participating preferred class of equity, then allocating the remaining value to all classes on an as-converted basis. Therefore, one approach for valuing the common stock in such an entity would be to consider the participating preferred as two components: a debt-like preferred instrument corresponding to the liquidation preference, plus an as-converted interest in the common.

- 6.117** In valuing the common stock in such a structure, it is important to consider explicitly both the probability of conversion and the present value of the liquidation preferences, given the expected time to liquidity. As such, the CVM would generally not be an appropriate approach in this situation, and it may be necessary to model the complex payoff structure using a scenario analysis, OPM, or hybrid approach. The OPM approach may be particularly appropriate if the liquidation preferences represent the majority of the total equity value, creating leverage that is much higher than is observable in the public debt markets as described in paragraph 4.30, footnote 30 in paragraph 6.54(d) and paragraphs 6.71–.72. In this case, the upside participation for the participating preferred and the common stock effectively have only option value, and the fair value of the liquidation preference can be measured as the total equity value less the option value for the upside, considering the expected time horizon of the investment. In lower leverage situations, the present value of the liquidation preferences may be estimated via the yield method, considering the payoff at the liquidity event (including accrued dividends, if any) discounted at an estimate of the required rate of return for those cash flows. The remaining value would then be allocated on an as-converted basis.
- 6.118** In a qualified IPO, the agreement may specify that the participating preferred instruments will automatically convert to common shares and lose their liquidation preference.⁴⁸ In these cases, the value of a liquidation preference in a participating preferred instrument may be estimated by considering the probability of a sale or other exit in which the preferred stock will retain its liquidation preference and multiplying that probability by the present value of the liquidation preferences. For valuing common stock in these cases, it is most appropriate to use a scenario analysis or hybrid method including one or more scenarios where the preferred is forced to convert and one or more scenarios where preferred keeps its liquidation preference and participation rights.

⁴⁸ Participating preferred may be used both in partnership or limited liability company (LLC) structures and in corporate structures. Automatic conversion upon an IPO is more often specified in the articles of incorporation in corporate structures because it is possible for a corporation to complete an IPO without restructuring; however, investors in IPO markets typically will not agree to retain a capital structure under which outstanding preferred stock has seniority over common stock. For partnership and LLC structures, because these entities generally cannot complete an IPO directly but, instead, must convert to a corporation or complete an IPO for a related entity that is structured as a corporation, the original partnership or LLC that issued the participating preferred may continue to exist and have the right to repayment of the liquidation preference, typically via conversion into common stock based on the price of the common stock at the conversion date. As always, it is important to consider the specific rights and preferences for the investment when performing the valuation.

Example 4: Established company in which the liquidation preferences have value

6.119 For more established companies with complex capital structures, when the value of the enterprise would be expected to rise or fall more smoothly based on the company's performance, the liquidation preferences for preferred stock may become more meaningful to the valuation. If the senior classes have a mandatory redemption feature or put right, the holders of those classes would have the right to force the company to pay them back on the downside, even if the holders of junior classes would prefer to wait in hopes of a higher value exit. Liquidation preferences may also have value for VC-backed companies that have made enough progress that senior classes of equity would receive some value in a low-value sale or sale of assets (dissolution scenario), but that have not yet reached the point where it is highly likely that all classes of equity would convert. In these cases, because the outcome is generally not bimodal, it would be appropriate to consider the difference in value between the common stock and the preferred stock using a forward-looking method such as a scenario analysis, OPM, or hybrid method to value the equity interests in the enterprise, capturing the effect of the liquidation preferences considering the protection provided in the downside scenarios.

Other Factors to Consider

6.120 In valuing equity securities in enterprises with complex capital structures, it is important to consider the negotiation dynamics that led to the inclusion of additional preferred features and their ramifications in assessing the relative value of prior rounds. The following list describes a few additional factors that may be considered when assessing the appropriateness of a valuation methodology:

- a) If the preferred classes have differing seniority, it is important to consider why the seniority was negotiated and who controls the decision about the nature and timing of the ultimate liquidity event (for example, can the junior preferred investors initiate an IPO that forces conversion for the senior preferred, even if converting would not be optimal for the senior investors? Is there a possibility that the company would need another round of financing that would subordinate the current senior class?) If new investors negotiated for seniority or greater than a 1x liquidation preference, the negotiations themselves may provide an indication that the liquidation preferences matter, so assuming a de minimis value for the liquidation preferences may not be reasonable. However, as discussed in paragraphs 6.50–.54, care must be taken to avoid overstating the value of such liquidation preferences.
- b) If the latest round of financing was sold with warrant coverage or a greater than 1x conversion ratio, then the price per common stock equivalent is lower than the nominal price per share from the financing. In these cases, care must be taken to assess the impact of these additional features when estimating the total equity value or CSE value and the implications for the valuation of the other classes of equity.

- c) When the value of the company has declined since the latest round, but the holders of the preferred stock do not intend to sell or do not unilaterally have the ability to sell the enterprise on the measurement date, it would generally be appropriate to consider a decline in the value of the preferred stock as well as a decline in the value of the common stock, rather than assuming the full decline in value is borne by the common stock. The decline in the overall enterprise value implies that the preferred stock is in a position of more risk, while the common stock may still benefit from the upside if the enterprise value recovers.
- d) If the structure of the liquidation preferences is complex and there are plausible exit scenarios with values near the threshold where the junior preferred begin participating, it may be most appropriate to use a hybrid method combined with adjustments that capture the risk of the liquidation preferences in each scenario to model the impact of the liquidation preferences on the values of the senior and junior preferred classes and the corresponding value for the common stock.
- e) If the valuation indicates that the liquidation preferences are unlikely to have value in any exit scenarios, then the cash flows for all the classes of equity, including the common stock, would be the same. However, different classes of equity may still have different values if market participants investing in junior securities would require a higher rate of return due to increased risk or if certain classes lack information rights, tag along rights and other protections that investors typically expect. See chapter 7 for additional discussion.

Chapter 7

Control and Marketability

- 7.01** In standard valuation theory, the value of an enterprise or the equity securities in an enterprise may be measured on a controlling or *minority interest* basis and on a marketable or nonmarketable basis. Therefore, it is important to consider control features and the degree of marketability of the securities being valued when estimating the *fair value* of a minority interest in an enterprise.
- 7.02** In a valuation of an interest in a privately held enterprise, the objective of the analysis is to value the securities within the enterprise rather than the enterprise itself (that is, the unit of account is a single share). However, the value of the enterprise, subject to the considerations discussed in earlier chapters, may help inform judgments regarding the value of individual securities. As discussed in chapters 5, “Valuation of Equity Securities in Simple Capital Structures,” and 6, “Valuation of Equity Securities in Complex Capital Structures,” market participants transacting in a security in an enterprise may consider not only the value of the company that could be realized upon an immediate sale, but also the way the value of the company might evolve over the expected time horizon for the investment, through the future *liquidity event*. Specifically, *market participants* transacting in a security in an enterprise would consider which of the investors have control or significant influence (or in aggregate have control or significant influence) and make corresponding assumptions regarding the *expected cash flows* for the business and the expected time horizon. This value may or may not be the same as the fair value of the enterprise that would be used in an analysis that assumes an immediate sale of the enterprise, such as for impairment testing of goodwill under FASB ASC 350-20, in which the unit of account is the entire reporting unit, rather than an individual security. In particular, minority interest holders would not be able to change the capital structure for the enterprise, nor would they be able to change the amount or timing of cash flows. See table 5-1 for some of the key differences between the valuation of an interest in an enterprise and a valuation of the enterprise as a whole. Therefore, the Equity Securities Task Force (task force) believes that when valuing a minority interest, it is most appropriate to consider the expected cash flows to the minority interest holders, given the enterprise’s plans under existing ownership and the required rate of return for the investors who in aggregate have control of the business.¹
- 7.03** In many cases, market participants value the securities in an enterprise using the *enterprise value* as an input. When no near-term exit is planned, the total enterprise value if sold to a third party would typically not be expected to reflect a “premium” to the value

¹ The investors who in aggregate have control of the business are the investors who in aggregate can decide on future financings and the form and timing of the liquidity event. In many cases, the preferred stock investors (considering one or more of the classes in aggregate) have these rights. In situations where the investors’ interests are not aligned, assessing which investors in aggregate have control of the business may require analyzing whether an exit would be advantageous for each class and then determining which classes voting together would have the ability to initiate or block a liquidity event.

under current ownership considering the expected time horizon for the investment. In fact, if the equity securities in the business would have significantly more value if sold to a third party on the measurement date, the investors seeking to maximize value would most likely already be pursuing such an exit.² That is not to say that a third party never would pay more for a company than the business can achieve under current ownership — there may be circumstances in which an unanticipated third party approaches a company due to some idiosyncratic characteristics that have value to that buyer,³ or the private equity (PE) or venture capital (VC) investors decide that selling to a strategic buyer would provide a more efficient path to achieving scale and distribution. In most situations, however, at these interim measurement dates, market participants typically expect that the investors who in aggregate have control of the business will continue making improvements to the business and executing the strategy that attracted them to the investment, until the business has reached a position where it would be attractive to a third-party buyer or the initial public offering (IPO) market. The valuation of the business at any measurement date would still reflect any differences from the median or average multiple of the selected guideline public companies, either higher or lower depending on the facts and circumstances, but would not reflect a "premium" or "discount" per se.

Controlling Versus Minority Interests

7.04 A controlling interest, subject to restrictive agreements and applicable laws and regulations, can exercise full rights of ownership regarding the management of an enterprise, including

- a) making investment decisions;
- b) appointing management;
- c) determining the amount of any special dividends paid; and
- d) liquidating, dissolving, selling, or recapitalizing the enterprise.

Conversely, a minority interest holder lacks the ability to exercise those rights.

7.05 Some holders of minority interests may be able to exert influence similar to the rights of a controlling interest. Such influence, whether on its own or when acting in concert with other investors as long as the investors' interests are aligned, may be considered similarly to a controlling interest. In such cases, the price paid by a "minority" investor to enter a

² Valuation typically assumes that shareholders are rational, even in situations when contrary evidence exists. Nevertheless, there may be situations when it would be appropriate to consider suboptimal management for a given enterprise, particularly when valuing a minority position and the controlling investors are clearly not maximizing value.

³ Some companies may have scarcity value or other hidden unique value that may result in a high valuation relative to the company's plans under current ownership. For example, the company might have an employment agreement with a world-renowned CEO and that employment contract might be enough to attract a third party who needs those skills to buy the whole company.

position would typically be the same as that paid by a "controlling" investor.⁴ In other cases, investors' interests may not be aligned, and it would be important to consider the specific rights associated with the interest.

- 7.06** In many cases, a control premium or an *acquisition premium*⁵ is paid when an enterprise is acquired. Given the economics of supply and demand, a buyer who wishes to acquire control of an enterprise may have to pay a premium over a previous value to incentivize current interest holders to sell. These premiums may be justified by the expected improvements to the cash flows, reductions in risk that the buyer expects to achieve, or both.⁶ Such a premium, if any, is generally incorporated into the transaction price and considered in calibrating valuation inputs, as long as the transaction price reflects fair value at initial recognition. Because any minority interest holders would also benefit from these improvements to the business, it would be appropriate to use the same calibrated *equity value* to value any minority interests immediately following the transaction.
- 7.07** At later measurement dates, the calibrated inputs, adjusted for any changes in the company and for then-current market conditions, generally would incorporate the value associated with control. If so, it would not be appropriate to add an additional on-top "control premium" when estimating fair value. No further adjustment is required because the improvements that may be realized post-transaction were already incorporated into the cash flows and calibrated *required rate of return* assumptions or calibrated market multiples used in the analysis. See paragraphs 3.111–.128, "Applying Calibration in Valuing the Securities in an Enterprise," for further discussion.
- 7.08** Historical valuation practice assigned a different value to a business when considering a controlling position versus a minority position.⁷ However, it typically will not be

⁴ Note that it is common for multiple investors participating in a single capital-raising event to pay the same price per share as part of the investment round, even when, for example, the *lead investor(s)* who invests the most money gets preferential rights, including rights to nominate board members, consent rights on certain types of transactions, or even rights to drag along other investors into a sale transaction. In these cases, the other investors generally view the group of investors taken together as having sufficient alignment of interest with the lead investor(s) that they are content to pay the same price per share.

⁵ The Appraisal Foundation's Valuations in Financial Reporting (VFR) Valuation Advisory #3, *The Measurement and Application of Market Participant Acquisition Premiums*, sets forth best practices for certain issues encountered in measuring the fair value of controlling interests in business enterprises for financial reporting purposes. Refer to the [Appraisal Foundation's website](#) for further information.

⁶ The owners of an enterprise may increase *enterprise value* by improving the cash flows directly (for example, by increasing revenues, reducing operating costs, or reducing nonoperating costs, such as taxes). The owners of the enterprise may also increase enterprise value by reducing risk (for example, by diversifying the business, improving access to capital, increasing the certainty of cash flows, or optimizing the capital structure). Both of these factors may be used to justify the premiums paid in transactions.

⁷ Prior to publication of the Appraisal Foundation's VFR Valuation Advisory #3, many valuation specialists estimated the control premium for an enterprise by observing the difference between public company multiples and the multiples paid in transactions. For example, the *Mergerstat Review* provides statistics and analysis of mergers and acquisitions for U.S. companies, segregated by industry. However, as discussed in the Appraisal Foundation's VFR Valuation Advisory #3, these statistics reflect averages over a wide range, and the actual premium paid in any

appropriate to apply a control premium to estimate the enterprise value solely when valuing controlling interests or, conversely, to apply a minority discount to estimate the enterprise value when valuing minority interests. Instead, when estimating the value of the securities in an enterprise and the cash flows that will result from these securities, the valuation specialist should consider the relevant facts and circumstances, including, for example:

- a) Who has control? What are the enterprise's plans under current ownership?
- b) Does control matter? Would taking control of the business allow the investors to change the strategy of the business in a way that would increase the cash flows or reduce risk?
- c) What would a third party pay for the entire enterprise today? Would it be advantageous for the controlling investors to prepare the company for sale in the near term or to execute the investors' planned strategies over the expected time horizon for the investment?
- d) What exit multiple would market participants investing in an interest in the enterprise on the measurement date expect to realize upon a future exit?
- e) Are the cash flows to the specific interest proportionate to the overall equity value, or would some instruments receive disproportionate returns depending on how the enterprise value evolves through the future exit? If different instruments would receive disproportionate returns, how would the investors who in aggregate have control of the business maximize their returns, and what would that imply about the value of the other instruments in the enterprise?

7.09 All market participants, whether controlling or minority, will realize proceeds from the ultimate exit and would consider these factors when assessing the value of a particular ownership interest in an enterprise, whether it is a controlling or minority interest. Therefore, it is critical to consider the specific facts and circumstances, using *calibration* whenever possible, rather than to apply premiums without supporting the specific improvements that market participants would expect that would support a higher valuation. In other words, particularly due to the degree to which specific rights and

given transaction depends upon the negotiation dynamics. Therefore, when estimating an *acquisition premium* for a specific company, it is important to consider the characteristics of the likely market participants and the level of improvements to the cash flows and synergies available to these market participants. Synergies available to only one potential acquirer typically should not be included in the estimated control premium because it would be difficult for the sellers to capture the value of these synergies in the negotiation process. It is also important to note that control premiums are observed only for companies that are acquired. The vast majority of companies are not acquired in any given year. Therefore, the companies that are acquired may represent a sample in which higher levels of improvement are possible, resulting in higher observed control premiums than would otherwise be the case. For purposes of valuing the securities in a business, it will typically be appropriate to measure the enterprise value from the perspective of the investors who in aggregate have control of the business, allocate the aggregate equity value amongst the various classes of equity, and then make adjustments for specific securities as needed to capture the impact of any differences in rights.

privileges that affect value can vary greatly in the context of private companies, any use of a rule of thumb or benchmark for premiums or discounts would likely not be appropriate in valuing the enterprise, as a whole, or a specific security.

7.10 In a valuation of a minority, nonmarketable interest in a privately held enterprise, the objective of the analysis is to value the securities in the enterprise rather than the enterprise as a whole. However, the value of the enterprise, subject to the considerations discussed in earlier chapters, may help inform judgments regarding the value of individual securities. The task force believes that the *basis of valuation* for the enterprise should be consistent with the amount that investors would pay for an interest in the enterprise, given the company's plans under current ownership and the required rate of return for the investors who in aggregate have control of the business.⁸ In particular:

- a) In the *market approach* (*guideline public company method* or *guideline company transactions method*⁹), the multiple selected would be calibrated with the entry multiple, as applicable, and would reflect the differences between the enterprise and the guideline public companies or transactions, given the company's plans under current ownership. Specifically, the selected multiple would incorporate market participants' expectations regarding improvements that would be made in the business through the expected liquidity event and the ultimate exit price that might be realized.

— In some situations, the value of the enterprise at the measurement date may reflect a premium (or a discount) relative to the observed multiples of the guideline public companies or transactions. For example, suppose that a PE firm acquires control of an enterprise for 10 times the last 12 months (LTM) earnings before interest, taxes, depreciation, and amortization (EBITDA),¹⁰ but the median multiple observed for the selected guideline

⁸ As discussed in paragraph 5.02, most privately held companies have investors who in aggregate have control of the enterprise. When valuing the interests in an enterprise, it is appropriate to consider these investors' required rate of return. Such investors would be expected to select management and influence strategy to maximize value.

⁹ Multiples from the guideline public company method are typically regarded as reflecting a minority interest value for the enterprise, whereas multiples from the guideline transactions method are typically regarded as reflecting a controlling interest value for the enterprise. However, either method may be used to estimate the enterprise value to be used as an input when valuing the equity securities in the enterprise, adjusting the multiples to reflect the differences between the subject enterprise and the selected guideline public companies or transactions. For example, if the subject enterprise is expected to have higher growth than the guideline public companies but lower growth than the guideline company transactions, all else equal, it might be appropriate to select a last-twelve-months (LTM) multiple that is at the higher end of the guideline public company multiples and at the lower end of the guideline company transaction multiples. These adjustments are not attributable to control, but rather attributable to the differences in size, growth and profitability for the subject enterprise relative to the two different sets of guideline companies. When possible, calibration should be used to support the selected multiples.

¹⁰ Note that, for simplicity, this example refers only to LTM multiples of earnings before interest, taxes, depreciation, and amortization (EBITDA). In practice, a valuation should consider other relevant indications of value (for example, forward multiples, multiples of other metrics, and the *income approach*). See chapter 3, "Overview of Valuation Approaches," for further discussion of valuation methodologies.

public companies in the guideline public company method is 8 times the LTM EBITDA. This difference may reflect the improvements to the business that the enterprise is expected to make under the new ownership given the transaction and would incorporate the value associated with control. Because any minority interest holders would also benefit from these improvements to the business, it would be appropriate to consider the 10 times the LTM EBITDA multiple in estimating the value of the enterprise for the purpose of valuing the minority securities immediately following the transaction. That is, it typically would not be appropriate to value the enterprise differently when valuing the minority securities than when valuing the controlling securities.¹¹

- In other situations, however, the value of the enterprise at the measurement date would not incorporate a premium, because market participants would not expect to pay a premium for synergies given the characteristics of the business. For example, suppose that two years after the initial acquisition, the enterprise has realized the planned improvements to EBITDA, and the expected future growth and profitability are now generally consistent with the growth and profitability levels of the selected guideline public companies. Based on the company's plans under current ownership, the expected time to a liquidity event is still three years away. Furthermore, the company has not achieved the additional expected improvements that would make the business an attractive acquisition or IPO candidate, and there are no potential third party acquirers that would be willing to pay an acquisition premium. In that case, in estimating the value of the enterprise for the purpose of valuing the minority securities, it may be appropriate to use a multiple based on the guideline public companies without adjustments. That is, after considering adjustments for differences in size, growth, and profitability, the valuation specialist may conclude that the enterprise is similar to the selected guideline public companies and that no adjustments are required. The value of the enterprise for valuing the minority securities would still be consistent with the value of the enterprise for valuing the controlling securities. However, the enterprise value on a controlling basis would not incorporate a market participant acquisition premium if no potential third party acquirers would be willing to pay an acquisition premium given the characteristics of the enterprise at the measurement date.
- In estimating the fair value of minority securities in the enterprise when it would be optimal to sell the enterprise, the valuation would consider the amount a third party buying the entire enterprise might pay corresponding

¹¹ After valuing the enterprise consistent with the perspective of the investors who in aggregate have control of the business, the valuation for the specific securities being valued may then be adjusted for differences in risk attributable to lack of control and lack of marketability, if appropriate. See paragraphs 7.16–.27 and appendix A, paragraphs A.12.01–.10, "Models Used in Calculating Discounts for Lack of Marketability."

to the improvements in the cash flows or reductions in risk that the third-party buyer might achieve. In such circumstances, the controlling securities would generally be valued on the same basis as the minority securities, that is, on a pro rata basis when proceeds from the sale would be proportionate to the interest held, or pursuant to the *waterfall*, that is, the contractual allocations of cash flows returned to investors, if certain equity securities would receive different payouts.

- b) In the *income approach (discounted cash flow method)*, the projected cash flows for the purpose of valuing a minority interest would reflect the cash flows that market participants investing in the securities would expect under current ownership through the expected liquidity event, including any expected improvements in the cash flows or other changes that an investor in the minority securities would consider and be willing to pay for.
- For example, suppose that a PE firm purchases a business using a turn-around strategy, bringing in a new management team and identifying several opportunities for improving revenues and reducing costs. Market participants investing in an interest in the business would consider the cash flows, including the improvements that the new management team is expecting to make to the business (including company-specific *synergies*).
 - Market participants would also consider the risks associated with these plans when estimating their required rate of return. When assessing the value of the minority interest, the *discount rate* selected should reflect the required rate of return that investors who in aggregate have control of the business would expect through the liquidity event.
 - In contrast, in estimating the fair value of an enterprise when it would be optimal to sell the enterprise and when such a sale is likely under current ownership, the valuation would instead consider the cash flows that a third party buying the entire enterprise would expect (excluding buyer-specific synergies but including synergies that would be available to multiple buyers) and the expected cost of capital that these third-party buyers would expect for the enterprise after acquisition.
- 7.11** In short, the task force believes it would not be appropriate to apply an inadequately supported control or acquisition premium, or discount for lack of control, in the calculation of the enterprise value used in valuing the minority securities in the enterprise. Instead, the task force recommends that the enterprise value reflects the cash flows for the business that an investor in a minority interest would expect under existing ownership and the required rate of return for the investors who in aggregate have control of the business. No further adjustment is required because this value would be directly incorporated into the cash flows and calibrated required rate of return assumptions or calibrated market multiples used in the analysis.

- 7.12** The value of the enterprise for the purpose of valuing the minority securities should also consider the value that might be realized for the enterprise upon a liquidity event, if any. If the enterprise has no plans to be sold or go public,¹² a minority interest holder would not be able to realize any premium that a third-party buyer might pay to acquire or gain control of the enterprise. If the enterprise ultimately plans to be sold or go public,¹³ a minority interest holder will ultimately participate in this liquidity event. Therefore, in this case, when valuing a minority interest, it may be appropriate to value the minority interest based on its share of the cash flows leading up to, and to be realized upon, the future liquidity event (whether via a strategic sale or an IPO). That is, if market participants investing in a minority interest would expect to realize a value at the liquidity event that includes expected market participant synergies (for example, if multiple strategic buyers would be able to provide more reach to a product developed by a startup), the additional value that would be expected to be realized upon the liquidity event would be appropriately included in the fair value of the enterprise used for estimating the value of the minority securities. Note, however, that the task force believes that best practice is to explicitly model the synergies in the projected cash flows, to the extent possible, considering not only the LTM multiples but also forward multiples. To the extent that the improvements are already captured in the cash flow forecasts, it would not be appropriate to also apply a market participant acquisition premium in the selected market multiples.¹⁴
- 7.13** The investors in an enterprise who in aggregate have control of the business may have a greater degree of influence over the company's operations and future exit strategy than minority interest holders, even if no one investor has strict control. However, both the investors and minority interest holders may participate in the future exit event, differentiated only by the economic rights and preferences of each security in the capital structure. In a *simple capital structure*, both the investors and minority interest holders share pro rata in the proceeds from a sale, or they may realize the traded share price on or after an IPO.
- 7.14** Until the future liquidity event, when valuing both the securities held by the investors (as is often required for calibration) and the securities underlying the stock-based compensation awards, the cash flows should reflect the enterprise's plans under existing

¹² For example, a family-owned or other closely held business or partnership without private equity (PE) or venture capital (VC) backing might plan to remain private for the indefinite future.

¹³ For example, almost all successful PE-backed and VC-backed companies ultimately have a *liquidity event* (that is, the company is sold or taken public), so that the investors can realize the return on their investments.

¹⁴ Note that this discussion focuses on the intent of the enterprise because *market participants* transacting in an interest in the business would consider the expected time horizon for the investment given the company's plans under current and new ownership, rather than the plans that a third party buying the entire business would make. Therefore, when assessing the assumptions that a market participant investing in the subject interest would make about the business, it is appropriate to consider the information that such an investor would possess after completing a due diligence process. In most cases, these assumptions will be consistent with the plans of the enterprise under current ownership. See the Appraisal Foundation's VFR Valuation Advisory #3 for best practices for estimating the exit premium that market participants might expect to realize upon an exit event.

ownership. Because the enterprise's strategy, considering the investors who in aggregate have control of the business, are already considered in developing the forecast, and minority interest holders cannot change those plans, there is no difference in the enterprise cash flows used in valuing the various equity securities in the enterprise.

- 7.15** Beyond the future liquidity event, the assumptions that a market participant investing in the minority securities would make regarding the cash flows or expected exit multiple should be used. The post-exit cash flows, or selected exit multiple, may incorporate expected improvements to the business under new ownership. Additionally, these inputs may incorporate synergies that the company may achieve in conjunction with the acquirer, to the extent that investors in the minority securities would assume that the company would be able to capture a portion of these synergies in their negotiations for a sale of the company at the future liquidity event. If investors in the minority securities would not assume such a premium would be paid for the company at exit, the post-exit cash flows should not be adjusted for expected post-exit improvements under an income approach. Similarly, under a market approach, if investors would not assume that a premium would be paid for the company at exit, the multiples and financial metrics would not reflect an acquisition premium. Conversely, if investors would assume that the value that the company will realize at exit would be at a higher multiple than the selected guideline public companies or comparable transactions, the multiples and financial metrics used in the analysis would reflect that assumption.¹⁵ Depending on the circumstances, it may be appropriate to place some weight on both types of exit. Regardless of the type of exit expected, because all equity holders will share in the same future exit values, there is no difference in the enterprise value used in valuing the various securities in the enterprise.
- 7.16** Even though the enterprise value used in valuing the securities held by the investors who in aggregate have control of the business and the other securities in the enterprise is the same, the value of the securities themselves may differ. The two types of disproportionate returns that investors typically enjoy are as follows:
- a. Certain investors' securities include explicit economic rights, such as a liquidation preference or preferred dividends, which provide disproportionate returns over the other securities. These types of returns can be captured in the *valuation models* for valuing equity securities in complex capital structures, as described previously.
 - b. Certain investors have significant influence over the enterprise, including control over the timing of exit and the negotiations for future financing rounds, which

¹⁵ Note that although an initial public offering (IPO) results in the sale of shares on a minority basis, IPO multiples may be higher than the average public company multiples or comparable transaction multiples, perhaps due to market participants' view of the growth potential for newly public companies or due to the fact that the product or service the company offers may be differentiated from existing public companies in ways that may appeal to new investors to be compelling. In addition, an IPO is typically accompanied by a tremendous marketing effort in the form of a "road show" that leads up to the IPO. An IPO also provides liquidity for the minority shareholders. It would be appropriate for the valuation analysis to consider the differences between the subject company and the guideline public companies or comparable transactions when estimating the value for any of the expected exit scenarios, not just a future sale.

provides the investors with optionality that the holders of other securities lack. These types of returns are more difficult to model, and impacts are generally captured via a *discount for lack of marketability* applied to the specific securities that are less marketable than the business as a whole as discussed in paragraphs 7.18–.27, rather than via a discount for lack of control.¹⁶

- 7.17** In summary, as discussed in paragraphs 7.12–.16, when valuing minority interests in an enterprise, the enterprise value would be measured considering the company’s cash flows under existing ownership, as well as the plans for a future liquidity event (if any), and the value that investors in a minority interest would expect to be realized upon the future liquidity event (whether via a sale or an IPO). The enterprise value would not include a significant control or acquisition premium, unless investors in the minority securities would pay such a premium for an interest in the enterprise under current ownership (that is, when the expected improvements to the cash flows or reductions in risk under current ownership justify such a premium relative to the selected guideline public companies). After measuring the enterprise value on this basis, it is unnecessary to back out a premium in estimating the fair value of the minority securities.¹⁷

Marketable Versus Nonmarketable Securities

- 7.18** The previous section discussed considerations of control applicable to valuing the enterprise as a whole. As discussed, typically, the enterprise value used for valuing the securities will be measured on a controlling basis. In addition, since the investors who in aggregate have control of the business could sell the business if it was in their best interest to do so, this enterprise value will be measured on a marketable basis; it would not typically be appropriate to apply a discount for lack of marketability to the total equity value or total enterprise value. However, after allocating the resulting equity value to the various securities, it may be appropriate to make adjustments if certain securities are less marketable than the securities that in aggregate have control of the business.
- 7.19** Lack of marketability detracts from a security’s value when compared to a security that is otherwise comparable but readily marketable. For two given investments identical in all other respects, market participants may apply a downward adjustment to the value of the one that cannot be readily converted into cash versus the one that can be readily converted into cash. A *nonmarketable investment* is one that lacks a ready market; an

¹⁶ A frequent example supporting the position that the discount for lack of control is minimal occurs in PE investments when the *lead investor* retains control, but *tag-along investors* pay the same price per share. On the other hand, this example could be considered a special case when the tag-along investors have sufficient respect for the lead investor that they are willing to forgo control to benefit from the lead investor’s strategic oversight, its network of contacts, and its complement of consulting skills.

¹⁷ If investors would pay a significant control or acquisition premium for an interest in the enterprise today, even though the expected liquidity event is some time into the future, that premium should be considered in estimating the fair value of the *minority interest*. These premiums are typically justified by the expected improvements to the business under the new ownership. The discount for lack of control that may apply to the minority interest relative to the interest held by the investors who in aggregate have control of the business should capture only the differences in the *required rate of return*, if any, due to differences in rights as described in paragraph 7.16.

illiquid investment is one in which a market exists, but the investment is not actively traded, or restrictions on the investment prevent access to that market. For example, a private enterprise considered as a whole is marketable (there is a market), because it can be sold after a usual and customary marketing process. A typical minority interest in a private enterprise is less marketable than the securities that in aggregate have control of the business and less marketable than the enterprise as a whole due to the lack of information rights, tag-along rights and other rights that investors typically expect, and as a result, market participants investing in such a minority interest would be in a position of more risk.

7.20 As discussed in appendix A, paragraphs A.01.01–.12, "Relationship Between Fair Value and Stages of Enterprise Development," and paragraphs A.03.01–.09, "Valuation Implications of Taking a Company Public," VC and PE investors have historically demanded and achieved higher returns than investors in public capital markets.¹⁸ These expected returns are reflected in the discount rates that are appropriate in the income approach and in the lower-than-average multiples of projected revenues or projected earnings that may be appropriate in the market approach (guideline public company method or guideline company transactions method).¹⁹

7.21 Because the enterprise value is defined in terms of the cash flows to the investors who in aggregate have control over the business, those investors' securities and the enterprise as a whole can generally be considered to be equally marketable. In particular:

- a) Both investors' securities and the enterprise as a whole are harder to sell than a share of stock traded on an exchange, but they are easier to sell than a single share in the enterprise that lacks the rights that investors would typically expect (see table 6-2, "Noneconomic Rights," and appendix A, paragraphs A.05.01–.25, "Rights Associated with Preferred Stock," for discussion).
- b) The investors who in aggregate have control over the business typically have access to information that would allow them to take potential buyers through a due diligence process, making it possible to access an exit market for either the investors' securities or the enterprise as a whole.

7.22 Considering these factors, the task force believes it is typically appropriate to consider the enterprise and the equity securities held by the investors who in aggregate have control of

¹⁸ The investors' required rate of return also reflects the high risk of these investments. VC investments are risky because of the nature of early-stage companies; historically, PE investments have created a similar risk profile through high leverage. Because, on average, the market is risk averse, investors in high-risk companies can achieve higher-than-market returns.

¹⁹ For most VC-backed and PE-backed companies, projected revenue and earnings growth exceed industry levels. Therefore, although the values of these companies typically reflect lower-than-average multiples of projected (NTM) revenues or earnings, these same values also may reflect average or above-average multiples of historical (LTM) revenues and earnings. For example, an early-stage company may have almost no current revenue, whereas a large PE-backed company in a turnaround situation may have low earnings that are expected to improve under new management. In both of these examples, the value of the companies would reflect a high LTM multiple.

the business as equally marketable securities and to value them as such.²⁰ The task force believes it would not be appropriate to value the enterprise as though it were a fully liquid asset and then apply a *discount for lack of marketability* to the enterprise value or investors' securities to account for the higher rate of return that these investors demand.²¹ For example, in estimating the valuation date fair value of equity to be used in valuing the shares within a simple capital structure (as described in chapter 5) or in the various methods for valuing equity interests within a complex capital structure (as described in chapter 6):

- a) In the income approach, the valuation specialist should discount the cash flows at a discount rate corresponding to the required rate of return for the investors who in aggregate have control of the business,²² rather than at the lower rate that might be appropriate in the public capital markets.
- b) In the market approach, the valuation specialist should select multiples that are appropriate to the enterprise, considering the required rate of return for the investors who in aggregate have control of the business, given the size, expected growth, and profitability for the private company, versus the public capital market's required rate of return, given the size, expected growth, and profitability of the selected guideline public companies or guideline company transactions. The multiple appropriate for the enterprise may be higher or lower than the guideline public company multiples or guideline transaction multiples, depending on the characteristics of the subject enterprise relative to the selected guideline public companies or transactions.
- c) Both the required rate of return considered in the income approach and the market multiples considered in the market approach should be calibrated to the equity value and corresponding enterprise value implied by any relevant transactions in the company's securities. See paragraphs 3.111–.128 for further discussion.

7.23 In a simple capital structure, both the investors who in aggregate have control of the business and the minority interest holders have the same securities. Therefore, to the extent that minority interest holders have the same principal exit market and the same rights (specifically, the informational rights or the tag-along rights allowing minority interest holders to participate in all future transactions led by investors who in aggregate have control of the enterprise), the value of the securities would be the same for both those investors and the minority interest holders. However, if the minority interest

²⁰ The enterprise value and corresponding *equity value* should be measured from the perspective of the investors who in aggregate have control of the business. If the investors' interests are not aligned, it would be appropriate to consider the impact of the lack of alignment on the valuation of the minority interest.

²¹ If the equity value is measured via calibration to the most recent private equity or venture capital financing transaction, the resulting enterprise value already incorporates the investors' required rate of return given the illiquid nature of the investment. It would not be necessary to increase this enterprise value by removing an estimated illiquidity discount as though the enterprise would have a higher value if it were not private.

²² See paragraphs 5.02–.04 for further discussion.

holders have a different principal exit market or additional restrictions apply to the minority interests, it may be appropriate to apply a discount for lack of marketability to the minority interest, as discussed subsequently.

- 7.24** In a complex capital structure, junior equity securities, such as common stock, common options, or profits interests, may have a lower value than the equity securities held by the investors who in aggregate have control of the enterprise, even after explicitly capturing the differences in cash flows, for the following reasons:
- a) In general, the holders of junior equity securities, such as common stock, common options, or profits interests, are not privy to the same level of information that is available to the interests held by the investors who in aggregate have control of the business and, therefore, do not have the same level of access to potential buyers.²³
 - b) Furthermore, in many cases, the holders of junior securities, such as common stock, options, or profits interests, will participate only in the upside appreciation in the value of the enterprise and can only sell their securities, while the investors who in aggregate have control of the business make decisions about future financings and could sell their securities or could sell the business as a whole. Therefore, holders of the junior securities may demand a higher rate of return given the additional risk associated with this position.

The higher rate of return that investors in the junior securities may require due to these factors is often modeled using a discount for lack of marketability.

- 7.25** To account for differences in rights between the various classes of equity that are not otherwise captured in the valuation model, the task force believes that after allocating the equity value to the various securities within the enterprise or assessing the discount rate for a security considering its economic rights, it might be appropriate to apply a discount for lack of marketability to certain junior equity securities, such as common stock, common options, and profits interests, to the extent needed to capture the incremental rate of return, if any, that the holder of junior equity securities would demand for the position. This assessment would consider the information rights and other noneconomic rights associated with these equity securities relative to the rights associated with the equity securities that in aggregate provide control of the business. Conversely, certain companies may have secondary transactions where one or more investors buy shares from earlier investors or from the common stock or option holders, which may indicate that these shares are more marketable.

- 7.26** As discussed in chapter 5, for the purpose of valuing a minority interest in the enterprise, the total enterprise value is measured considering the cash flows under current ownership

²³ The Equity Securities Task Force (task force) recommends capturing the impact of such differences through a *discount for lack of marketability*, rather than separately applying a discount for lack of control. Many of the factors that make certain interests more marketable than others are attributable to the noneconomic rights associated with these interests.

and the required rate of return of the investors who in aggregate have control of the enterprise. Therefore, when estimating the discount for lack of marketability for the junior securities, it is appropriate to consider the degree of illiquidity of these securities relative to the degree of illiquidity already incorporated into the valuation of the enterprise and the degree to which the minority interest has the rights that investors would typically expect. That is, if the securities underlying the stock-based compensation awards have the same rights as the securities held by the investors who in aggregate have control of the business, then it may not be appropriate to apply any additional discount for lack of marketability; if the securities underlying the stock-based compensation awards lack the rights that investors typically expect, then a discount for lack of marketability may be needed. See also Q&As 10.53–.58.

- 7.27** Situations may exist in which a valuation specialist considers a discount for lack of marketability, relative to the allocated value based on the enterprise valuation and equity valuation guidance outlined previously, to apply to the minority interest.²⁴ To address these situations, many quantitative and qualitative methods for assessing these discounts exist as discussed in appendix A, paragraphs A.12.01–.10, "Models Used in Calculating Discounts for Lack of Marketability." The most popular quantitative methods estimate the discount as a function of the duration of the restriction or expected period of illiquidity for the investment (time horizon until the expected liquidity event for the business) and the risk of the investment (volatility). Such discounts may also be considered in valuing restricted stock interests in public companies, calibrating the quantitative model when possible.

Discounts Related to Restrictions

- 7.28** Generally, stock-based compensation awards have vesting conditions that restrict employees from monetizing the awards until the awards are earned. FASB ASC 718 indicates that it is not appropriate to consider a discount for restrictions that apply only during the vesting period.²⁵ Specifically, FASB ASC 718-10-30-11 states:

A restriction that stems from the forfeitability of instruments to which grantees have not yet earned the right, such as the inability either to exercise a nonvested equity

²⁴ Note that it is appropriate to first estimate the enterprise value, considering calibration to any relevant transactions, which would incorporate both the benefits of control and the returns that investors may require given the illiquidity of the position. Even if calibration is not possible, the enterprise value would still be measured on this basis. No further adjustment is required because the value that may be realized given the plans of the business under existing ownership would already be incorporated into the cash flows and required rate of return assumptions or market multiples used in the analysis. A discount for lack of marketability would only apply to the minority interest if market participants transacting the minority interest would require an incremental rate of return to account for the lack of certain rights, such as *information rights* or certain noneconomic rights, that investors would typically expect, or if the interests of the minority interest holder are otherwise not aligned with those of the investors who in aggregate have control of the business.

²⁵ The discount for lack of marketability that may be applied to the securities underlying the stock-based compensation awards as discussed in paragraph 7.26 reflects differences in rights between those securities and the securities held by the investors who in aggregate have control of the business, not restrictions related to vesting.

share option or to sell nonvested shares, is not reflected in estimating the fair value of the related instruments at the grant date. Instead, those restrictions are taken into account by recognizing compensation cost only for awards for which grantees deliver the good or render the service.

- 7.29** Some awards are subject to post-vesting restrictions. For example, a company may require executives to hold the shares underlying the awards for a year or two after vesting, to promote a longer-term view or make it easier to claw back awards if necessary. Or a company may issue awards to retirement-eligible employees where vesting continues even after retirement; these awards are considered fully vested for accounting purposes at issuance since no additional service is required, but would be restricted until the vesting date specified in the award. Post-vesting restrictions that are included in the contractual terms of the awards are typically considered to be a characteristic of the award and FASB ASC 718 indicates that it is appropriate to consider post-vesting restrictions that are a characteristic of the award when estimating fair value. Specifically, FASB ASC 718-10-30-10 states:

[...] A restriction that continues in effect after an entity has issued awards, such as the inability to transfer vested equity share options to third parties or the inability to sell vested shares for a period of time, is considered in estimating the fair value of the instruments at the grant date. [...] ²⁶

- 7.30** Another form of restriction is a post-IPO *underwriter lockup*. FASB ASC 820-10-35-36B notes the following:

A contractual sale restriction is a characteristic of the reporting entity holding the equity security rather than a characteristic of the asset and, therefore, is not considered in measuring the fair value of an equity security (see paragraphs 820-10-55-52 through 55-52A). A contractual sale restriction prohibiting the sale of an equity security is a characteristic of the reporting entity holding the equity security and shall not be separately recognized as its own unit of account.

That is, the value of the securities considered would be the same for a fully vested share and for a share that vests over time or based on achieving a performance target.

²⁶ FASB ASC 718-10-30-19 states that a “restricted share awarded to a grantee, that is, a share that will be restricted after the grantee has a vested right to it, shall be measured at its fair value, which is the same amount for which a similarly restricted share would be issued to third parties.” In addition, paragraph B74 of the basis for conclusions for FASB Statement No. 123(R), *Share-Based Payment*, explains, “Certain post-vesting restrictions, such as a contractual prohibition on selling shares for a specified period of time after vesting, are essentially the same as restrictions that may be present in equity instruments exchanged in the marketplace. For those restrictions, either a market price of a similar traded instrument or, if one is not available, the same valuation techniques used to estimate the fair value of a traded instrument are to be used to estimate the fair value of a similar instrument awarded to employees as compensation.” Since basis for conclusions paragraphs are not included in the codification, paragraph B74 of FASB Statement No. 123(R) was not codified in the FASB ASC; however, the task force believes this paragraph provides helpful guidance and, therefore, decided to reference it in this guide. Please refer to FASB ASC 718-10-55-5 for more guidance on the impact of post-vesting restrictions.

Therefore, an underwriter lockup would not impact the fair value of the securities underlying the stock-based compensation award.

- 7.31** As to whether an underwriter lockup can be considered in the fair value of the award under FASB ASC 718-10-30-10, the task force has observed that such restrictions are typically negotiated directly with the underwriter at a later date than the original grant date of the award and as a result the task force believes that such restrictions generally would not be considered a characteristic of the award, although the terms and conditions of the original stock-based compensation award should be considered. Restrictions that are not considered to be characteristics of the award itself would not be considered in measuring the fair value of the award.
- 7.32** Determining whether a restriction is a characteristic of the award or not requires careful consideration of the contractual terms of the award. Furthermore, this determination may result in different estimates of fair value even when the shares the employee ultimately receives are similar. For example, consider a limited liability corporation (LLC) that completes an Up-C IPO, where the LLC continues as the operating entity and is held by the public entity. Typically, in such structures, the LLC units have an exchange right that provides a mechanism for the unitholders to exchange the units into public company stock. However, the contract that provides this mechanism may take several different forms, with different implications for the fair value analysis:
- If the original award agreement specified that upon completion of an IPO, the awards would be settled in public company stock after some period of time, then the task force believes any post-vesting restriction period would likely be considered to be a characteristic of the LLC units and would be considered in the fair value.
 - If the original award agreement specified that upon completion of an IPO, the awards would be settled in public company stock at the IPO date, but the shares received are subject to an underwriter lockup, in this case the task force believes the restriction during the lockup period would likely be considered *not* to be a characteristic of the LLC units and would *not* be considered in the fair value.
 - If the original award agreement did not specify a mechanism for exchanging the LLC units into public company stock, but the company chooses to add such a mechanism in connection with the IPO, then the task force believes the company would need to apply the modification guidance in FASB ASC 718-20-35. When considering the fair value at the modification date, the original awards would remain illiquid until the LLC winds up, which would typically be after the investors exit, often two to three years after the IPO date. The modified awards would gain liquidity sooner, and therefore may have a higher value.

Summary

- 7.33** It is important to consider the impacts of control and marketability when valuing the enterprise and the securities within the enterprise. When valuing the enterprise, the use of calibrated inputs, adjusted for any changes in the company and for then-current market

conditions, generally would incorporate the value associated with control and marketability; therefore, no further adjustments would be needed. In some cases, a discount for lack of marketability may be applied to the junior equity securities to capture differences in the rights not otherwise captured in the valuation model. If there is a secondary market, it may not be appropriate to apply a discount for lack of marketability; see chapter 8, “Inferring Value From Transactions in a Private Company’s Securities,” for further discussion. The valuation specialist should consider the facts and circumstances for each company and apply an appropriate method when the valuation is performed.

WORKING DRAFT

Chapter 8

Inferring Value From Transactions in a Private Company's Securities

8.01 Private companies frequently complete transactions (*primary transactions*) that involve issuing equity securities, either to raise funds or in connection with other negotiations. In addition, investors or employees¹ who hold equity securities may sell securities to other investors or unrelated third parties in a *secondary transaction* or may sell securities back to the company in certain circumstances. The primary purpose of this chapter is to provide a framework for calibrating the fair value of the equity securities underlying stock-based compensation awards to primary transactions, secondary transactions and company repurchases of company securities² for evaluating and assessing their impact on the fair value of the equity securities underlying stock-based compensation awards.

Objective of the Measurement and Summary of Chapter

8.02 The definition of *fair value* in FASB *Accounting Standards Codification* (ASC) 718, *Compensation—Stock Compensation*, refers to “a current transaction between willing parties, that is, other than in a forced or liquidation sale.” The definition of *fair value* in FASB ASC 820, *Fair Value Measurement*, refers to “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.” Finally, the definition of *fair market value* in IRS Revenue Ruling 59-60 refers to a transaction “between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts.” All these definitions include the concept of a transaction between knowledgeable, willing parties.

8.03 Although this guide is primarily focused on fair value measurements under FASB ASC 718, FASB ASC 820 establishes a framework for measuring fair value and provides guidance on evaluating transactions between market participants. Furthermore, as discussed in paragraph 1.08, the Equity Securities Task Force (task force) believes that it is appropriate to follow the measurement guidance in FASB ASC 820 when accounting for share-based payment transactions, unless it is inconsistent with the guidance in FASB ASC 718. Therefore, the task force believes the guidance in FASB ASC 820 should be applied when assessing the relevance of primary and secondary transactions in the company's securities in estimating the fair value of the equity securities underlying the stock-based compensation awards.

¹ For simplicity, this chapter generically refers to holders that may sell equity securities who are not solely financial investors as “employees.” However, these parties could have other business relationships with the company, such as nonemployee service providers, board members, former employees, customers, vendors, and so on.

² See paragraphs 8.56–.67 for examples of various types of primary and secondary transactions. Note that transactions based on a formula price or other pre-agreed terms are typically not indicative of the fair value at the transaction date; see paragraph 8.63 for further discussion.

- 8.04** FASB ASC 820-10-35-41 indicates that "[a] quoted price in an active market provides the most reliable evidence of fair value and shall be used without adjustment to measure fair value whenever available, except as specified in paragraph 820-10-35-41C." An *active market* is defined by the FASB ASC Master Glossary as "[a] market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis." Secondary markets for private companies typically would not be considered active markets, although each company should consider its specific facts and circumstances.
- 8.05** FASB ASC 820-10-35-36 states that "[v]aluation techniques used to measure fair value shall maximize the use of relevant observable inputs and minimize the use of unobservable inputs." Therefore, the task force believes it would be appropriate to prioritize transactions in the company's securities, to the extent that they are relevant indications of fair value as described in this chapter. In determining the relevance of the transaction, it would be appropriate for the company to consider the factors discussed in paragraphs 8.42–.49.
- 8.06** If the transaction is for a different security of the enterprise, is not in the principal market (see paragraphs 8.16–.24), or does not take place on the measurement date, then the transaction price would also need to be adjusted for these factors (the features of the security, the characteristics of the market, or the timing of the transaction, as applicable) to estimate a value for the subject security on the measurement date, as described in paragraphs 8.23 and 8.32–.33. Then the framework described in paragraph 8.07 as well as the factors described in paragraphs 8.42–.49 along with the factors in paragraphs 8.50–.55 would need to be considered when assessing the relevance of the adjusted indication of value.
- 8.07** When evaluating transactions in the company's securities and their relevance for estimating the fair value of the equity securities underlying the stock-based compensation awards, the task force believes it is appropriate to consider the following framework, which is consistent with guidance in FASB ASC 820:

If there is a transaction for an identical security³ on the measurement date and the transaction takes place in the principal (or most advantageous) market that is an active market,⁴ that is, if it provides sufficient frequency and volume to provide pricing information on an ongoing basis, then the transaction price would represent the fair value of the equity security underlying the stock-based compensation awards.

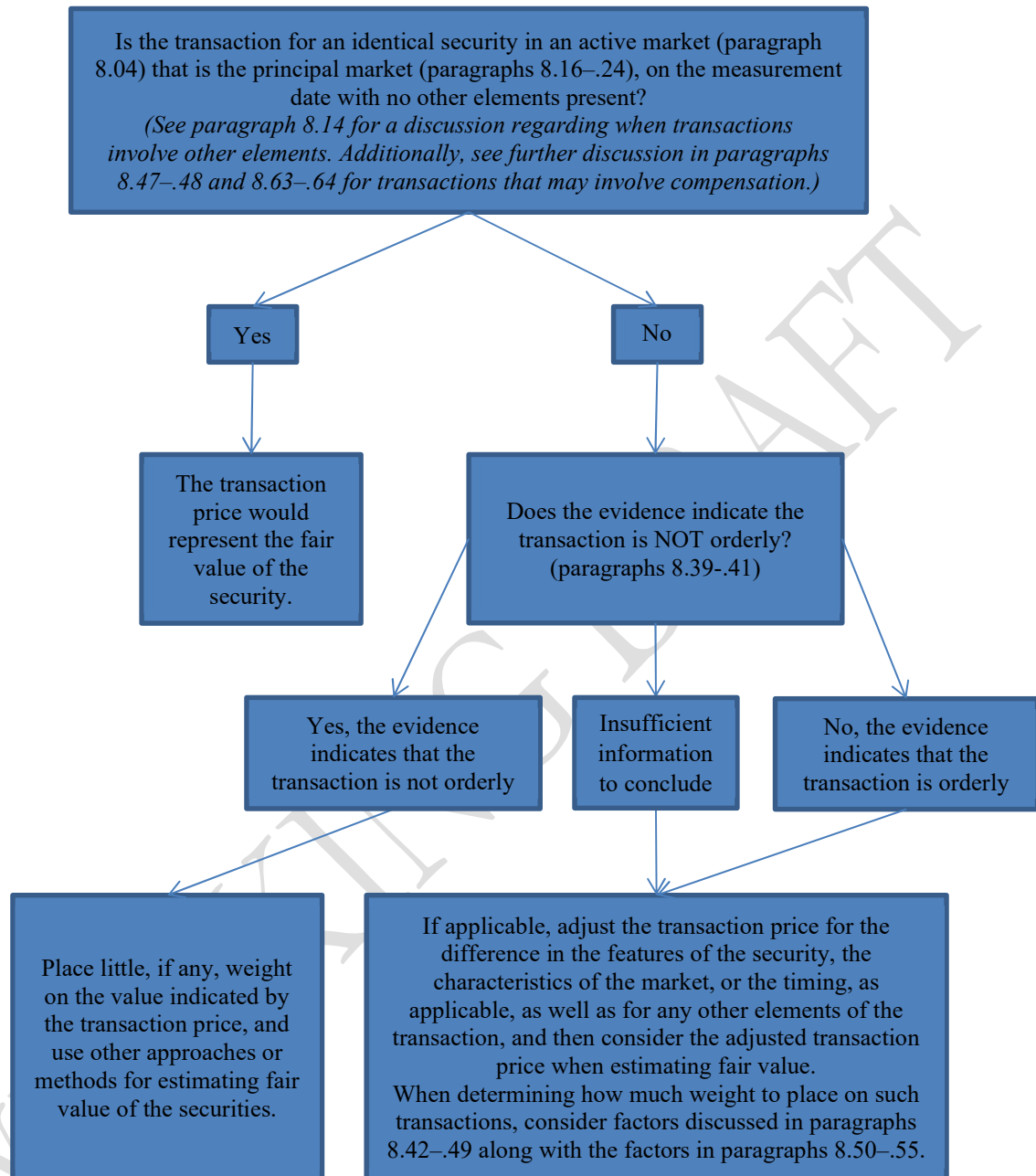
³ Note that as described in paragraphs 8.13 and 8.20, FASB *Accounting Standards Codification* (ASC) 718, *Compensation—Stock Compensation*, states that restrictions that apply only during the vesting period are not considered in assessing the fair value of the security; however, post-vesting restrictions may be considered in determining the fair value of the stock-based compensation award.

⁴ See paragraphs 8.16–.24 for discussion of the principal (or most advantageous market), paragraphs 8.35–.38 for discussion of market participants, and paragraphs 8.39–.40 for discussion of factors to consider when determining if a transaction is orderly and the implications of such a determination.

If the transaction is for an identical security on the measurement date but does not take place in an active market, or if the transaction is for a different security, or does not take place in the principal (or most advantageous) market, or did not take place on the measurement date, and the price has been adjusted to reflect the estimated value of the subject security on the measurement date as described in paragraph 8.06, then:

- if the evidence indicates that the transaction is orderly (see paragraph 8.34 for the definition of *orderly*), then the task force believes that transaction price should be taken into account. The amount of weight placed on that transaction price when compared with other indications of fair value will depend on the facts and circumstances.
- if the evidence indicates that the transaction is not orderly (for example, a forced liquidation or distress sale), then the task force believes little, if any, weight should be placed on that transaction price. However, as noted in paragraph 8.40, the task force believes such a determination would be rare.
- if the company does not have sufficient information to conclude whether a transaction is orderly, then the task force believes it should take into account the transaction price (that is, give it some weight in the analysis) but it may also augment the transaction price with other valuation techniques or information about transactions that are known to be orderly.

The following flowchart shows these steps.



8.08 The task force believes that in many cases, privately-held company valuations will need to consider the value indicated by the transaction price and determine the appropriate degree of weight to place on those transactions (that is, they will fall within the lower right-hand box of the above flowchart). The remainder of this chapter describes the task force’s recommendations regarding the application of the model in FASB ASC 820 to the judgmental assessment required in determining fair value. The chapter is organized as follows:

- Consider the objective of the valuation (the security being valued and the purpose of the measurement) and the relevant frame of reference (paragraphs 8.10–.15). Generally, the security being valued is the equity security underlying the stock-based compensation award, considered from the perspective of the market participants who hold the security as an asset, without regard to vesting conditions that apply to the stock-based compensation award itself. Therefore, this security is often the same unit of account as the securities transacted in a secondary transaction. However, if there are other elements involved in the secondary transaction, such as other commercial agreements or other classes of securities, it would be appropriate to make adjustments to reflect the impact of the other elements in determining the fair value of the equity securities underlying the stock-based compensation awards. Additionally, if the secondary transaction potentially involves compensation, further guidance in paragraphs 8.47–.48 and 8.63–.64 should be considered.
- Determine the principal (or most advantageous) market for the equity security underlying the stock-based compensation award, and consider if the transaction took place in that market (paragraphs 8.16–.24) or another market. This is a judgmental assessment, but a required element of applying FASB ASC 820. The objective of FASB ASC 820 is to determine the price at which a transaction would take place between market participants in the principal (or, in its absence, the most advantageous) market. All observable transactions in an entity's securities should be considered, but transactions that are not in the principal (or most advantageous) market may require additional analysis to consider what these transactions indicate about the price that would be received in the principal (or most advantageous) market when estimating the fair value of equity securities underlying the stock-based compensation awards under FASB ASC 820.
- Adjustments often need to be made to observable transaction prices that do not involve identical securities or do not take place on the measurement date or in the principal (or most advantageous) market. These adjustments would reflect the impact of differences in the securities transacted, differences in markets, or changes in the business and/or markets between the transaction and measurement dates (paragraphs 8.32–.33). Observable entry or transaction prices can provide evidence of fair value (paragraphs 8.25–.29), but calibrated valuation models should reflect the estimated exit price in the principal (or most advantageous) market. An entry price could include, for example, primary transactions in an entity's preferred stock, where the calibrated valuation model would be used to estimate the price that would be received in the principal (or most advantageous) market for the security underlying the stock-based compensation award (which often may be common stock). Consideration should include the information that would be known to market participants for transactions involving those securities in the principal (or most advantageous) market (see paragraph 8.30). In particular, market participants transacting in the securities underlying the stock-based compensation awards may have access to a lesser degree of information than would be available to investors who have access to management of the company (paragraphs 8.35–.38).

- FASB ASC 820 states that the determination of fair value should maximize the use of relevant observable inputs and minimize the use of unobservable inputs. Therefore, secondary transactions involving the securities underlying the stock-based compensation awards that occur in the principal (or most advantageous) market provide relevant information about the fair value of those securities. However, a number of factors should be considered in determining how much weight to place on the values indicated by these secondary transactions as compared to other indications of fair value (see paragraphs 8.31–.49 related to the relevance of the secondary transactions as well as paragraphs 8.50–.55 related to the relevance of other indications of fair value).
- A variety of different types of transactions and their potential impact on determining fair value of the equity securities underlying the stock-based compensation awards are described in paragraphs 8.56–.67.

8.09 Even when there are observable transactions, if the market is not active, FASB ASC 820 does not require that the observed transaction price would be given 100% weight. Instead, the task force believes the valuation should consider all the relevant facts and circumstances to assess what the price of the equity security underlying the stock-based compensation awards would be in the principal (or most advantageous) market at the measurement date. For example:

- If there is only one secondary transaction, even if the transaction is at the measurement date, the task force believes that transaction may not be the sole indicator of the price at which market participants would transact at that date. That is, because the market is not active, there may be reason to believe that the observed price is not the most representative estimate of the exit price at which the equity security underlying the stock-based compensation awards would transact in an orderly transaction between market participants in the principal (or most advantageous) market at the measurement date.
- Conversely, the task force believes that the greater the number of transactions in the class of equity security underlying the stock-based compensation awards (after adjusting for other elements involved as described in paragraphs 8.14, 8.47–.48 and 8.63–.64), the greater the proximity of those transactions to the measurement date, and the greater the consistency in pricing of those transactions, the less appropriate it becomes to place weight on other indications of value, including indications of value based on primary transactions and valuation models. If there have been many observable transactions in the class of equity security underlying the stock-based compensation awards close to the measurement date at reasonably consistent pricing, the task force believes in this case reasonable judgment may lead to the conclusion that the price of the observable transactions represents the fair value of the equity security underlying the stock-based compensation awards without need for adjustment.

In summary, the task force believes that it would be appropriate for the valuation to consider all the relevant indications of value and to maximize the use of observable

inputs, making reasonable judgments to estimate the price at which the security underlying the stock-based compensation awards would transact in an orderly transaction between market participants in the principal (or most advantageous) market at the measurement date.

FASB ASC 820 Guidance and Application to Valuing Privately-Held Company Securities Underlying the Stock-Based Compensation Awards

8.10 FASB ASC 820-10-05-1B outlines the objective of a fair value measurement:

Fair value is a market-based measurement, not an entity-specific measurement. For some assets and liabilities, observable market transactions or market information might be available. For other assets and liabilities, observable market transactions and market information might not be available. However, the objective of a fair value measurement in both cases is the same—to estimate the price at which an orderly transaction to sell the asset or to transfer the liability would take place between market participants at the measurement date under current market conditions (that is, an exit price at the measurement date from the perspective of a market participant that holds the asset or owes the liability).

FASB ASC 820 further sets out a framework for measuring fair value.

Considering the Perspective of an Investor in the Security Underlying the Stock-Based Compensation Awards

- 8.11** Although much of FASB ASC 820 is written in the context of determining the fair value of assets and liabilities, paragraphs 16–16AA of FASB ASC 820-10-35 state that a fair value measurement assumes that an instrument classified in stockholders' equity is transferred to a market participant at the measurement date, and that there could be an observable market for items classified in stockholders' equity that are held by other parties as assets. It goes on to state that “in all cases, a reporting entity shall maximize the use of relevant observable inputs and minimize the use of unobservable inputs to meet the objective of a fair value measurement, which is to estimate the price at which an orderly transaction to transfer the ... instrument classified in shareholders' equity would take place between market participants at the measurement date under current market conditions.”
- 8.12** FASB ASC 820 recognizes that there may be no observable market to provide pricing information about the transfer of liabilities or instruments classified in shareholder's equity (because, for example, contractual or other legal restrictions may prevent the transfer of such items). Paragraphs 16B–16D of FASB ASC 820-10-35 provide guidance on liabilities and instruments classified as equity that are held by other parties as assets. FASB ASC 820-10-35-16B states “When a quoted price for the transfer of an identical or a similar liability or instrument classified in a reporting entity's shareholders' equity is not available and the identical item is held by another party as an asset, a reporting entity shall measure the fair value of the liability or equity instrument from the perspective of a market participant that holds the identical item as an asset at the measurement date.”

FASB ASC 820-10-35-16BB(a) and (b) indicate that quoted prices or other observable inputs for an identical instrument held by other parties as an asset should be used, if available, in measuring the fair value of the liability or equity instrument.

Unit of Account

- 8.13** The first consideration is to determine the unit of account, which is generally defined by the relevant accounting literature for the instrument being valued. For compensation purposes, this would be each individual award granted to employees. For instruments that are not shares and for which an observable market price is not available (e.g., stock options), one of the relevant inputs to the determination of the fair value of the award would be the current price of the underlying share, in accordance with FASB ASC 718-10-55-21(c). This chapter is focused solely on considerations in valuing the equity securities underlying the stock-based compensation arrangements which, in the case of certain awards such as stock options, are only an input to the valuation model. While there are other inputs to the determination of the fair value of an award (such as volatility of the stock price, expected term of the stock option and the effect of market conditions), those other inputs are not the subject of this chapter. A grant of equity securities for compensation purposes may have vesting restrictions (i.e., service, performance, or other conditions). However, FASB ASC 718-10-30-11 and FASB ASC 718-10-55-7 require that performance and service vesting conditions not be included in the determination of the fair value of the award at the grant date. Rather, FASB ASC 718-10-30-17 provides that the fair value of such securities for compensation purposes should reflect the fair value as if the performance and service vesting conditions were satisfied at the grant date. Accordingly, the relevant unit of account for purposes of applying FASB ASC 820 to the equity security underlying the stock-based compensation arrangement would be the equity security itself, without regard to whether the compensation award is equity- or liability-classified under FASB ASC 718, and without regard to any service or performance vesting requirements, as they are not an attribute of the equity security being valued.
- 8.14** Therefore, in many transactions involving the purchase or sale of the company's securities, the unit of account in such a transaction would be the same as that used to measure equity securities that underlie the awards issued as compensation. However, if the transaction involved other elements beyond solely the purchase of equity securities (for example, other commercial agreements or multiple classes of securities), then appropriate adjustment to the transaction prices should be made to reflect the impact of the other elements in the determination of the fair value of the equity securities underlying the stock-based compensation awards. Additionally, see further discussion in paragraphs 8.47–.48 and 8.63–.64 for transactions that may involve compensation.
- 8.15** The valuation premise for financial instruments is generally the stand-alone value of that instrument. While FASB ASC 820-10-35-18D provides an exception for certain portfolios of financial assets and financial liabilities managed on a net basis, that exception does not apply to equity securities issued as compensation.

Principal or Most Advantageous Market

8.16 FASB ASC 820 focuses on determining the principal market in which an asset or liability is transacted. The *principal market* is defined as “the market with the greatest volume and level of activity for the asset or liability.” In the absence of a principal market, a company should determine the *most advantageous market* that an asset could be sold in, which is defined as “the market that maximizes the amount that would be received to sell the asset or minimizes the amount that would be paid to transfer the liability, after taking into account transaction costs and transportation costs.” Fair value measurements under FASB ASC 820 should reflect the price at which a transaction would take place between market participants in the principal (or, in its absence, the most advantageous) market. While more easily illustrated in the context of active markets, this concept equally applies in inactive markets when there are no observable transactions or only infrequent market transactions. See paragraph 8.20 for a discussion of an ability to access the principal (or most advantageous) market.

8.17 FASB ASC 820-10-35-6 and FASB ASC 820-10-35-6C state:

35-6 If there is a principal market for the asset or liability, the fair value measurement shall represent the price in that market (whether that price is directly observable or estimated using another valuation technique), even if the price in a different market is potentially more advantageous at the measurement date.

35-6C Even when there is no observable market to provide pricing information about the sale of an asset or the transfer of a liability at the measurement date, a fair value measurement shall assume that a transaction takes place at that date, considered from the perspective of a market participant that holds the asset or owes the liability. That assumed transaction establishes a basis for estimating the price to sell the asset or to transfer the liability.

8.18 The concept of a market in FASB ASC 820 does not mean that there needs to be a structured, formal or organized market (e.g., a dealer network or an organized exchange as discussed in paragraph 8.67). Accordingly, even in the absence of an active or organized market, a company must still assess what would be the principal, or most advantageous, market for a holder of the company’s equity securities underlying the stock-based compensation awards to be able to sell those securities; and then determine the appropriate fair value based on transactions that could take place in that market. In some cases, transactions may take place with the assistance of an intermediary, such as a broker. In these cases, the market would be considered to be a brokered market. The FASB ASC Master Glossary defines a *brokered market* (in part) as “[a] market in which brokers attempt to match buyers with sellers but do not stand ready to trade for their own account.” For example, if the company’s common stock is available through a brokered market, employees are allowed to access that market, and that market has the greatest volume and level of activity for the security, the brokered market is likely the principal market for the common stock.

- 8.19** In the absence of any structured, organized or brokered markets, the fair value would reflect the amount that would be paid or received in a hypothetical transaction in the principal-to-principal market. FASB ASC Master Glossary defines a *principal-to-principal market* as “[a] market in which transactions, both originations and resales, are negotiated independently with no intermediary. Little information about those transactions may be made available publicly.” In such a case, companies would need to consider the likely types of market participants – such as financial investors, strategic investors, private individuals, or other employees, that would be willing and able to negotiate independently – and what considerations and assumptions they would make about the value of the company’s equity securities underlying the stock-based compensation awards, as well as what level of information they would expect to examine in order to be willing to execute a transaction as a knowledgeable buyer or seller, having a reasonable understanding about the security and the transaction.
- 8.20** As noted in paragraph 8.13, although a grant of equity securities for compensation purposes may have vesting restrictions (i.e., performance, service or other conditions), FASB ASC 718-10-30-11 and FASB ASC 718-10-55-7 require that performance and service vesting conditions not be included in the determination of the fair value of the award at the grant date. Rather, FASB ASC 718-10-30-17 provides that the fair value of such securities for compensation purposes should reflect the fair value as if the performance and service vesting conditions were satisfied at the grant date. Thus, performance and service vesting requirements would not be considered an attribute of the instrument being valued and would not be considered in its valuation. Further, in discussing principal or most advantageous markets, FASB ASC 820-10-35-6B states that “[a]lthough a reporting entity must be able to access the market, the reporting entity does not need to be able to sell the particular asset or transfer the particular liability on the measurement date to be able to measure fair value on the basis of the price in that market.” Similarly, FASB ASC 820-10-05-1C states that “a reporting entity’s intention to hold an asset or to settle or otherwise fulfill a liability is not relevant when measuring fair value.” Accordingly, even though the recipient of an equity grant may not be able to immediately access a potential market for the sale of the securities due to vesting or other restrictions, may not expect to sell the security until a liquidity event occurs in the future, or may be uncertain if a future buyer in a secondary transaction will materialize, the task force believes that factors such as these would not affect the determination of the principal (or most advantageous) market for the securities underlying the stock-based compensation awards, nor the fair value of the security itself, at the measurement date (the grant date). Furthermore, as FASB ASC 820-10-35-6A notes that a “reporting entity must have access to the principal (or most advantageous) market at the measurement date,” the principal or most advantageous market for a privately-held company cannot be viewed as a potential future initial public offering or company sale event, as those exit markets do not exist as of the measurement date.
- 8.21** Determining the principal or most advantageous market is, therefore, an important element of assessing the degree of relevance of any transactions involving the company’s equity securities on the fair value of those securities. This can be a challenging and judgmental assessment for many companies to make. Nonetheless, it is a requirement of

FASB ASC 820 and the task force believes that companies should consider all relevant factors and document their judgment accordingly. FASB ASC 820-10-35-5A states:

A reporting entity need not undertake an exhaustive search of all possible markets to identify the principal market or, in the absence of a principal market, the most advantageous market, but it shall take into account all information that is reasonably available. In the absence of evidence to the contrary, the market in which the reporting entity normally would enter into a transaction to sell the asset or to transfer the liability is presumed to be the principal market or, in the absence of a principal market, the most advantageous market.

- 8.22** As noted in paragraph 8.10, the objective of a fair value measurement under FASB ASC 820 is to estimate the price that would be paid in an orderly transaction involving market participants in the relevant principal or most advantageous market. In addition, as noted in paragraphs 8.11–.12, the valuation of instruments classified as liabilities or equity should consider the perspectives of how holders of the instruments would determine fair value. Therefore, any assumptions used in the determination of fair value should reflect those that would be used by market participants (that are buying or selling the security as an asset) in that market, consistent with the guidance in FASB ASC 820-10-35-9. Observable transactions involving market participants provide relevant information about those market participant assumptions. *Market participants* are defined in FASB ASC Master Glossary as follows:

Buyers and sellers in the principal (or most advantageous) market for the asset or liability that have all of the following characteristics:

- a. They are independent of each other, that is, they are not related parties, although the price in a related-party transaction may be used as an input to a fair value measurement if the reporting entity has evidence that the transaction was entered into at market terms
- b. They are knowledgeable, having a reasonable understanding about the asset or liability and the transaction using all available information, including information that might be obtained through due diligence efforts that are usual and customary
- c. They are able to enter into a transaction for the asset or liability
- d. They are willing to enter into a transaction for the asset or liability, that is, they are motivated but not forced or otherwise compelled to do so.

- 8.23** Even if an observable transaction is not in the principal (or most advantageous) market or does not take place on the measurement date, the task force believes it may still provide relevant information about the value of an equity security underlying the stock-based compensation awards. However, in this situation, adjustments may be necessary to the observable transaction price, consistent with the guidance in FASB ASC 820-10-30-3A(d) (see paragraph 8.27), FASB ASC 820-10-35-54D, and the notion of maximizing the use of observable inputs in FASB ASC 820-10-35-36 (see paragraph 8.05). If there is

significant uncertainty regarding the adjustments needed to the observable transaction (e.g., if the transaction included multiple elements and the value of each element is not clear), then it may be appropriate to give the transaction less weight (see paragraphs 8.42–.49 for a discussion of factors to consider in weighting).

- 8.24** Applying this guidance requires significant judgment. If the equity securities underlying the stock-based compensation awards are actively traded, the quoted price is the fair value.⁵ However, if the equity securities underlying the stock-based compensation awards are not actively traded, as would generally be the case for private companies, all relevant information about market participant assumptions should be utilized. Therefore, the company should consider both the observable prices (maximizing the use of relevant observable inputs, as required in FASB ASC 820-10-35-36), as well as other factors that market participants in the principal (or most advantageous) market would consider when transacting in the equity securities underlying the stock-based compensation award. These other factors may be incorporated into a valuation model as discussed elsewhere in this guide. In determining the relevance of the transactions, it would be appropriate for the company to consider the factors discussed in paragraphs 8.42–.49 and the extent to which the transactions are representative of the price that market participants in the principal (or most advantageous) market would pay for the securities.

Calibration to Entry or Observable Prices

- 8.25** Most privately held companies have periodic primary transactions (e.g. preferred stock financings), and some privately held companies also have observable secondary transactions (e.g. common stock transactions). Calibration of a model to an observable transaction price is required when the transaction price represents or provides evidence of fair value. When calibrating to the observable transaction price, the valuation model(s) used to estimate the fair value of the company's securities underlying the stock-based compensation awards may use the observable information from both types of transactions (primary and secondary). In some cases, calibration may be simple – for example, using the price from a transaction that occurred in the principal (or most advantageous) market shortly before the measurement date and confirming that there have been no changes in the prices that market participants would pay between the transaction date and the measurement date). In other cases, calibration may be complex – for example, using the primary transaction in the preferred stock from six months prior to the measurement date to estimate an enterprise value, calibrating the income approach and market approach valuation models to the estimated enterprise value, then updating the enterprise value considering changes in the markets and changes in the company between the financing date and the measurement date, and finally allocating that value to the different classes of equity securities issued by the company to estimate the value of the equity security underlying the stock-based compensation award as of the measurement date. See the

⁵ See paragraph 8.04. Note that in certain limited circumstances, there may be situations where the company releases material non-public information (MNPI) soon after the grant date and the market positively reacts to this MNPI; in such cases, SEC Staff Accounting Bulletin 120 indicates that it may be appropriate to adjust the price for measuring the value of the stock-based compensation awards. For additional discussion, see paragraph 9.03 in chapter 9, “Selected Accounting and Disclosure Matters.”

“Applying Calibration in Valuing the Securities in an Enterprise” section in paragraphs 3.111–.128 and Q&As 10.6–.14 for additional discussion on calibration and considerations in assessing the changes in value between measurement dates; also see chapter 6, “Valuation of Equity Securities in Complex Capital Structures,” for additional discussion of considerations in assessing the difference in value between various classes of equity.

- 8.26** Irrespective of the types of transactions and types of models considered, the objective of the valuation is to estimate the price that would be received in the principal (or most advantageous) market for the securities underlying the stock-based compensation awards at the measurement date, given the information that would be known to market participants in that market.⁶ Therefore, the calibration process must be consistent with that objective. FASB ASC 820-10-35-24C states the following:

If the transaction price is fair value at initial recognition and a valuation technique that uses unobservable inputs will be used to measure fair value in subsequent periods, the valuation technique shall be calibrated so that at initial recognition the result of the valuation technique equals the transaction price. Calibration ensures that the valuation technique reflects current market conditions, and it helps a reporting entity to determine whether an adjustment to the valuation technique is necessary (for example, there might be a characteristic of the asset or liability that is not captured by the valuation technique). After initial recognition, when measuring fair value using a valuation technique or techniques that use unobservable inputs, a reporting entity shall ensure that those valuation techniques reflect observable market data (for example, the price for a similar asset or liability) at the measurement date.

- 8.27** In determining whether the price paid to acquire a security (an entry price) is representative of fair value (an exit price) at initial recognition, it is important to consider the characteristics of the transaction and the unit of account. As indicated in FASB ASC 820-10-30-3A:

When determining whether fair value at initial recognition equals the transaction price, a reporting entity shall take into account factors specific to the transaction and to the asset or liability. For example, the transaction price might not represent the fair value of an asset or a liability at initial recognition if any of the following conditions exist:

- a. The transaction is between related parties, although the price in a related party transaction may be used as an input into a fair value measurement if the reporting entity has evidence that the transaction was entered into at market terms.

⁶ Please see chapters 3–7 for discussion of valuation concepts needed when calibrating models to observed transactions.

- b. The transaction takes place under duress or the seller is forced to accept the price in the transaction. For example, that might be the case if the seller is experiencing financial difficulty.
- c. The unit of account represented by the transaction price is different from the unit of account for the asset or liability measured at fair value. For example, that might be the case if the asset or liability measured at fair value is only one of the elements in the transaction (for example, in a business combination), the transaction includes unstated rights and privileges that are measured separately in accordance with another Topic, or the transaction price includes transaction costs.
- d. The market in which the transaction takes place is different from the principal market (or most advantageous market). For example, those markets might be different if the reporting entity is a dealer that enters into transactions with customers in the retail market, but the principal (or most advantageous) market for the exit transaction is with other dealers in the dealer market.

8.28 Calibration is always required when the observed transaction is still relevant at the measurement date. The transaction price may not be relevant if market participants in the principal (or most advantageous) market would know that there has been such a significant change in the circumstances since the transaction date that a change in the valuation methodology would be warranted. For example, if the company has announced a merger transaction and there have been no observable transactions since the announcement, it typically would not be appropriate to use the previous transactions to indicate the fair value at a post-announcement measurement date.

8.29 Subsequent measurements of fair value using the valuation approaches described in chapter 3, “Overview of Valuation Approaches,” should incorporate the calibration to the transaction price described previously, as well as consider any other observable transaction prices identified on the company’s securities. For further discussion, see the “Applying Calibration in Valuing the Securities in an Enterprise” section in chapter 3.

Primary Transactions

8.30 Transactions in which the company sells securities directly to a third-party investor are not transactions in a principal or most advantageous market (because they do not represent sales of existing securities between two or more parties) and represent an “entry price” rather than an “exit price” for those securities.⁷ Additionally, in many cases, such transactions involve classes of securities (often preferred stock) that differ from the class of equity securities typically issued for compensation (often common stock). However, primary transactions are observable transactions that may provide relevant information about unobservable inputs to the valuation models that would be used to measure the fair

⁷ FASB ASC 820-10-30-2 requires the fair value to be based on an exit price. Both FASB ASC 820-10-30-2 and the FASB Master Glossary definition of an *exit price* clarify that an exit price is “[t]he price that would be received to sell an asset or paid to transfer a liability.” A primary issuance involves neither the sale of an existing asset nor the transfer of an existing liability. Instead, a primary issuance is the creation of a new security.

value of the company's securities underlying the stock-based compensation awards, as described in paragraphs 8.23, 8.25–.27, 8.57 and chapters 3–7 of this guide. For example, if using the guideline public company method to value the business at subsequent valuation dates, the market multiple used for valuing the business can be calibrated to the equity value implied by the primary transaction and then adjusted for changes in the company and changes in the markets between the valuation dates, as illustrated in paragraphs 3.111–.116. Similarly, if using the discounted cash flow method to value the business at subsequent valuation dates, the expected rate of return (the discount rate) can be calibrated to the equity value implied by the primary transaction considering the forecasted cash flows as of the transaction date, and then adjusted for changes in company's outlook and the markets between the valuation dates, as illustrated in paragraphs 3.117–.123. For further discussion of primary transactions, see paragraphs 8.56–.61. As discussed in paragraph 8.26, when calibrating to primary transactions, it is important to recognize that the objective of the valuation is to estimate the exit price that would be received in the principal (or most advantageous) market for the securities underlying the stock-based compensation awards at the measurement date, given the information that would be known to market participants in that market. Therefore, the calibration should consider this information.

Secondary Transactions

- 8.31** When the company's securities are sold between existing holders and third parties in a secondary transaction (such transactions are further discussed in paragraphs 8.62–.67), this creates observable price information about the company's securities. The secondary transactions may not necessarily be the sole or primary basis for measuring fair value. However, such market data should be evaluated in accordance with the FASB ASC 820 framework as part of determining the fair value of the company's securities underlying the stock-based compensation award; although a company may weight this information together with other indications of fair value when the transaction is not in the principal market (or, in the absence of a principal market, the most advantageous market) or the principal market (or most advantageous market) is not an active market as discussed in paragraph 8.07. FASB ASC 820-10-35-54F states that "[w]hen weighting indications of fair value resulting from the use of multiple valuation techniques, a reporting entity shall consider the reasonableness of the range of fair value measurements. The objective is to determine the point within the range that is most representative of fair value under current market conditions." Therefore, similar to any other asset or liability, when determining the fair value measurement of an instrument traded in a secondary market with limited activity, the task force believes it is necessary to consider all available trade data in developing market participant assumptions, including from thinly-traded secondary markets, in conjunction with information from other valuation approaches. FASB ASC 820 notes that valuation techniques should maximize the use of observable inputs and minimize the use of unobservable inputs.

- 8.32** If there are transactions for an identical security that take place over some period before or after the measurement date,⁸ then the task force believes it would be appropriate to take the value indicated by these transactions into account as discussed in paragraph 8.07. However, the value as of the measurement date that is indicated by the transaction prices before and after the measurement date would be estimated by first making adjustments for any changes in value over time that market participants in the principal (or most advantageous) market would consider due to the company's progress or market factors between the transaction date (or the date upon which the transaction and its price was fixed, such as in a committed forward purchase) and the measurement date. If there is significant uncertainty in the adjustments required, it may be appropriate to give the transaction less weight (see paragraphs 8.42–.49 for additional discussion).
- 8.33** If there are transactions for a related instrument in the enterprise, then the task force believes it would be appropriate to take the value indicated by these transactions into account as discussed in paragraph 8.07. However, to value the equity security underlying the stock-based compensation awards, the transaction price for the related instrument would be adjusted for any differences between the instruments (if applicable). See chapter 6 for additional discussion.
- 8.34** FASB ASC Master Glossary defines an *orderly transaction* as "a transaction that assumes exposure to the market for a period before the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets or liabilities; it is not a forced transaction (for example, a forced liquidation or distress sale)." In private company primary financing transactions (which, as noted in paragraph 8.30, would not be considered to take place in a principal or most advantageous market for the resale of such securities), the usual and customary marketing activities generally include time for the investors to perform due diligence and to discuss the company's plans with management or the board of directors, or both. In secondary transactions, the market participants may have access to different degrees of information. However, this does not preclude the transaction from being considered orderly.
- 8.35** As discussed in paragraph 8.22, the FASB ASC Master Glossary defines *market participants* as buyers and sellers that are (a) independent of each other (although related party transactions may be used as an input to a fair value measurement), (b) knowledgeable (having a reasonable understanding about the asset and the transaction using all available information, including information that might be obtained through due diligence efforts that are usual and customary), (c) able to enter into a transaction, and (d) willing to enter into a transaction (i.e. motivated but not otherwise forced or compelled to do so). Participants in secondary transactions that occur in the principal (or most advantageous) market are considered market participants in those transactions.

⁸ These transactions provide observable information that can be used to calibrate the valuation model(s) used to value the securities at dates between the transactions. Transactions that take place after the measurement date may be considered to the extent that those transactions provide information about conditions that existed at the measurement date. The valuation as of the measurement date should reflect the changes in the company and the changes in the markets between the most recent transaction date and the measurement date and between the measurement date and the subsequent transaction date. For additional discussion, see the "Applying Calibration in Valuing the Securities in an Enterprise" section in paragraphs 3.111–.128.

Accordingly, the information usually and customarily available to and utilized by those market participants in determining the assumptions that they would consider in pricing the security is the relevant threshold in evaluating market participant indications of fair value, even if that is a lesser degree of information than would be available to investors who have access to management of the company. For example, because private companies do not have the same disclosure obligations as public companies, market participants in the principal (or most advantageous) market may not have access to information about significant events at the company (e.g. status of clinical trials), historical or projected financial information, details about the capital structure or rights associated with the securities issued to the company's investors (e.g. preferred stock), transactions or financing rounds under negotiation, or other material non-public information that could have a significant impact on the price if it were known. Nevertheless, the fair value of the securities underlying the stock-based compensation awards would not consider any information that is not known or knowable to market participants in the principal (or most advantageous) market.⁹

- 8.36** In a primary financing transaction in which the company is issuing new shares to investors, the information would often include information that a seller would customarily provide during due diligence, such as (but not limited to) information about operations, projections, product development, intellectual property, customers, employee base, key contracts, etc., as well as information about the existing capital structure. Far less information may be available to market participants in a secondary transaction. However, as noted in paragraph 8.30, primary transactions do not occur in the principal or most advantageous market. In addition, for many privately-held companies, the primary financing transactions involve a different type of security (e.g., preferred stock) than secondary transactions (e.g., common stock, which often corresponds with the security underlying the stock-based compensation award). As a result, the level of information available to the participants in a primary transaction should not be viewed as the most relevant comparison in determining the degree of information available to market participants in the principal or most advantageous market for an exit transaction.
- 8.37** If the secondary transactions take place in the principal or most advantageous market for the same type of security underlying the stock-based compensation award (e.g. the common stock), the information that is available to the parties still reflects market participant assumptions amongst investors who are willing to transact based on that information. In that case, the lesser level of information encountered in the secondary

⁹ As discussed in footnote 5 in paragraph 8.24, in certain limited circumstances, there may be situations where the company releases MNPI soon after the grant date and the market positively reacts to this MNPI; in such cases, SEC Staff Accounting Bulletin 120 indicates that it may be appropriate to adjust the price used for measuring the value of the stock-based compensation awards. Note, however, that typically a private company has no obligation to release information to the secondary market and, therefore, it may not be possible to observe the market's reaction to the MNPI. Furthermore, the company will almost always have more information about its plans and prospects than is available to market participants. The existence of MNPI in and of itself would not be a sufficient reason to place less weight on observable prices.

transaction compared to a primary transaction (e.g. a preferred stock issuance) is not an indication that less weight should be placed on the transaction price.

- 8.38** If the principal (or most advantageous) market is deemed to be the principal-to-principal market, then the objective is to estimate the value at which the common stock would be sold in a principal-to-principal transaction at the measurement date. In this case, the company would consider the likely types of market participants – such as financial investors, strategic investors, private individuals, other employees, or secondary exchanges – and what level of information they would expect to examine in order to be willing to execute a transaction as a knowledgeable buyer or seller, having a reasonable understanding about the security and the transaction.

- 8.39** FASB ASC 820-10-35-54J states

A reporting entity shall consider all of the following when measuring fair value or estimating market risk premiums:

- a. If the evidence indicates the transaction is not orderly, a reporting entity shall place little, if any, weight (compared with other indications of fair value) on that transaction price.
- b. If the evidence indicates that a transaction is orderly, a reporting entity shall take into account that transaction price. The amount of weight placed on that transaction price when compared with other indications of fair value will depend on the facts and circumstances, such as the following:
 1. The volume of the transaction
 2. The comparability of the transaction to the asset or liability being measured
 3. The proximity of the transaction to the measurement date.
- c. If a reporting entity does not have sufficient information to conclude whether a transaction is orderly, it shall take into account the transaction price. However, that transaction price may not represent fair value (that is, the transaction price is not necessarily the sole or primary basis for measuring fair value or estimating market risk premiums). When a reporting entity does not have sufficient information to conclude whether particular transactions are orderly, the reporting entity shall place less weight on those transactions when compared with other transactions that are known to be orderly.

A reporting entity need not undertake exhaustive efforts to determine whether a transaction is orderly, but it shall not ignore information that is reasonably available. When a reporting entity is a party to a transaction, it is presumed to have sufficient information to conclude whether the transaction is orderly.

- 8.40** When assessing the relevance of secondary transactions to the fair value of the equity securities underlying the stock-based compensation awards based on the guidance in FASB ASC 820 as described previously, an important consideration is whether the transaction is orderly or not orderly. FASB ASC 820-10-35-54I states in part:

Circumstances that may indicate that a transaction is not orderly include the following:

- a. There was not adequate exposure to the market for a period before the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets or liabilities under current market conditions.
- b. There was a usual and customary marketing period, but the seller marketed the asset or liability to a single market participant.
- c. The seller is in or near bankruptcy or receivership (that is, the seller is distressed).
- d. The seller was required to sell to meet regulatory or legal requirements (that is, the seller was forced).
- e. The transaction price is an outlier when compared with other recent transactions for the same or a similar asset or liability.

A reporting entity shall evaluate the circumstances to determine whether, on the weight of the evidence available, the transaction is orderly.

Concluding that a transaction is not orderly would require knowledge of the transaction dynamics and satisfaction of one or more of the preceding indicators. The task force believes that such a conclusion would be rare.

- 8.41** As noted in FASB ASC 820-10-35-54J(b) and (c), in the situations when the transaction is orderly but not in an active market, or when the company does not have sufficient information to determine whether or not the transaction is orderly, the secondary transactions may not necessarily be the sole or primary basis for measuring fair value. Therefore, the task force believes the transaction price would need to be given weight in measuring fair value, but that it may be appropriate to augment the transaction price with other valuation techniques or information about transactions that are known to be orderly.

Factors to Consider in Assessing the Relevance of Transaction Prices and Their Weighting

- 8.42** There are many factors to consider in assessing the relevance of the transaction prices when the secondary transactions are not considered determinative. Determining how much weight to place on secondary transactions requires significant judgment and is

dependent on specific facts and circumstances.¹⁰ The following list of questions to assess is not meant to be all-inclusive, and making these judgments is not meant to be a mathematical exercise. There may be other questions to consider, and no one question is individually determinative.

- 8.43** If there have been multiple observable transactions within a relevant timeframe, how consistent or similar were the prices?

Indications of less weight

- Transaction prices are so inconsistent that they do not provide a reasonable basis for estimating the fair value on the measurement date

Indications of more weight

- Multiple transactions with consistent pricing or pricing that has changed over time consistent with developments at the company or changes in the markets

- 8.44** What information about the company was available to buyers and sellers?

Indications of less weight

- Buyers and sellers lacked certain relevant information that market participants in the principal (or most advantageous) market would typically consider¹¹

Indications of more weight

- Buyers and sellers had access to information similar to other market participants in the principal (or most advantageous) market

- 8.45** What was the significance of the transaction?¹²

Indications of less weight

- Transaction was de minimis to both parties (for example, if the transaction was such a small amount of money that the parties did not negotiate the price or the price may have been influenced by other considerations)

Indications of more weight

- Sales represented a substantive transaction to both parties

¹⁰ If the company lacks access to information on certain factors, the company may consider the relative relevance of the transactions compared with other indications of value based on the factors for which information is available. If there are various observable transactions, the company may place more weight on the transactions for which (a) it has access to information about the transaction and (b) the information supports a higher degree of confidence in the relevance of those transactions.

¹¹ See paragraphs 8.35–.38 for a discussion of the differences in the information that is typically available in primary financing transactions compared with secondary transactions, and considerations in determining whether the information available for those secondary transactions is consistent with the information that market participants in the principal (or most advantageous) market would consider.

¹² The volume of the transaction may be considered as an indication of its relevance, but it would not be appropriate to use the volume of the transaction as a percentage of the total shares outstanding as a proxy for the percentage weight to apply. Even for securities that are traded in an active market, it is typical that only a small percentage of the outstanding shares are transacted in a given timeframe.

- 8.46** Who are the buyers (Strategic buyers? Financial buyers? Participants in secondary market exchanges?) and do they represent market participants in the principal or most advantageous market for the recipients of stock awards (see further discussion in paragraphs 8.19 and 8.59)?

Indications of less weight

- Transaction did not occur in the principal (or most advantageous) market

Indications of more weight

- Transaction occurred in the principal (or most advantageous) market

- 8.47** Were there any other arrangements or relationships associated with either the buyer or seller and the company? In other words, was this a form of a multiple element transaction (including falling under a pre-existing relationship), or a stand-alone transaction? Note that if the company determines that the transaction included multiple elements (for example, intent to compensate or other commercial arrangements), then it would be appropriate to first allocate the price between the different elements, if possible, before considering the weighting, as the unit of account between the secondary transaction and the shares subject to valuation would not be the same.^{13 14}

¹³ After allocation of the total transaction price to the various elements, the weighting of the amount ascribed to the shares would consider the observability of the value of the different elements. If the company cannot reasonably estimate the impact of these additional elements (for example, see discussion of compensation costs in paragraph 8.48), the degree of weight to be applied to the transaction would need to be thoroughly considered, as the overall transaction price would not be consistent with the unit of account for the shares subject to valuation.

¹⁴ FASB ASC 505-30-25-3 and paragraphs 2–4 of FASB ASC 505-30-30 discuss accounting for a company's purchases of its own shares from shareholders to be held in treasury in situations when the purchase price may include other transaction elements. This guidance provides that such a transaction may also involve the receipt or payment of consideration in exchange for stated or unstated rights or privileges. It also states that if the price paid is “different from the price obtainable in transactions in the open market or transactions in which the identity of the selling shareholder is not important, some portion of the amount being paid presumably represents a payment for stated or unstated rights or privileges that shall be given separate accounting recognition.” Therefore, the price paid in excess of the amount accounted for as the cost of treasury shares shall be attributed to the other elements of the transaction and accounted for according to their substance.

Indications of less weight (after considering price allocation described previously)

- Transaction involved other commercial arrangements with the buyer or seller
- Motivation for the transaction was primarily or partially to provide liquidity for the employees at a favorable price to improve recruiting or retention (see paragraphs 8.63–.64), which may be indicative of compensation elements (see paragraph 8.48)
- Motivation for the transaction included intent to compensate (see paragraph 8.48)
- Limited number and nature of sellers (e.g., only the founders, only C-suite employees), which may be an indication that there were other motivations for the transaction, such as compensation (see paragraph 8.48)

Indications of more weight

- Transaction was a stand-alone transaction with no intent to compensate and no other commercial arrangements being entered into with the buyer
- Broad number of sellers, particularly those that have no present or past employment or commercial relationships with the company (i.e. financial investors)¹⁵

¹⁵ Transactions involving sellers that have present or past employment or commercial relationships with the company should be evaluated to determine if there is a compensatory element. See further discussion in paragraphs 8.48 and 8.63–.64.

8.48 Is there compensation expense being recorded on the secondary transaction for financial reporting purposes?¹⁶ Is there ordinary income being reported as compensation for taxes on the sale of shares that would otherwise have been subject to capital gains tax?¹⁷

Indications that transaction price may not represent an observable price for the shares

- Company concluded that compensation expense must be recorded for financial reporting purposes
- Company concluded that there was intent to compensate (see paragraphs 8.63–.64) and reported ordinary income as compensation for tax purposes on the employee’s tax reporting documents for the sale of shares that would otherwise have been subject to capital gains tax based on the difference between the transaction price and the estimated fair market value
- A favorable price was established primarily or partially for compensatory purposes

Indications that transaction price represents an observable price for the shares

- Company concluded that no compensation expense need be recorded for financial reporting purposes
- Company concluded that there was no intent to compensate and did not report ordinary income as compensation on the employee’s tax reporting documents for the sale of qualifying shares
- The company has limited involvement in the transaction and did not establish the price, which may be one indication that there was no intent to compensate

¹⁶ If the company concludes that the fair value of the shares is lower than the price that the company or its investors paid to purchase shares from an employee, the difference between the transaction price and the fair value of the shares would typically be considered additional compensation cost for financial reporting purposes, unless there was another pre-existing relationship between the buyer and the seller that provides a rationale for the excess payment. Please see FASB ASC 718-20-35-7 and FASB ASC 718-10-15-4 for additional discussion. Ideally, the company should value the compensation expense element separately from the transaction price for the shares. However, because it may not be possible for a company to independently determine the amount of compensation expense paid to recipients, it may be difficult to determine the stand-alone value of the shares based upon the overall transaction price in these types of transactions. For further discussion, see chapter 9.

¹⁷ The tax treatment upon vesting of restricted stock or upon exercise of stock options (or exercise and a disqualifying disposition of the shares) is not indicative of the company’s conclusion regarding whether the purchase price represents the fair market value of the shares and, therefore, is not relevant in assessing this factor. However, if the company concludes that the fair market value of the shares is lower than the price that the company or its investors paid to purchase shares from an employee that have been held long enough that they would otherwise have been subject to capital gains tax, the difference between fair market value and the transaction price may be considered taxable income to the employee. A discussion of the tax implications of these transactions is outside the scope of this guide. The company should consult its tax advisers in this situation.

- 8.49** How recent was the transaction? How would market participants consider the changes in the value of the securities and the underlying business since the transaction?

Indications of less weight

- Market participants in the principal (or most advantageous) market know that there have been significant changes in the company or the markets between the most recent transaction and the measurement date, making the transaction less relevant¹⁸

Indications of more weight

- Transaction was recent and there have been no significant changes in the company or the markets subsequent to the transaction
- There have been changes in the company or the markets between the transaction date and the measurement date, but it is possible to calibrate to the original transaction price and then adjust for these changes (in this case, the company would consider the adjusted transaction price in its analysis)

Factors to Consider in Assessing the Relevance of Other Indications of Fair Value and Their Weighting

- 8.50** As discussed in paragraph 8.31, observable secondary transactions may not necessarily be the sole or primary basis for measuring fair value and they may need to be considered in conjunction with information from other valuation approaches. If more than one valuation approach is used, as is often the case, it is important to assess the relevance and quality of the data used in each, as well as the various value indications (for further discussion, see paragraphs 8.68–.71).
- 8.51** If consideration of the factors in paragraphs 8.42–.49 indicates that it is appropriate to place less weight on the secondary transactions, the company also would typically use a value indication from a valuation analysis as one of the inputs used to estimate the fair value of the equity securities underlying stock-compensation awards. Since valuation models necessarily use unobservable inputs and require judgment, it is important to assess the relevance of the value indication from such models in estimating the fair value at which market participants in the principal (or most advantageous) market would transact. The selected weighting on the secondary transactions and the other indications of value would consider the relevance of these two estimates relative to each other, considering the factors in paragraphs 8.42–.49 and 8.53–.55.
- 8.52** Note that there may be circumstances where certain types of valuation models or assumptions do not appropriately reflect the extent to which market participants in the principal (or most advantageous) market for the security underlying the stock-based compensation award (e.g. common stock) would place value on the liquidation preferences or other features for the securities issued in primary transactions (e.g.

¹⁸ As described in paragraph 8.28, calibration is always required when the observed transaction is still relevant at the measurement date. The transaction price may not be relevant if market participants in the principal (or most advantageous market) would know that there has been such a significant change in the circumstances since the transaction date that a change in the valuation methodology would be warranted.

preferred stock), or where the valuation model was not appropriately calibrated to the prices observed in the most recent primary transactions to reflect the price that market participants in the principal (or most advantageous) market would pay for the securities underlying the stock-based compensation awards. In such circumstances, it would be appropriate to adjust the valuation model to more appropriately reflect market participant perspectives before deciding on a weighting between the indications of value inferred from the secondary transactions and the indications of value inferred from the primary transactions. In particular, it is important to ensure:

- a. The valuation model calibrated to the primary transactions captures the extent to which market participants are considering the company on a common stock equivalent basis: for example, using a common stock equivalent method if the observable transactions indicate that market participants in the principal (or most advantageous) market assign no value to the liquidation preferences or other features, or using a debt-like preferred plus upside method or a hybrid method including a common stock equivalent scenario if market participants in the principal (or most advantageous) market would place some value on the liquidation preferences or other features. See chapter 6 for further discussion.
- b. The valuation model is appropriately calibrated to a relevant recent transaction and captures the changes in the company and the markets between the transaction date and the measurement date (considering the factors and objectives described in paragraphs 8.25–.26). See chapter 3 for an example of calibration.

8.53 There are many factors to consider in assessing the relevance of indications of fair value for the securities underlying the stock-based compensation awards other than observable secondary transactions. Determining how much weight to place on other indications of fair value requires significant judgment and is dependent on specific facts and circumstances. The following list of questions to assess is not meant to be all-inclusive, and making these judgments is not meant to be a mathematical exercise. There may be other questions to consider, and no one question is individually determinative.

8.54 Was there a relevant recent transaction that provides a basis for calibrating the valuation model?

Indications of less weight to be placed on other indications of fair value

- The company has not recently completed a relevant transaction.
- There are significant differences between the securities issued in the previous transaction and the securities underlying the stock-based compensation awards, and the company cannot reliably quantify the impact of these differences.

Indications of more weight to be placed on other indications of fair value

- There is a relevant recent transaction and the company can reliably quantify the differences between the securities issued in the previous transaction, and the securities underlying the stock-based compensation awards, to reflect the price that market participants in the principal (or most advantageous) market would pay for the securities underlying the stock-based compensation awards.

- There are significant differences in the information available to the parties in the previous transaction and the market participants in the principal (or most advantageous) market for the securities underlying the stock-based compensation awards.
- Market participants in the principal (or most advantageous) market are aware that there have been changes in the company or the markets between the transaction date and the measurement date, and it is possible to calibrate to the original transaction price and then adjust for these changes (in this case, the company would consider the adjusted transaction price in its analysis)

8.55 What is the predictability of the cash flows and other key performance indicators of value of the company? What is the degree of confidence in the unobservable inputs to the valuation model?

Indications of less weight to be placed on other indications of fair value

- Early-stage company, such as one which is still doing research and development and has no product revenues
- Company does not have sufficient data and processes in place to prepare reliable forecasted financial information, increasing the estimation uncertainty in the total equity value

Indications of more weight to be placed on other indications of fair value

- Later stage company with more predictable cash flows and/or other key performance indicators of value
- Company has sufficient data and processes in place to prepare reliable forecasted financial information, supporting a model of the total enterprise value using both the income approach and the market approach

Types of Transactions – Securities Issued by the Company (Primary Transactions)

8.56 There are many types of private transactions that may be completed by the company issuing securities directly (i.e. primary transactions), with differing degrees of relevance as an indication of the fair value of the securities within the enterprise. Some of the more frequent types of these transactions and their relevance to the fair value of the securities within the enterprise are summarized in this section.

8.57 Privately-held companies typically issue preferred stock or other equity securities in order to raise capital to fund operations or expansion. As noted in paragraph 8.27, these transactions are generally considered to reflect fair value at the transaction date, unless there is evidence to the contrary. While these are “entry”, rather than “exit” prices, and these transactions do not occur in the principal or most advantageous market for a holder of such securities, they still provide relevant information about market participant assumptions regarding the company’s securities. Therefore, as noted in paragraphs 8.25–.30, companies should generally calibrate valuation models considering these transactions, to reflect the price that market participants in the principal (or most advantageous) market would pay for the securities underlying the stock-based compensation awards.

8.58 *Simple preferred stock financing transactions.* The simplest form of a preferred stock financing transaction is a transaction when the company issues preferred stock in exchange for cash. Factors to consider in calibrating to these transactions for the purposes of valuing common stock include:

- a. When the transaction involves new investors, the company and any existing investors have an incentive to negotiate the best possible price for the shares; however, the new investors have an incentive not to overpay. These transactions are relevant in estimating the fair value of the securities within the enterprise; therefore, it would typically be appropriate to calibrate considering these transactions when developing a valuation model to estimate the fair value of the securities within the enterprise.
- b. When the transaction does not involve new investors, the investors may be considered related parties.¹⁹ While transactions between related parties may be an indication that the transaction price is not fair value, FASB ASC 820-10-30-3A(a) states that “the price in a related party transaction may be used as an input into a fair value measurement if the reporting entity has evidence that the transaction was entered into at market terms.” The task force believes more weight generally should be given to transactions that involved robust negotiations (for example, if certain investors were increasing or decreasing their percentage ownership or if the round is at a different price than the previous round). Conversely, less weight might be given to transactions that may not have involved robust negotiations (for example, if all investors are participating pro-rata and any dilution or accretion from a transaction price that was not fair would impact all investors equally). It should be noted that the board of directors generally has a fiduciary responsibility to shareholders to set the price of newly issued shares at a valuation which is in the best interest of the company (and all of its shareholders) at the time of the transaction. The factors considered by the board may provide some insight in considering whether the pricing of the round was at fair value.
- c. When the company is in distress, the price for a new round may reflect the investor’s ability to negotiate favorable terms given the company’s need for capital. However, following the transaction, the company’s success at raising this capital may improve the equity value for the company. In these situations, for the purpose of valuing the other securities in the company for measurement dates following the transaction, including the securities underlying the stock-based compensation awards, it may be appropriate to consider the company’s improved financial condition post-transaction, rather than basing the valuation on the circumstances of the company immediately prior to the transaction (that is, it may not be appropriate to calibrate to the distressed transaction price, depending on facts and circumstances and the terms of the securities issued to the investor).

¹⁹ “Related parties” as defined in the FASB ASC Master Glossary include investors who meet certain criteria, and therefore may not include certain investors with limited interests in the company. From a valuation perspective, all existing investors are typically considered related parties.

- d. In many situations, the Option Pricing Method may overstate the value of liquidation preferences and, thus, it may be necessary to make adjustments or use an alternative method when calibrating to the transaction. For further discussion, see the “The Option Pricing Method” section in paragraphs 6.38–.85 of chapter 6.

8.59 *Strategic preferred stock financing transactions.* In some cases, a preferred stock investor may have strategic reasons for making the investment, beyond the direct economic benefit expected. Factors to consider in calibrating to these transactions (subject to any adjustments described below) when valuing common stock include:

- a. When the transaction involves a strategic relationship in which the investor receives certain benefits that other potential market participants in the principal or most advantageous market (which is described in paragraphs 8.16–.24) would not be expected to receive, this may be an indicator that the transaction price does not necessarily reflect fair value. For example, pharmaceutical companies may invest in biotech companies at relatively early stages of development because there is value in being the first to know about the companies’ progress on various drug candidates. If such investors do not reflect market participants in the principal (or most advantageous) market for those shares, the price the pharmaceutical company pays may exceed what other market participants would be willing to pay for such shares to reflect these additional benefits. In these cases, one approach would be to perform a valuation of the equity using other methods but then also compare the model values to the transaction price to assess whether the implied value is reasonable in light of the strategic benefits the investor may realize.
- b. When an investor invests in the company and also negotiates a formal license to use the company’s products in the investor’s business, it likely will be necessary to allocate value between the equity investment and license.²⁰ In these cases, one approach would be to perform a valuation for both the equity and license agreement using other methods and then compare the combined values to the total investment.
- c. When a strategic relationship is formed in which any additional elements of the transaction equally benefit the company and investors, or when other investors participate at the same price, it may be an indication that the transaction price is at or near fair value. In these cases, it may be appropriate to calibrate considering the transaction without significant additional adjustments.

8.60 *Tranched preferred financing transactions.* A *tranched preferred investment* is a transaction in which the investors agree to buy a certain number of shares at the initial closing date, as well as additional shares at one or more future dates, at a prenegotiated

²⁰ The focus in this discussion is to understand the implications of multi-element transactions on the value of the securities sold in the observed transaction and the corresponding value of the other securities in the enterprise. In some cases, it is also necessary to recognize the elements of multi-element transactions separately in the entity’s financial statements based on the requirements of other accounting guidance; for example, FASB ASC 606, *Revenue from Contracts with Customers*. The guidance regarding the accounting and valuation treatment for such transactions is beyond the scope of this guide.

price. Typically, each tranche is for the same class of preferred stock and has the same price per share, but the investment in the subsequent tranches may be contingent on the company meeting certain milestones. In many cases, both the company and investors have committed to complete the subsequent tranches whenever the milestones are met, regardless of whether the value of the company has changed for other reasons (that is, the tranching structure creates a contingent forward contract rather than an option under the control of one of the parties). Factors to consider in calibrating to these transactions when valuing the securities underlying the stock-based compensation awards (considering the guidance in paragraphs 8.25–.26) include:

- a. In most cases, the preferred stock would be expected to increase in value if the milestones are met. Therefore, the initial investment price often reflects a premium to the value of the preferred stock on the initial investment date (as it includes both the preferred stock itself and the contingent forward), and the later investment often is at a discount to the value of the preferred stock itself. In other cases, the criteria for receiving the next tranche may be unrelated to the company's progress, but the preferred stock value may still increase due to the overall progress of the company over the time frame. Therefore, before relying on the issuance price of a tranching preferred transaction to imply the value of the various equity securities within the enterprise, the task force believes the transaction price would need to be allocated among the preferred stock and the contingent forward contract.²¹
- b. One approach to estimate the value of the enterprise as of the initial transaction date would be to allocate the transaction price between the preferred stock and forward contract to estimate the value of the tranching preferred stock in each scenario (when the milestones are met and when there is a delay or setback in situations in which the milestones are not met), and then solve for the equity value that is consistent with the preferred stock value in each scenario.
- c. At subsequent investment dates (i.e. the issuance of the later tranches), as the purchase price was established at the time of the initial investment, the transaction price would generally not reflect a negotiated value at the time of the later investment. The company should consider the impact of the resolution of the milestones triggering the later tranche investments in its valuation of the company's securities, as well as any other unexpected changes in the company's performance or the market over the intervening period. See Q&A 10.30, "Tranching Financing," for further discussion.

8.61 *Use of shares in an acquisition or a joint venture.* When private companies use shares in the acquisition of other businesses or asset groups, the transaction documents may specify a value for these shares. This same situation occurs in joint ventures in which one

²¹ Similar to footnote 13 in paragraph 8.47, the focus in this discussion is to understand the implications of multi-element transactions on the value of the securities sold in the observed transaction and the corresponding value of the other securities in the enterprise. The guidance regarding the accounting and valuation treatment for such transactions is beyond the scope of this guide.

party may contribute cash, and the other may contribute intellectual property, and the securities issued in exchange for cash are senior to other securities. These transactions include an exchange of shares for non-cash consideration and, therefore, do not provide a direct indication of the fair value per share. Factors to consider in evaluating these transactions when valuing company shares include:

- a. In many cases, the value specified in the documents is the price paid in the latest preferred financing round, but the shares issued are common stock, or the nominal price may reflect an unrealistically high “headline price” for both the company and the target to ease the negotiations.
- b. It is important to carefully consider the rights and preferences of each class of equity, consistent with market participant assumptions, when estimating the fair value of the various components of the transaction. In these cases, one approach would be to perform a valuation of both the specific securities issued and the noncash assets contributed. It would not be appropriate to rely solely on the nominal price specified in the documents.
- c. On the other hand, the parties in such transactions typically negotiate both the nominal price per share in the agreements and the corresponding nominal value of the assets. Therefore, it would be appropriate to consider the reliability of the negotiations in assessing the fair value of the shares and the assets.

Types of Transactions – Secondary Transactions and Company Repurchases

8.62 In certain circumstances, employees who hold equity securities may sell securities to other investors or investors may sell securities to other investors. In addition, third-party investors or employees may sell securities back to the company. Some of the more frequent types of these transactions and their relevance to the fair value of the securities within the enterprise are summarized in this section. As discussed previously, it would be appropriate to consider the factors listed in paragraphs 8.42–.49 when assessing the relative relevance of the transactions compared with other indications of value.

8.63 *Repurchases by the company.* In certain circumstances, the company may choose to repurchase stock from investors or employees. A company should first assess whether such repurchase occurred based upon preexisting features in the original arrangement with the counterparty (e.g., a call feature in a stock-based compensation award) and, if so, how the repurchase price was defined. For example, a repurchase price based on a preexisting formula would likely not be indicative of an observable transaction price. On the other hand, repurchase transactions negotiated at the time of the repurchase may be more indicative of an observable transaction price. While transactions between related parties may be an indication that the transaction price is not fair value, FASB ASC 820-10-30-3A(a) states that “the price in a related party transaction may be used as an input into a fair value measurement if the reporting entity has evidence that the transaction was entered into at market terms.” See paragraph 8.58(b) for additional discussion. Factors to consider in calibrating to these transactions include:

- a. If the company's intention for the transaction was to compensate the employee shareholders (for example, to provide liquidity at a favorable price to assist with recruiting or retention or in connection with a severance agreement), then the transaction price may not represent a negotiated price that reflects fair value. These repurchases include both the shares and a non-cash component (the services provided or expected to be provided) and, therefore, do not provide a direct indication of the cash value per share.
- b. If the company and the shareholders' intention for the transaction was to pay fair value for the shares, then the transaction price may represent a negotiated price that reflects fair value. The prices may be more indicative of fair value if there were no compensatory or strategic reasons for the company to pay a price other than fair value.²²
- c. In circumstances when the intention was unclear, the price established for these repurchases might reflect market participant assumptions regarding the fair value of the shares. If the company also observes similar prices in other secondary transactions (which are discussed in paragraphs 8.64–.67), this may support a higher weighting of the repurchase price as an indication of fair value.
- d. The company may also initiate repurchases at the investors' request to prevent dilution in connection with a new financing. In some cases, the company may repurchase common stock from existing shareholders at the same price that preferred stock is sold to the investors. This type of transaction provides an indication of the price that investors were willing to pay for preferred stock, which may or may not be the same as what they would be willing to pay for common stock. In this situation, it is important to assess whether there would be any difference in the price of the two securities. If so, then any excess price that the company paid for common stock would typically be regarded as reflecting an intent to compensate as discussed in item (a) earlier in this paragraph.

8.64 *Transactions led by new or existing investor(s) participating in primary investments with the company.* In certain circumstances, one or more of the investors participating in the company's primary financings may choose to also purchase stock from other investors or employees. Factors to consider in calibrating to these transactions include:

- a. Investing is complex, and investors may have many motivations not described in this section. The analysis of the relevance of these transactions should consider the specific facts and circumstances. For example:
 - i. In some cases, the company or its current investors may be unwilling to issue as much preferred stock as a new investor would like. Thus, the new investor may approach the holders of the common stock to see if they would be willing

²² If a significant portion of the sellers were financial investors, the transaction price might be more indicative of fair value, unless the company had a strategic reason to pay the selling shareholders a price other than fair value. See, for example, FASB ASC 505-30-25-3 and paragraphs 2–4 in FASB ASC 505-30-30, which list possible situations in which a repurchase may involve a payment for other stated or unstated rights and privileges.

to sell. Frequently, these transactions involve the purchase of the common stock at the same price or a small discount to the preferred stock price.

- ii. In most funds, the primary motivation for a fund manager is to select investments that will generate an appropriate return across the fund portfolio. Therefore, in aggregate, such investors have a significant incentive not to overpay for their investment.
 - iii. In situations when capital is plentiful, investors also must compete for the opportunity to invest in promising companies. All else being equal, companies may prefer a financing transaction in which the investors include a liquidity component for all or some of the company's employees, to enhance the company's ability to recruit and retain employees as discussed in paragraph 8.63(a). In addition, improving the company's ability to recruit or retain employees would also be of benefit to the investors.
- b. There are several possible ways to reconcile the valuation to the transaction price, depending on facts and circumstances:
- i. Consider the overall transaction involving both preferred stock (primary) and common stock (secondary) as a bundled transaction and calibrate to the aggregate investment. In this approach, to the extent that the company concludes that preferred stock has a higher value than the common stock, the preferred stock value may be higher than the nominal negotiated price and the common stock value may be lower than the nominal negotiated price, such that the total reconciles to the aggregate investment price. This approach is most appropriate when all investors in the financing also purchased common stock on a pro-rata basis and typically would not be appropriate when only a subset of investors purchased both common stock and preferred stock. If the company also observes similar prices in other secondary transactions involving only common stock (as discussed in paragraphs 8.65–.67), these transactions may support a higher weighting on the common stock purchase price as an indication of fair value.
 - ii. Consider if the transaction is evidence that market participants are evaluating the company on a common stock equivalent basis; that is, liquidation preferences and other features of the preferred stock have less impact on value than the valuation analysis would otherwise indicate. Use a hybrid method or scenario analysis (as discussed in chapter 6) to model the difference in value between preferred and common stock.

8.65 *Transactions led by investor(s) or fund(s) that have not participated in the company's primary financings.* In certain circumstances, one or more investors/funds which do not have other primary investments in the company may choose to purchase stock from investors or employees. In calibrating to these transactions, consider the following:

- a. Certain investors or funds intentionally seek out investments in common stock, purchasing at a discount to or the same price as the most recently announced preferred stock price and hoping to achieve higher returns in a successful exit, or they may hope to obtain more information about the company or to establish relationships in the hopes of having the opportunity to participate in future financings. These situations may indicate that the fund had a strategic rationale for the investment, similar to paragraph 8.59, especially if the aggregate investment was insignificant to the fund. The company may or may not provide information to the investors and may or may not facilitate the transactions with employees.²³ As in all aspects of evaluating fair value under FASB ASC 820, in these situations, it would be appropriate to first consider whether such transactions represent the principal (or most advantageous) market for the common stock (and, therefore, whether these investors represent market participants in that market), and then consider the factors listed in paragraphs 8.42–.49 when assessing the relative relevance of these transactions compared with other indications of value.²⁴
- 8.66** *Transactions between private parties.* Individual accredited investors may purchase stock from investors or employees. In calibrating to these transactions, consider the following:
- a. For private party transactions, the company may have little to no insight regarding the negotiations between the buyers and sellers. The company may only be made aware of the transaction through a right of first refusal. Although in these situations, the company lacks information about the motivations of the buyers and sellers, these transactions should still be considered. If the company cannot determine whether or not the transaction is orderly, FASB ASC 820-10-35-54J(c) states that the company should still “take into account the transaction price. However, that transaction price may not represent fair value (that is, the transaction price is not necessarily the sole or primary basis for measuring fair value...). When a reporting entity does not have sufficient information to conclude whether particular transactions are orderly, the reporting entity shall place less weight on those transactions when compared with other transactions that are known to be orderly.” In such situations, it would be appropriate to consider the factors described in paragraphs 8.42–.49 when assessing the relative relevance of the transaction prices compared with other indications of value.
- 8.67** *Transactions on or facilitated by secondary market exchanges.* For certain companies, common stock transactions may be facilitated by secondary exchanges. Secondary exchanges provide a venue where nonpublic debt and equity securities may be traded,

²³ Depending on the company’s level of involvement in facilitating the transactions or setting the price, these transactions may also have compensatory elements as discussed in paragraph 8.63(a).

²⁴ See paragraph 8.35. If these transactions are considered to reflect the principal or most advantageous market, then the investors represent market participants that are willing to transact based on the information that was available to them.

either directly on the exchange or by use of the exchange as an intermediary. Factors to consider in calibrating to these transactions include:

- a. The price for a security in an orderly transaction in a principal (or most advantageous) market that is an active market is fair value and should not be adjusted, irrespective of whether that price ultimately proves to be a “bubble” or an “overcorrection”. See FASB ASC 820-10-35-41, which states, “A quoted price in an active market provides the most reliable evidence of fair value and shall be used without adjustment to measure fair value whenever available, except as specified in paragraph 820-10-35-41C.”
- b. If the market is not active (that is, if it does not provide sufficient frequency and volume to provide pricing information on an ongoing basis), then it would be appropriate to first consider whether such transactions represent the principal or most advantageous market for the company’s shares, and then consider the factors described in paragraphs 8.42–.49 when assessing the relative relevance of the transaction prices compared with other indications of value.

Conclusions

- 8.68** The relevance of secondary transactions in estimating the fair value of the equity securities underlying the stock-based compensation awards when compared with other indications of value will depend on the facts and circumstances, and making this assessment requires the use of significant judgment. The guidance in FASB ASC 820 provides the relevant framework, as described in this chapter, including a requirement to maximize the use of observable inputs and minimize the use of unobservable inputs. Secondary transactions should be evaluated to determine if they occurred in the principal (or most advantageous) market for that class of the company’s equity securities, and reflect market participant assumptions related to the fair value of the securities.
- 8.69** As indicated in paragraphs .31–.32 of Statement on Standards for Valuation Services No. 1, *Valuation of a Business, Business Ownership Interest, Security or Intangible Asset* (AICPA, *Professional Standards*, VS sec. 100), in developing the valuation, the valuation specialist should consider all three valuation approaches (market, income, and asset) and use the one(s) that are appropriate for the valuation engagement. If more than one valuation approach or method is used, as is often the case, the valuation specialist would need to assess the relevance and quality of the data used in each, as well as the various value indications. Because weighting will depend upon the relevant strengths and confidence in one approach versus another, the valuation specialist would need to consider the relative merits and weaknesses of the transaction-based evidence compared with other valuation approaches or methods used when determining how much weight to place on each indication of value.
- 8.70** If the transactions are not considered to represent fair value or are given only limited weight in estimating fair value, the task force recommends comparing the estimated fair value of the equity securities underlying the stock-based compensation awards to the transaction prices, documenting the way that the company considered the transactions in

the analysis and explaining the drivers of the differences between the transaction prices and the concluded fair value of the common stock.

- 8.71** The task force believes that when estimating the fair value of the equity securities underlying the stock-based compensation awards, it is important to consider the relevance of any observed transactions in the company's securities relative to other indications of value. Therefore, the company should give relevant observed transactions (both primary and secondary) appropriate weight. The company's concluded weighting on each indication of value will depend on many factors, as described in paragraphs 8.42–.49, along with paragraphs 8.50–.55. Making this assessment will require significant judgment.

WORKING DRAFT

Chapter 9

Selected Accounting and Disclosure Matters

Accounting

- 9.01** FASB *Accounting Standards Codification* (ASC) 718, *Compensation—Stock Compensation*, provides guidance on how to account for transactions in which a grantor issues its equity instruments to a grantee in exchange for “goods or services to be used or consumed in the grantor’s own operations” or to provide “consideration payable to a customer”¹ (for example, sales incentives). FASB ASC 718 also addresses transactions in which an entity incurs liabilities in exchange for goods or services or as sales incentives that are based, at least in part, on the price of the entity’s equity instruments or that may be settled by issuance of those equity instruments. FASB ASC 718 does not address the issuance to or repurchase of equity securities from a lender or investor that provides financing to the company (i.e., purchases of equity securities directly from the company in a financing transaction).²
- 9.02** FASB ASC 718 requires entities to recognize the cost of goods and services received in exchange for equity-classified awards based on the grant-date fair value of those awards (a fair value-based measurement), with limited exceptions. The cost is then recognized (1) over the period during which an employee is required to provide service in exchange for the award (the requisite service period), which is usually the vesting period, or (2) for goods and services provided by nonemployees, in the same period(s) and manner as if the grantor had paid cash (the nonemployee’s vesting period).³ FASB ASC 718 provides a complete accounting framework for such awards and only a portion of that accounting framework is discussed in this guide. This chapter primarily focuses on accounting

¹ FASB *Accounting Standards Codification* (ASC) 718-10-15-3.

² However, entities should also consider the guidance in paragraphs 3–4 of FASB ASC 505-30-25, as well as paragraphs 2–4 of FASB ASC 505-30-30, regarding the accounting for a company’s purchases of its own shares from shareholders to be held in treasury in situations when the purchase price may include other transaction elements. This guidance states that such a transaction “may also involve the receipt or payment of consideration in exchange for stated or unstated rights or privileges.” If the company repurchases shares “at a price that is different from the price obtainable in transactions in the open market or transactions in which the identity of the selling shareholder is not important,” it is presumed that some portion of that price is for stated or unstated rights or privileges. FASB ASC 505-30-30-3 states that “[t]he price paid in excess of the amount accounted for as the cost of treasury shares shall be attributed to the other elements of the transaction and accounted for according to their substance.” It also states that “[i]f no stated or unstated consideration in addition to the capital stock can be identified, the entire purchase price shall be accounted for as the cost of treasury shares.” Transactions in the scope of FASB ASC 505-30 are not addressed in this chapter.

³ FASB ASC 718, *Compensation—Stock Compensation*, provides measurement and classification guidance related to share-based compensation issued to a customer that is not in exchange for a distinct good or service (i.e., share-based sales incentives). For share-based sales incentives, the grant-date fair value of those awards is recognized as a reduction of the transaction price in accordance with FASB ASC 606, *Revenue from Contracts with Customers*.

considerations related to purchases of equity securities from grantees⁴ that are secondary transactions (including company repurchases), as well as certain disclosure considerations regarding stock-based compensation awards. Chapter 8, “Inferring Value From Transactions in a Private Company’s Securities,” provides a framework for evaluating such transactions and their effect, if any, on the estimation of the fair value of equity securities issued as compensation.

- 9.03** Topic 14, "Share-Based Payment," of the Securities and Exchange Commission’s (SEC’s) Codification of Staff Accounting Bulletins (created by Staff Accounting Bulletin [SAB] No. 107 and updated by SAB No. 110 and SAB No. 120) provides guidance that should be applied by public companies and is generally applied by analogy by nonpublic companies. SAB Topic 14 expresses views of the SEC staff regarding the interaction of FASB ASC 718 with certain SEC rules and regulations and provides the SEC staff’s views regarding the valuation of share-based payment arrangements. While the SEC staff’s views on valuation included in SAB Topic 14 are primarily related to developing assumptions used when valuing an option on an entity’s shares (i.e., expected term and volatility) that are beyond the scope of this guide, SAB Topic 14 was amended in November 2021 to include certain guidance on determining the current price of the underlying shares, such as when an entity grants a spring-loaded award⁵ in the scope of FASB ASC 718.

Accounting Considerations for Secondary Transactions

- 9.04** In certain circumstances, grantees that provide goods and services to a company or who are customers of a company and who hold equity securities in the company may sell those securities (1) to other investors or unrelated third parties⁶ or (2) back to the company. The Equity Securities Task Force (task force) believes those secondary transactions should be assessed for a compensatory element and how to determine the compensatory amount (if any). The FASB ASC guidance included in this chapter provides a framework for determining whether a secondary transaction includes an element of compensation, although it explicitly addresses only direct repurchases of equity securities or awards by the company. In many secondary transactions, the company is not the direct counterparty to the transaction with grantees. However, as further described in paragraphs 9.08–12, depending on the nature of the counterparties

⁴ For simplicity, this chapter generically refers to holders that may sell equity securities who are not solely financial investors as *grantees*, which could be broader than how this word is used in FASB ASC 718. These parties could have various business relationships with the company, such as founders, employees, nonemployee service providers, board members, former employees, customers, vendors, and so on. The business relationships may be ongoing or have ceased in the past.

⁵ Staff Accounting Bulletin (SAB) No. 120 describes a spring-loaded award as one where "share-based payments arrangements are entered into in contemplation of or shortly before a planned release of material non-public information, and such information is expected to result in a material increase in share price." For more information, see SAB No. 120, which is available on the [SEC website](#).

⁶ Paragraphs 9.07 and 9.08 provide additional discussion of the evaluation of such counterparties.

and if the company either directly or indirectly benefits from the secondary transaction, there may be an element of compensation that must be attributed to the company.

- 9.05** As stated in FASB ASC 718-10-15-3, the guidance in FASB ASC 718 “applies to all share-based payment transactions in which a grantor acquires goods or services to be used or consumed in the grantor’s own operations or provides consideration payable to a customer,” provided certain criteria about how the award will be settled or what its potential payout value is based upon are met.
- 9.06** FASB ASC 718-20-35-7 provides the following guidance for companies that repurchase equity securities from grantees:

The amount of cash or other assets transferred (or liabilities incurred) to repurchase an equity award shall be charged to equity, to the extent that the amount paid does not exceed the fair value of the equity instruments repurchased at the repurchase date. Any excess of the repurchase price over the fair value of the instruments repurchased shall be recognized as additional compensation cost. An entity that repurchases an award for which the promised goods have not been delivered or the service has not been rendered has, in effect, modified the employee’s requisite service period or nonemployee’s vesting period to the period for which goods have already been delivered or service already has been rendered, and thus the amount of compensation cost measured at the grant date but not yet recognized shall be recognized at the repurchase date.

This guide focuses on the valuation of equity securities that underlie equity-based compensation awards. FASB ASC 718 refers to “equity awards” to more broadly address all arrangements indexed to such equity securities. In the context of this chapter, the task force believes that the guidance in FASB ASC 718-20-35-7 would equally apply to purchases of equity awards as well as purchases of actual equity securities received upon settlement of such awards. Therefore, an entity should analyze all company repurchases from grantees (including those made by related parties or economic interest holders) to determine if there is a compensatory element.⁷

- 9.07** The task force believes that repurchases of equity securities could be within the scope of FASB ASC 718 even if the legal grantor is not the repurchasing party. FASB ASC 718-10-15-4 states the following:

⁷ FASB ASC 718 provides guidance related to the classification of awards with share repurchase features (i.e., puttable or callable shares). A repurchase of an equity security based on an existing share repurchase feature is beyond the scope of this chapter. This chapter addresses repurchases that are not an exercise of a repurchase feature or an offer to repurchase that would require an entity to apply modification accounting under FASB ASC 718. This chapter also does not address the potential impact of repurchases on the company’s classification of its ongoing stock-based compensation awards as either equity or liabilities (see, for example, FASB ASC 718-10-25-15).

Share-based payments awarded to a grantee by a related party^[8] or other holder of an economic interest in the entity^[9] as compensation for goods or services provided to the reporting entity are share-based payment transactions to be accounted for under this Topic unless the transfer is clearly for a purpose other than compensation for goods or services to the reporting entity. The substance of such a transaction is that the economic interest holder makes a capital contribution to the reporting entity, and that entity makes a share-based payment to the grantee in exchange for services rendered or goods received. An example of a situation in which such a transfer is not compensation is a transfer to settle an obligation of the economic interest holder to the grantee that is unrelated to goods or services to be used or consumed in a grantor's own operations.

- 9.08** While the guidance in FASB ASC 718-10-15-4 explicitly addresses grants of new awards, the task force believes that the concept of a related party or other economic interest holder providing a benefit to a grantee on behalf of the entity extends to other transactions with grantees, including secondary transactions. Therefore, the task force believes that under FASB ASC 718, an entity should also assess whether there is a compensatory element in a secondary transaction with a grantee. Based on the FASB ASC Master Glossary definition of an *economic interest in an entity*, an economic interest holder includes any stockholder. Therefore, existing investors in the entity are economic interest holders. The task force believes that a company should also apply judgment to determine whether a new investor that purchases equity securities directly from grantees would also be considered an economic interest holder for purposes of applying FASB ASC 718. Some examples include, but are not limited to, such an investor concurrently participating in a new primary financing of the company or making a tender offer to a broad group of current and former grantees with the assistance of the company (e.g., such assistance from the company could include setting the parameters by which grantees are eligible to sell their equity securities, or directly negotiating the purchase price with, or providing nonpublic financial information to the investor). In these situations, as well as in other secondary transactions,¹⁰ while a new investor may

⁸ *Related parties* are defined in the FASB ASC Master Glossary and this definition is included in this guide's glossary.

⁹ FASB ASC Master Glossary defines an *economic interest in an entity* as “[a]ny type or form of pecuniary interest or arrangement that an entity could issue or be a party to, including equity securities; financial instruments with characteristics of equity, liabilities, or both; long-term debt and other debt-financing arrangements; leases; and contractual arrangements such as management contracts, service contracts, or intellectual property licenses.”

¹⁰ There are a variety of situations in which a new investor may purchase equity securities from grantees. All facts and circumstances need to be considered to determine whether the new investor should be treated as an economic interest holder for purposes of evaluating the secondary transaction. In some cases, an unrelated third party with no existing ownership in the entity may independently identify and negotiate the purchase of a limited number of equity securities from an existing shareholder with no involvement of the entity and not as part of a broader series of transactions with the entity. Similarly, a new unrelated third party may purchase a limited number of shares from an existing shareholder on an established secondary exchange, as described in paragraph 8.67, again with no other involvement with or by the entity. In those cases, such new investors might not be considered to be economic interest holders for purposes of applying the above guidance. However, as described above, there are many instances involving the purchase of equity securities by new investors where the task force believes it may be

not have held an economic interest in the company prior to the secondary transaction with the grantee, the investor may not be substantively different than an existing economic interest holder in the company because it becomes an economic interest holder concurrent with the transaction. Therefore, the task force believes that secondary transactions by a new investor may be subject to FASB ASC 718. As described in paragraph 8.64, such secondary transactions may occur when an entity is not willing to issue as much stock in a primary financing transaction as the new investor would like to purchase. The new investor may approach grantees and ask if they would be willing to sell some of their existing securities or ask the company to facilitate an offer.

- 9.09** The following example illustrates the application of the framework in chapter 8 and the framework in this chapter to a situation where a new investor could be considered an economic interest holder that results in a compensatory transaction under FASB ASC 718. Consider Entity A, a private company, which is negotiating with new investors (New Investors) to purchase a new series of preferred stock in Entity A. The New Investors did not previously hold an economic interest in Entity A. To participate in the preferred stock offering, the New Investors must purchase a minimum number of vested Entity A common shares held by grantees through a tender offer organized by Entity A. Entity A specifies that only grantees that have provided service to Entity A for more than two years are eligible to participate in the tender offer. Through the tender offer, the New Investors acquire 1 million vested Entity A common shares held by grantees at \$15.00 per share (the same price paid per share for the new series of preferred stock). A *contemporaneous valuation* of the Entity A common shares at the time of the tender offer resulted in a fair value of \$5.00 per share, which is broadly in line with other secondary transactions that took place in reasonable proximity to the new financing round. Because the sale price of each share of common stock exceeds the fair value of the common stock, Entity A considers whether the transaction is compensatory. Entity A was significantly involved in facilitating the tender offer and concludes that the New Investors should be considered economic interest holders of Entity A and the difference between the tender offer price and the fair value of the common stock represents compensation to the grantees for prior services rendered.
- 9.10** While FASB ASC 718-20-35-7 states that “[a]ny excess of the repurchase price over the fair value of the instruments repurchased shall be recognized as additional compensation cost” (emphasis added) and, as noted in paragraph 9.08, the task force believes that the repurchase guidance in FASB ASC 718 should be applied to purchases made by related parties or other economic interest holders, FASB ASC 718-10-15-4 states that transactions are not compensatory if the excess amount is “clearly for a purpose other than compensation for goods or services to the reporting entity”. Therefore, the task force believes that if a related party or other economic interest holder is settling an existing obligation to the grantee that is unrelated to goods or services received by the company, the amount in excess of fair value is not compensation. Superseded guidance in AIN-

appropriate to view such an investor as an economic interest holder for purposes of evaluating the secondary transaction.

AP25¹¹ states that a transaction may not be compensation if the “the relationship between the stockholder and the corporation’s employee is one which would normally result in generosity (i.e., an immediate family relationship).”¹² While these are examples of situations in which a company could potentially overcome the presumption of a compensatory element, the task force believes that it will otherwise be difficult to demonstrate that the excess paid over fair value is “clearly for a purpose other than compensation for goods or services.”

- 9.11** The task force believes that a repurchase of equity securities by either a related party or other economic interest holder or the company from a grantee that is no longer providing goods or services to the company or no longer a customer or an employee of the company may still be in the scope of FASB ASC 718. Paragraphs 10, 11 and 14 of FASB ASC 718-10-35 provide guidance on when an equity instrument originally in the scope of FASB ASC 718 is no longer within the scope of FASB ASC 718. FASB ASC 718-10-35-10 indicates that an instrument issued to a grantee that is subject to the initial recognition and measurement guidance in FASB ASC 718 should continue to be subject to the recognition and measurement provisions of FASB ASC 718 throughout the life of the instrument, unless its terms are modified after any of the following: a grantee vests in the award and is no longer providing goods or services, a grantee vests in the award and is no longer a customer, or a grantee is no longer an employee.

Paragraphs 11 and 14 of FASB ASC 718-10-35 go on to say the following:

- 35-11** Other modifications of that instrument that take place after a grantee vests in the award and is no longer providing goods or services, is no longer a customer, or is no longer an employee should be subject to the modification guidance in paragraph 718-10-35-14. Following modification, recognition and measurement of the instrument shall be determined through reference to other applicable GAAP.
- 35-14** An entity may modify (including cancel and replace) or settle a fully vested, freestanding financial instrument after it becomes subject to Topic 480 [*Distinguishing Liabilities from Equity*] or other applicable GAAP. Such a modification or settlement shall be accounted for under the provisions of this Topic unless it applies equally to all financial instruments of the same class regardless of the holder of the financial instrument. Following the modification, the instrument continues to be accounted for under that Topic or other applicable GAAP. A modification or settlement of a class of financial instrument that is designed exclusively for and held only by grantees (or their

¹¹ AICPA Accounting Interpretation AIN-APB 25, *Accounting for Stock Issued to Employees: Accounting Interpretations of APB Opinion No. 25*. The Equity Securities Task Force (task force) believes that even though the guidance has been superseded, the concepts in AIN-APB 25 may still be relevant for purposes of applying FASB ASC 718-10-15-4.

¹² In such a case, while the excess over fair value may not be considered compensation cost under FASB ASC 718, it may still be considered another element of the transaction that should be considered from a valuation perspective when evaluating the impact of the secondary transaction on the determination of the fair value of the equity security, as described in paragraph 8.47.

beneficiaries) may stem from the employment or vendor relationship depending on the terms of the modification or settlement. Thus, such a modification or settlement may be subject to the requirements of this Topic. See paragraph 718-10-35-10 for a discussion of changes to awards made solely to reflect an equity restructuring.

There may be instances in which an equity security is purchased by a related party or other economic interest holder or by the company from a grantee that is no longer providing goods or services to the company or is no longer a customer or an employee of the company. Regardless of whether the equity security is currently subject to FASB ASC 718 or subject to other GAAP, if the price to repurchase the equity security is in excess of the fair value of the equity security, the task force believes that a company will need to apply the same considerations as described in FASB ASC 718-10-35-14 unless such a settlement “applies equally to all financial instruments of the same class regardless of the holder of the financial instrument” and the class is not designed exclusively for and held only by the grantees.

- 9.12** As noted in paragraph 9.02, chapter 8 describes considerations in determining whether and how the price paid for the purchase of equity securities from grantees should be considered in determining the fair value of the equity securities underlying stock-based compensation awards. Oftentimes, it is challenging to determine whether the price paid to purchase equity securities from a grantee includes a compensatory element. To determine if there is a compensatory element, an entity should first determine whether the equity security was purchased for an amount that reflects its fair value. While chapter 8 describes this assessment sequentially (first determining if there is a compensatory element of the transaction and then determining whether and how that transaction should be considered when determining the fair value of the underlying equity security subsequent to the transaction), significant judgment is required in assessing the interplay between whether there is a compensatory element related to a secondary transaction and how, or if, that transaction should be incorporated in determining the fair value of the underlying equity security, as further discussed in paragraphs 8.47 and 8.48.¹³ A company should consider all the facts and circumstances surrounding the purchase to determine whether there is a compensatory element that is within the scope of FASB ASC 718, including the considerations described elsewhere in this chapter. The task force believes key considerations in making that judgment is to determine whether the company (including management, such as if they are the ones negotiating with an investor while also holding equity securities that will be purchased) benefited from the purchase (which could include direct benefits such as completing a concurrent primary financing round with the investor, or indirect benefits such as improved employee morale

¹³ In some situations, it may be clear that the intent of the purchase was to compensate the grantees (for example, a situation in which the purchase price paid by the company was significantly in excess of the price of a recent preferred stock financing transaction and the intent of the company was to pay the grantees a bonus). In those situations, it may be inappropriate to incorporate the secondary transaction in determining the fair value of the equity securities underlying stock-based compensation awards, as the purchase does not represent an observable transaction reflecting solely the fair value of the equity security.

and retention by enabling grantees to obtain liquidity)¹⁴ or actively facilitated the transaction.¹⁵ Other considerations that may indicate a compensatory element exists include the following:

- The company or investor intended to compensate the grantees.
- The company determined the purchase price or directly negotiated the purchase price with the investor without any negotiation between the investor and grantees.¹⁶
- The company determined the parameters of the investor purchase (e.g., which grantees could participate in the secondary transaction and the extent to which those grantees could sell their equity instruments).
- There is little to no difference between the purchase price and any concurrent or recent preferred stock primary financing, and the facts and circumstances indicate that the fair value of the concurrent or recent preferred stock financing is greater than the fair value of the equity securities purchased from grantees.¹⁷
- The repurchase was substantially limited by the company or investor to grantees. There were little to no sellers in the secondary transaction that do not represent current or former grantees.
- The company has a history of repurchasing equity securities from grantees that include a compensatory element.
- The investor or investors participating in the transaction have more than a *de minimis* interest.

¹⁴ The task force believes that this view is consistent with the rationale described in paragraph B110 in the “Basis for Conclusions” section of FASB Statement No. 123(R), *Share-Based Payment*. Since basis for conclusions paragraphs are not included in the codification, paragraph B110 of FASB Statement No. 123(R) was not codified in the FASB ASC; however, the task force believes this paragraph provides helpful guidance and, therefore, decided to reference it in this guide.

¹⁵ When a company is involved in a secondary transaction, and such involvement is limited to the company’s waiver of its right of first refusal to purchase such shares, then the task force believes such involvement by itself would not necessarily result in the secondary transaction being viewed as within the scope of FASB ASC 718.

¹⁶ If management, on behalf of the company, is setting the purchase price or directly negotiating the purchase price with the investor making the purchase, the company is more likely to benefit (directly or indirectly) from the purchase than in situations when the purchase price is established independently between the buyer and seller.

¹⁷ For example, an investor participating in a preferred stock primary financing concurrently repurchases common stock from grantees at the preferred stock price and there is an indication at the time of the repurchase that market participants place value on the liquidation preferences present in the preferred stock and no such liquidation preferences are present in the common stock purchased from grantees.

Financial Statement Disclosure Requirements

- 9.13** FASB ASC 718 establishes disclosure requirements for share-based payment arrangements. Specifically, FASB ASC 718-10-50-1 states the following regarding the disclosure objective:

An entity with one or more share-based payment arrangements shall disclose information that enables users of the financial statements to understand all of the following:

- a. The nature and terms of such arrangements that existed during the period and the potential effects of those arrangements on shareholders
 - b. The effect of compensation cost arising from share-based payment arrangements on the income statement
 - c. The method of estimating the fair value of the equity instruments granted (or offered to grant), during the period
 - d. The cash flow effects resulting from share-based payment arrangements.
- 9.14** Paragraphs 2–2A of FASB ASC 718-10-50 and paragraphs 134–137 of FASB ASC 718-10-55 indicate the minimum information needed to achieve the disclosure objectives outlined in FASB ASC 718-10-50-1 and illustrate how these disclosure requirements might be satisfied. In some circumstances, an entity may need to disclose information beyond what is listed in those FASB ASC sections to achieve the disclosure objectives.
- 9.15** FASB ASC 275, *Risks and Uncertainties*, requires disclosures about risks and uncertainties that could significantly affect the amounts reported in the financial statements. Because the valuation of privately issued equity securities involves the use of estimates and judgments, the entity should consider whether to provide any of the disclosures specified in FASB ASC 275 in addition to those required under FASB ASC 718.

Considerations for Management’s Discussion and Analysis Disclosures in an IPO

- 9.16** Typically, an entity with material share-based compensation cost that files for an initial public offering (IPO) of its equity securities will disclose that share-based compensation is a critical accounting estimate in accordance with Item 303(b)(3) of Regulation S-K related to Management’s Discussion and Analysis (MD&A), because determining the fair value of an award is complex and subjective given the lack of a public market for the pre-IPO shares. The task force believes potential registrants may consider disclosing the methods that management used to determine the fair value of the equity securities underlying the stock-based compensation awards and the nature of the material assumptions involved. For example, entities using the income approach could disclose that this method involves estimating future cash flows and discounting those cash flows at an appropriate rate.

- 9.17** The task force believes that entities that file for an IPO should also consider how other MD&A requirements may relate to stock-based compensation, including known trends or uncertainties such as the expected impact on operating results and taxes.
- 9.18** The task force believes that in situations where the estimated fair value of the equity securities underlying stock-based compensation awards over the period leading up to the IPO date is substantially below the IPO price (often referred to as *cheap stock*), potential registrants should be prepared to reconcile the change in the estimated fair value of the underlying equity securities between the grant date of the award and the expected offering price of the underlying equity securities upon pricing of the IPO. That reconciliation should consider the effect of significant events that have occurred after the grant date, anticipated changes related to the company's business, changes in the market related to IPOs of similar companies, and other relevant events or factors.

Chapter 10

Frequently Asked Questions

Introduction

10.01 In the course of preparing the guide, the Equity Securities Task Force (task force) has received numerous questions from companies, auditors, and *valuation specialists*. This chapter attempts to address the questions that arose most frequently. The questions are loosely grouped by topic, as follows:

- Material Covered in the Guide
 - Q&A 10.1: Material Covered in the Guide
- Valuation Support and Judgmental Assumptions
 - Q&A 10.2: Third-Party Opinions
 - Q&A 10.3: Inherent Uncertainty of the Estimate
 - Q&A 10.4: Conservatism in Fair Value Estimates
 - Q&A 10.5: Bid/Ask Spread Considerations
- Value Changes Over Time
 - Q&A 10.6: Value Changes over Time
 - Q&A 10.7: Value Changes due to Achievement of Milestones
 - Q&A 10.8: Impact of Executing a Licensing Agreement on Value
 - Q&A 10.9: Adjusting the Value of the Securities From Period to Period
 - Q&A 10.10: Updating Values for Changes in the Company and the Market when using the Hybrid Method
 - Q&A 10.11: Considering Past Secondary Transactions
 - Q&A 10.12: Delay Between the Secondary Transaction Notification and Close Date
- Shelf Life of a Valuation
 - Q&A 10.13: Shelf Life of a Valuation
 - Q&A 10.14: Shelf Life of Value-Related Information
- Reconciliation With Other Valuations
 - Q&A 10.15: Reliance on IRC Section 409A Reports
 - Q&A 10.16: Differences in Fair Value Estimates
- Considering Risks and Outcomes Associated With Contractual Rights
 - Q&A 10.17: Valuation of Contingent Consideration
- Valuing Businesses for the Purpose of Valuing Equity Securities
 - Q&A 10.18: Earnings Normalization
 - Q&A 10.19: Incorporating Stock-Based Compensation Into the Enterprise

Valuation

- Q&A 10.20: Treatment of Synergies
- Q&A 10.21: Considering Multiple Lines of Business Within a Single Enterprise
- Q&A 10.22: Using Data From Guideline Public Companies When there are Significant Differences between the Guideline Public Companies and the Subject Enterprise
- Q&A 10.23: Alternatives to Using Guideline Public Companies When there are Significant Differences between the Guideline Public Companies and the Subject Enterprise
- Q&A 10.24: Addressing the Lag in Available Financial Information for the Guideline Public Companies as of the Measurement Date
- Q&A 10.25: Incorporating Discounts or Premiums Into the Enterprise Value
- Q&A 10.26: Private Equity and Venture Capital Cost of Capital
- Q&A 10.27: Company-Specific Assumptions
- Calibration
 - Q&A 10.28: Valuing Equity Securities in Early-Stage Companies with No Recent Financing Rounds
 - Q&A 10.29: Insider Financing Rounds
 - Q&A 10.30: Tranched Financing
 - Q&A 10.31: Considering Transaction Costs in Calibration
 - Q&A 10.32: Calibrating to a Transaction With Assumed Debt
 - Q&A 10.33: Offers to Purchase
 - Q&A 10.34: Exercise of a Significant Number of Common Options or Warrants
 - Q&A 10.35: Debt that is Repaid after the Valuation Date
- Value of Debt for the Purpose of Valuing Equity
 - Q&A 10.36: Valuing Debt for the Purpose of Valuing Equity Using the Traded Price
 - Q&A 10.37: Valuing Debt for the Purpose of Valuing Equity Using the Book Value or Face Value
 - Q&A 10.38: Including Debt in the Option Pricing Method
 - Q&A 10.39: Impact of Estimating Equity Value Using a Value of Debt Lower Than Face Value When Both the Enterprise Value and the Value of Debt Have Declined
 - Q&A 10.40: Impact of Estimating Equity Value Using the Value of Debt for the Purpose of Valuing Equity When the Enterprise Value Has Remained Unchanged
 - Q&A 10.41: Methodologies for Valuing Equity in a Business With Nonperforming Distressed Debt
- Valuing Equity Securities in Complex Capital Structures
 - Q&A 10.42: Use of the Current Value Method
 - Q&A 10.43: Fair Value of Securities Issued by Partnerships and Limited Liability Companies

- Q&A 10.44: Treatment of Options in the OPM
- Q&A 10.45: Fair Value of Securities in a Roll-Up Structure
- Q&A 10.46: Discount Rate Used in the Scenario-Based Method
- Q&A 10.47: Use of the Option Pricing Method
- Q&A 10.48: Value of Liquidation Preferences
- Q&A 10.49: Is Postmoney Value the Same as the Fair Value?
- Q&A 10.50: Using the Traditional OPM as the Practitioner's Standard Approach for All Valuations
- Q&A 10.51: Measuring Volatility for Early-Stage Companies
- Q&A 10.52: Valuing Profits Interests
- Control & Marketability
 - Q&A 10.53: Basis of Valuation
 - Q&A 10.54: Valuation Approaches and Controlling and Noncontrolling Securities
 - Q&A 10.55: Applying Discounts for Lack of Marketability to the Total Equity Value
 - Q&A 10.56: Illiquidity and Marketability of Securities
 - Q&A 10.57: Comparison Between the Fair Value of the Enterprise and the Value of the Enterprise Used for Valuing Equity Securities
 - Q&A 10.58: Discounts for Lack of Marketability and Control When the Enterprise Has a Simple Capital Structure
- Information to Be Considered in the Valuation
 - Q&A 10.59: Considering Information that Would not be Available to Market Participants
 - Q&A 10.60: Postvaluation Event (Customer Financial Condition) — Assessment as Known or Knowable
 - Q&A 10.61: Postvaluation Event (Product Approval) — Assessment as Known or Knowable
- Remeasurements Relating to Changes in Enterprise Financials
 - Q&A 10.62: Remeasurements Relating to Accounting Changes
 - Q&A 10.63: Expected Financing—Effect on Valuation

Material Covered in the Guide

Q&A 10.1: Material Covered in the Guide

Q: How might the material in this guide be useful to me?

A: Although the guide is nonauthoritative, the guide was designed to provide companies, auditors, and valuation specialists with tools to address some of the key challenges that arise in valuing securities underlying stock-based compensation awards for privately-held companies. FASB ASC 718, *Compensation—Stock Compensation*, and FASB ASC 820,

*Fair Value Measurement*¹, require informed judgment. Applying judgment when valuing illiquid securities with *unobservable inputs* requires careful consideration of the facts and circumstances. Therefore, this guide is extensive, providing technical material and examples that show how judgment may be applied in many situations. Users may focus on the guidance and examples that are most relevant to their fact pattern. As always, an entity's specific situation should be considered when applying the guidance in this guide.

FASB ASC 820 is a principles-based standard that defines *fair value* and provides a framework for estimating fair value but does not provide detailed guidance addressing the specific issues that arise in estimating fair value for privately-held companies. In addition, because the focus of the analysis is to estimate the fair value of a specific security in an enterprise, rather than the fair value of the enterprise as a whole, these valuations involve nuances that may be less familiar to some practitioners. Thus, the guide includes some fairly dense technical accounting and valuation material as well as more practical examples. The task force recommends using the technical material for reference when developing the valuation of the securities underlying the stock-based compensation awards.

The task force believes that in order to make an appropriate assessment of the fair value of the securities underlying the stock-based compensation awards, one needs to start with a thorough understanding of the key facts and assumptions that drive the valuation. The specific facts and circumstances would generally dictate the types of valuation approaches and adjustments that would be required to properly estimate the fair value of the securities.

The guide is intended to be user-friendly, with examples that demonstrate the concepts discussed in the chapters and illustrate the way these concepts apply to real situations faced by management, valuation specialists, and auditors.

Valuation Support and Judgmental Assumptions

Q&A 10.2: Third-Party Opinions

Q: Am I required to have a third-party valuation specialist provide an opinion on my valuations?

A: No, in US GAAP, there is no specific requirement that fair value measurements be performed by a third-party valuation specialist. The task force recommends that valuations be performed by qualified professionals, who may be third parties or may be employed directly by the company. Certain companies may have policies that require them to obtain third-party opinions or may be subject to regulatory requirements. In addition, companies may wish to engage a third-party valuation specialist for reasons

¹ The task force believes that it is appropriate for valuation specialists to apply the fair value principles in FASB ASC 820 when estimating fair value in connection with share-based payment transactions, except for specific applications where following the FASB ASC 820 fair value principles would be inconsistent with the guidance in FASB ASC 718. For further discussion, see paragraphs 1.04–.08, “Interaction of FASB ASC 718 and FASB ASC 820.”

related to IRC 409(A) compliance for tax purposes. Therefore, it may be advisable to consult counsel and your auditors when making this determination in your specific situation. Finally, it is important to remember that even if a third-party valuation specialist is engaged, the company is ultimately responsible for its valuation assumptions, assertions and conclusions (see paragraph 1.15 for further discussion).

Q&A 10.3: Inherent Uncertainty of the Estimate

Q: If the potential range of the fair value conclusion for my privately held company equity securities underlying the stock-based compensation awards is very wide, can I still issue GAAP-compliant financial statements?

A: Yes. It is important to remember that many privately held company equity securities underlying the stock-based compensation awards are illiquid, so there are generally no observable transactions on which to rely. It may still be years until an ultimate liquidity event, and no one knows how the future will play out. The goal is to develop a reasonable valuation rather than to pinpoint a perfect answer.

Fair value reflects the company's best estimate of the point in the range at which the securities would transact in the principal (or most advantageous) market on the measurement date, and making this determination requires judgment. When the inherent estimation uncertainty is high, the key to supporting management's estimates is to combat biases by having a reasonable, consistent process for developing assumptions from period to period, considering the facts and circumstances and available relevant market data as of the measurement date. *Calibration* may be used to reduce estimation uncertainty but only when relevant transactions are available.

Disclosures regarding these fair value estimates should be provided consistent with the requirements of FASB ASC 718 and FASB ASC 275, *Risks and Uncertainties*. As stated in FASB ASC 275-10-05-6, "If users understand better the inherent limitations on precision in financial statements, they will be better able to make decisions."

Q&A 10.4: Conservatism in Fair Value Estimates

Q: Is it appropriate to err on the side of being "conservative" or "aggressive" when estimating fair value?

A: No, for financial reporting purposes, it is not appropriate to select a value that is either conservative or aggressive. The company should choose its best estimate of the point in the range that is most representative of fair value under current market conditions, that is, the exit price at which the securities would transact in an *orderly transaction* between market participants in the principal (or most advantageous) market on the measurement date.

Q&A 10.5: Bid/Ask Spread Considerations

Q: If the bid-ask spreads are used in fair value estimate, would it be appropriate to use the bid (low), ask (high), midpoint, or some other point?

A: The company should choose its best estimate of the point in the range that is most representative of fair value under current market conditions, that is, the exit price at which the securities would transact in an orderly transaction between market participants in the principal (or most advantageous) market on the measurement date. Even though fair value is defined as an exit price, there is no requirement to use the bid price. Per FASB ASC 820-10-35-36C:

If an asset or a liability measured at fair value has a bid price and an ask price (for example, an input from a dealer market), the price within the bid-ask spread that is most representative of fair value in the circumstances shall be used to measure fair value regardless of where the input is categorized within the fair value hierarchy (that is, Level 1, 2, or 3). The use of bid prices for asset positions and ask prices for liability positions is permitted but is not required.

This guidance applies irrespective of where the measurements are categorized in the fair value hierarchy and can be a useful concept for considering the negotiation dynamics that would influence the transaction price even for securities for which a broker has not provided a quoted bid or ask. For example, if there are many investors who would like to invest in a given enterprise, it may be appropriate to value the securities closer to the ask price, whereas if the enterprise is finding it challenging to raise additional capital, it may be more appropriate to value the securities closer to the bid price.

Although measuring fair value within the bid-ask range considering the expected negotiation dynamics requires judgment, the guidance does not preclude using the midpoint or another specific pricing convention as a practical expedient. Per FASB ASC 820-10-35-36D:

This Topic does not preclude the use of mid-market pricing or other pricing conventions that are used by market participants as a practical expedient for fair value measurements within a bid-ask spread.

It is a best practice for the company to choose a consistent approach for estimating fair value within the bid-ask spread, adjusting only if facts and circumstances support a change in approach.

Value Changes Over Time

Q&A 10.6: Value Changes Over Time

Q: Should I accrete value over time or hold value constant?

A: Neither. The value of a security may not change significantly from period to period, or it may change rapidly. However, value may not accrete smoothly. Instead, it would be appropriate to consider the changes in the enterprise and the markets from period to period to estimate the price that market participants would pay for the securities as of the measurement date. See the sidebar following paragraph 3.94 for a discussion of how value may accrete between milestones.

Q&A 10.7: Value Changes due to Achievement of Milestones

Q: My company is a pre-revenue, early-stage enterprise. How should I consider milestones achieved since the latest round of equity financing in estimating the company's value as of the measurement date?

A: Many early-stage enterprises have a well-developed business plan that sets forth the business strategy, the product, the market, the competition, and a projected financing and operating schedule. Few investors are willing to commit funds in advance sufficient to carry the firm from concept to public offering. Rather, they want to see that the enterprise's management has a sound plan, is executing its plan, and is meeting its commitments. As a result, several financing rounds usually are necessary, with each round contingent on the enterprise having met its prior commitments. Those commitments often are set forth in the original business plan as a series of milestones. Not all milestones will be viewed by investors as significant value driving milestones. Specifically, some milestones might be listed in contractual agreements simply to assure that the company is progressing as planned in order for investors to provide the company with each additional tranche of equity financing. Other milestones, such as passing a significant developmental or technical milestone, might be viewed as significant value driving milestones.

In general, as each value driving milestone is met, the value of the enterprise and the securities within the enterprise are enhanced. As the number of remaining milestones and the related time frame for achieving the business plan are reduced, uncertainty about achieving the original business plan declines. As uncertainty is reduced, investors perceive that there is less risk, which, in turn, reduces their *required rate of return*, which increases the value of the enterprise and its securities.

If an early-stage company has reached a significant technical milestone since the latest round of preferred equity financing, which was considered to be at fair value, one can adjust the company's value upwards for reaching the milestone. For a single product company that is assumed to have de minimis value if it fails to reach the milestone, this adjustment can be performed by taking enterprise value or total equity value implied by the latest round of equity financing and grossing it up based on the probability of the milestone.

For example, consider a biotech company that has several clinical milestones to achieve prior to commercialization. If the company's value at the round of equity financing, in pre-clinical state, was \$11 million, and the probability of successfully passing pre-clinical stage was 65%, upon successful completion of this developmental milestone, the company's value will increase to \$17 million ($\$11 \text{ million} / 65\%$), as follows:

Value of a standalone pharmaceutical product	Proof of concept/ toxicology	Pre-clinical	Phase 1	Phase 2	Phase 3	New Drug Application	Commerciali- zation
Phase transition probability	25.0%	65.0%	35.0%	60.0%	85.0%	95.0%	100.0%
Probability of commercialization	2.8%	11.0%	17.0%	48.5%	80.8%	95.0%	100.0%
Implied step up post milestone achievement		300.0%	53.8%	185.7%	66.7%	17.6%	5.3%
Implied commercialization value at stage	2,755,594	11,022,375	16,957,500	48,450,000	80,750,000	95,000,000	100,000,000
This example does not consider:							
1. Time value of money							
2. Interim cash flows (income and expenses)							
3. Any recoverable value from IP (i.e. assume zero value in failure)							
4. Liquidation value of any balance sheet items (i.e. this is the value of a product, not a company)							

**For a one-product company, if the company can generate \$100 million through commercialization of a product and it is still in the very early stages of the proof of concept, the value of the company may be assumed to increase in stages, based on the conditional probability at each stage.*

In situations where the milestone has not yet been achieved, but the company has made progress towards achieving the milestone, the value will still increase. For a single product company, the increase in value can be calculated as:

Starting Value / Original Probability * New Probability

For example, for a single product company that had 65% probability of successfully progressing from pre-clinical stage to Phase 1 clinical stage of product development at the previous measurement date, and this probability has increased to 85% as of the new measurement date, the value as of the new measurement date can be calculated as follows:

$\$11 \text{ million (at the pre-clinical stage)} / 65\% * 85\% = \$14.4 \text{ million}$

Please note that in addition to considering the change in the value due to milestone achievement, the valuation specialist would also consider any change in the value of the company due to market factors.

Q&A 10.8: Impact of Executing a Licensing Agreement on Value

Q: A biotech company (licensor) has recently entered into a licensing agreement to license its intellectual property to a large pharmaceutical manufacturer (licensee) that will commercialize the product. What impact does the licensing agreement have on the value of the company?

A: In most cases, the licensing agreement provides an up-front payment, milestone payments and a royalty stream on future sales. In addition, in some cases, the larger pharmaceutical manufacturer may make an investment in the company's securities at the same time. Because the company has effectively sold the potential revenues that they would otherwise have realized, the full value of the payments would not be directly added to the company's equity value – instead, the value received would be expected to balance the value given up. However, the licensing agreement may reflect an increased

probability of success, which would be modeled as discussed in Q&A 10.7. Or if the licensing agreement provided a payment for a product that the company would otherwise not have pursued, the entire agreement might be accretive.

Another factor to consider is whether the impact of the licensing agreement was already considered in the pricing of the most recent financing round. In certain industries, such as biotech, investors may negotiate financings with the expectation that their portfolio companies will enter into licensing agreements as part of their operations. If the latest round's price considered certain assumptions about a licensing agreement with a high level of certainty and the actual licensing agreement executed later had similar or identical terms, the execution of the agreement in and of itself might have minimal or no effect on the overall value. However, circumstances can change between the financing round and the licensing agreement, which may result in the company entering a licensing agreement with different terms than initially anticipated. For example, if investors invest in a company for researching a compound for a specific indication and negotiate the financing based on assumptions at that time, but then the company discovers an additional indication for the compound, the new circumstances may indicate a higher valuation. If the company enters into a licensing agreement with terms that were more or less favorable than initially anticipated, it would be appropriate to consider this new information in the valuation.

It is also important to note that any impact of changes in the company's circumstances would be incorporated into the valuation when the information regarding the new circumstances became known or knowable, not only when the licensing agreement has been finalized. That is, the licensing agreement is a reflection of the change in value, not the driver of the change in value.

Q&A 10.9: Adjusting the Value of the Securities From Period to Period

Q: More than a year has passed since the most recent transaction in the company's securities (for example, the entry transaction or the most recent preferred stock financing, in a company that had no secondary transactions). What factors should we consider when we update our estimate of the fair value of the company's equity at subsequent dates?

A: A private company's value is impacted by both market factors (which include industry and economic factors) and company-specific factors. Therefore, in order to estimate the fair value of the equity securities as of each new measurement date, it is appropriate to evaluate both factors and adjust for changes in both factors between the previous measurement date and the new measurement date. Additionally, the fair value of privately held company equity securities is typically also impacted by structural factors (subordination, strike prices, etc.) relative to other securities in a company's capital structure.

When the transaction price represents fair value at initial recognition, FASB 820-10-35-24C requires calibration of all significant inputs into a valuation technique such that the output from the valuation technique equals the transaction price. Therefore, when the latest preferred stock transaction represents fair value, it is expected that the valuation

specialist would calibrate the valuation analysis to the transaction price. For later stage companies, where the income approach and/or market approach are both applicable, the inputs (such as multiples and a discount rate) can be calibrated to the transaction and then updated for the changes in the market and changes in company-specific factors between the transaction date and the measurement date.

The valuation of an enterprise and its securities generally will be affected by the current state of the industry in which the enterprise competes. Further, local, national, and global economic conditions also affect *enterprise values*, albeit not always in the same direction; some enterprises may be helped by poor economic conditions (for example, discount retailers versus high-end retailers). Typically, enterprise values are enhanced for an enterprise in a growing, profitable industry and diminished in the alternative. Similarly, overall favorable economic conditions typically enhance value because, in general, they indicate higher rates of growth in sales and profits, whereas in a recessionary period, values tend to be diminished.

When considering the trend in values for a privately-held company, it is important to consider the way those trends would impact the specific company, given the company's characteristics. For instance, economic or industry conditions may not be as directly relevant for an early-stage biotechnology company that is years away from commercialization, whose value is a function of binary outcome of either success or failure and whose future success value is expected to be less impacted by current changes in the market. In this case, the value of this particular company might be more sensitive to the investment environment for raising capital or engaging in initial public offerings than to changes in the pharmaceutical market. In some circumstances, the company value may change less than the overall market; in other circumstances, it may change more.

As a company approaches commercialization, market factors typically would have more influence on the value of the company, and changes in value due to market and economic factors may be similar to the company's public, later-stage peers. Therefore, it would be appropriate to consider the stage of development of the company and the time to commercialization when assessing the impact of market factors on a company's value.

Q&A 10.10: Updating Values for Changes in the Company and the Market when using the Hybrid Method

Q: When calibrating to the latest preferred stock financing, we used a hybrid method with a CSE scenario and an OPM scenario. How do I assess the change in values in each of the hybrid method scenarios given the changes in the company and the changes in the market between the transaction date and measurement date?

A: In a hybrid method, the overall equity value that would be considered in calibration for the income or market approach would be the weighted average equity value. It is important to ensure that the change in the weighted average equity value reflects the changes in the market and the changes in the company from period to period. See paragraphs 6.64–.68 for an example.

Q&A 10.11: Considering Past Secondary Transactions

Q: How should a secondary transaction that took place some time prior to the measurement date be considered in the valuation?

A: The entity would first need to evaluate a past secondary transaction in accordance with the guidance in chapter 8, “Inferring Value From Transactions in a Private Company’s Securities,” to assess its relevance in calibrating the valuation model (see paragraphs 8.25–.29, “Calibration to Entry or Observable Prices,” and paragraphs 8.49 and 8.54).

Specifically, paragraphs 8.25 and 8.28 provide the following guidance:

- 8.25** ...Calibration of a model to an observable transaction price is required when the transaction price represents or provides evidence of fair value....In some cases, calibration may be simple – for example, using the price from a transaction that occurred in the principal (or most advantageous) market shortly before the measurement date and confirming that there have been no changes in the prices that market participants would pay between the transaction date and the measurement date). In other cases, calibration may be complex...
- 8.28** Calibration is always required when the observed transaction is still relevant at the measurement date. The transaction price may not be relevant if market participants in the principal (or most advantageous) market would know that there has been such a significant change in the circumstances since the transaction date that a change in the valuation methodology would be warranted. For example, if the company has announced a merger transaction and there have been no observable transactions since the announcement, it typically would not be appropriate to use the previous transactions to indicate the fair value at a post-announcement measurement date.

If there is a change in facts between the transaction date and the measurement date, the next step is to adjust for changes in the company and changes in the markets between the transaction date and the measurement date as discussed in paragraph 8.32.

Q&A 10.12: Delay Between the Secondary Transaction Notification and Close Date

Q: My company has a right of first refusal for any secondary transactions, so there is a 60-day waiting period between the date that the seller notifies the company of the terms of any negotiated potential secondary sale and the date that the secondary sale closes. At the measurement date, we have information about both recent closed secondary sales as well as subsequent potential sales that we have been notified about but have not yet closed, and the prices are different. When considering the value implied by the secondary transactions, should we consider the prices as of the notification date or the close date?

A: It would typically be appropriate to consider the secondary transaction price as reflecting the observable transaction price as of the date the buyer and seller negotiated

the terms of the sale, rather than reflecting the observable transaction price as of the close date. Therefore, it is important to consider the prices associated with the more recent notification of pending secondary sales. In addition, the valuation should consider the specific facts and circumstances, such as the volume of the pending vs. closed transactions, the timing of the pending and closed transactions, whether or not the parties have the right to back out of the transaction, and any changes in the company or in the markets that would drive a change in value between the observable transaction price and the measurement date. As discussed in paragraph 8.32, the value of the equity securities underlying a stock compensation award as of the measurement date would be estimated by first making adjustments for any changes in value over time that market participants in the principal (or most advantageous) market would consider due to the company's progress or market factors between the transaction date and the measurement date.

Shelf Life of a Valuation

Q&A 10.13: Shelf Life of a Valuation

Q: An enterprise has a contemporaneous valuation performed as of July 31, the date on which stock options are granted to employees. A month or two later, the enterprise fills its controller position vacancy and grants the controller a number of stock options. Under what circumstances can the earlier valuation be used for purposes of estimating compensation expense for the options granted to the controller?

A: In financial reporting, the measurement date is the grant date for the stock-based compensation awards, and there is no “shelf life” for the valuation *per se*.² Instead, whether a specific valuation may still be regarded as reasonably reflecting fair value on the measurement date depends on the specific facts and circumstances and is inversely related to the number and significance of the events that have taken place since the valuation date used in the valuation analysis. That is, it may be appropriate to use the earlier valuation if no significant events that would affect the enterprise's value, such as milestones or progress toward a near-term IPO, have occurred during the intervening period. In short, when considering the appropriateness of using an earlier valuation, it is important to exercise professional judgment.

Q&A 10.14: Shelf Life of Value-Related Information

Q: A private enterprise issued common stock to an *unrelated party* for \$20 per share on January 1, 20X1. On June 10, 20X1, the enterprise granted common stock to employees. The enterprise operates in an industry in which both pricing and demand for products

² Note that for tax purposes, under Internal Revenue Code (IRC) Section 409(A), there is a presumption of reasonableness for valuations performed by an independent appraiser no more than 12 months before the measurement date (IRC Section 409A-1[b][5][iv][B][2][i]). However, a valuation will be deemed unreasonable if it “fails to reflect information available after the date of the calculation that may materially affect the value of the corporation (for example, the resolution of material litigation or the issuance of a patent) or the value was calculated with respect to a date that is more than 12 months earlier than the date for which the valuation is being used” (IRC Section 409A-1[b][5][iv][B][1]). Thus, for both financial reporting and tax purposes, it is important to consider whether there have been significant events between the valuation date and grant date; tax regulations, however, provide more explicit guidance regarding the shelf life of the valuation in the absence of such events.

have a history of volatility. For 20X1, the enterprise forecasts a 30 percent growth rate in sales. Would the equity transaction on January 1, 20X1, be an appropriate indicator of the fair value of the enterprise's stock on June 10, 20X1?

A: Generally, no. It is generally not considered reasonable to expect the value of a share of stock to have the same value that it had several months earlier. This would particularly be the case for an enterprise that experiences more volatility than a mature or zero-growth enterprise. However, the January 1, 20X1 value combined with other objective and substantive evidence may assist the enterprise in estimating a fair value on June 10, 20X1.

Reconciliation With Other Valuations

Q&A 10.15: Reliance on IRC Section 409A Reports

Q: Can I use the same value per share in valuing my privately held company equity securities underlying the stock-based compensation awards for financial reporting purposes as the value that the company got from its valuation report for purposes of documenting its common stock value for setting the strike price for options for IRC Section 409A?

A: This guide focuses on the valuation of the securities underlying the stock-based compensation awards only for financial reporting purposes under US GAAP. Although this guidance may have some use in valuations of privately-held-company equity securities issued as compensation for tax purposes, it was not written intending to address those valuations. The determination of appropriate values under the Treasury Regulations is beyond the scope of this guide.

In addition, some private companies may choose to elect the practical expedient that allows the company to determine the current price input of equity-classified share-based awards using the “reasonable application of a reasonable valuation method,” which is generally designed to align with IRS regulations under section 409A (practical expedient in ASU 2021-07, *Compensation—Stock Compensation (Topic 718): Determining the Current Price of an Underlying Share for Equity-Classified Share-Based Awards*). This practical expedient is outside the scope of this guide. Please see paragraphs 1.16–18 for further discussion.

If the company sets strike prices or other contractual features for the stock-based compensation awards based on a fair market value estimate for tax purposes that differs from the fair value for financial reporting purposes, the company may need to consider the impact on the valuation of the awards from a financial reporting perspective. For example, if the company issues options that are not “at the money,” the options may not be considered “plain vanilla” awards that would qualify for the practical expedient for estimating expected term as described in FASB ASC 718-10-30-20A and 20B.

Q&A 10.16: Differences in Fair Value Estimates

Q: Why may valuations prepared for other purposes come up with different values?

A: Although value estimates developed for other purposes may have similar underpinnings as the fair value estimates developed for FASB ASC 718 following the principles of FASB ASC 820, the unit of account and other considerations specific to the measurement may be different and, therefore, the valuations performed for these different purposes may not necessarily result in the same value. For example, when valuing the securities within an enterprise for purposes of FASB ASC 718, the company may consider the rights associated with the specific subject securities, whereas when valuing the enterprise for other financial reporting purposes, such as testing goodwill for impairment, the company would not need to consider the rights associated with specific securities. This guide focuses on the valuation of privately held company equity securities underlying the stock-based compensation awards pursuant to FASB ASC 718.

Considering Risks and Outcomes Associated With Contractual Rights

Q&A 10.17: Valuation of Contingent Consideration

Q: If my company is owed or owes a future payout contingent on the enterprise's performance over the next few years to a third party, should I consider this *contingent consideration* in my valuation of equity securities underlying the stock-based compensation awards?

A: Yes. In this fact pattern, the contingent consideration is a contractual right to a future payment or series of payments and, therefore, is an asset or liability of the company that may increase or reduce the value of the equity securities underlying the stock-based compensation awards. Depending on the nature of the contingent consideration, including the requirements to earn the payments and the form of settlement, it may be more appropriate to either consider the contingent consideration in estimating the value of equity or in the allocation of equity. For example, when contingent consideration provides for payment of a fixed number of shares, it may be more appropriate to include the shares in the allocation model; when the contingent consideration provides for payment of a fixed amount of cash, it may be more appropriate to estimate the fair value of the contingent consideration separately and subtract it prior to the allocation. Refer to *The Appraisal Foundation Valuations in Financial Reporting Valuation Advisory 4: Valuation of Contingent Consideration* for a detailed discussion of the valuation of contingent consideration.

Valuing Businesses for the Purpose of Valuing Equity Securities

Q&A 10.18: Earnings Normalization

Q: Is it appropriate to value a business based on normalized earnings?

A: In order to estimate the fair value of equity securities underlying the stock-based compensation awards, one should assess the fair value of business enterprise from a perspective of investors who in aggregate have control of the business, as discussed in paragraphs 5.02–.07 and 7.01–.15. Market participants frequently consider the value of a business and its historical and projected earnings as inputs for valuing debt or equity

instruments within a business, considering the *loan-to-value (LTV) ratio* and *EBITDA coverage ratios* or other factors that indicate the enterprise's credit risk for valuing debt instruments, and considering the value of equity after subtracting the value of debt for valuing equity securities. When making an investment in an enterprise, market participants frequently use historical performance adjusted for one-off items to reflect the potential sustainable performance for the business and, thus, may consider normalized or pro forma earnings in assessing the price to pay for the investment. The normalized or pro forma earnings may be regarded as a proxy for the earnings that the business would have been able to generate without one-off items, rather than relying solely on a historical measure that does not correct for these factors or a forecasted measure that may incorporate more speculative growth assumptions. Therefore, it is reasonable to consider normalized earnings as one input to valuing a business. It is also important to consider the nature of the one-off items and how market participants would evaluate the potential risks and rewards for the investment when selecting the multiple. That is, the selected multiple would need to be commensurate with the normalized earnings metric (apples to apples), calibrating the multiple used with these normalized earnings to any recent transactions and then considering how market participants would assess the normalized earnings and the changes in the multiple for future measurement dates, given the company's progress and changes in market conditions.

Q&A 10.19: Incorporating Stock-Based Compensation Into the Enterprise Valuation

Q: When valuing the business for the purpose of valuing privately-held-company securities underlying the stock-based compensation awards, what is the best approach for incorporating outstanding stock-based compensation?

A: Stock-based compensation is an important part of the total compensation package required to attract and retain employees, especially for privately held businesses. A market participant acquiring the business or a position in the business would also assume that the business would need to pay the employees; therefore, the value that a market participant would pay for the enterprise would take into account the expected value of this compensation. This approach results in an enterprise value and corresponding equity value that is measured treating stock-based compensation as an expense: that is, based on market participant expectations of the impact of the stock-based compensation on the cash flows after subtracting the stock-based compensation expense, which is also referred as the *expense treatment* and further discussed in paragraphs 5.11–.23, “Incorporating Stock-Based Compensation Awards into the Valuation.” The equity value measured net of the impact of the stock-based compensation may then be allocated to the remaining equity securities and the already earned portion of the value (that is, the *intrinsic value*) of the stock-based compensation.

As an example of one approach (expense treatment where equity value is estimated treating stock-based compensation awards as an expense) for addressing this issue, suppose that a market participant bought a business for \$200 million, structuring the enterprise as a limited liability company (LLC) in which the market participant held 100% of the Class A units. The enterprise then issued Class B units as profits interests to

the executives, allowing the executives to participate in 15% of the appreciation of the value of the business above \$200 million.

- On Day 1, the value of the business that market participants typically would consider for valuing the Class A units would be \$200 million, and the valuation models would be calibrated to this value. When buying the business, any market participants would expect to provide some form of stock-based compensation, resulting in a reduced cash flow, all else equal. Therefore, the value of this stock-based compensation plan would be embedded in the calibrated multiple in the *market approach* and in the calibrated required rate of return in the *income approach*. The value of the Class A units would then be measured by subtracting only the intrinsic value of the Class B units, which on the grant date is zero, because these units participate only on the upside.

In this approach, the fair value of the Class B units for financial reporting purposes for the enterprise would be treated as incremental. Suppose that in this example, given the expected time to a *liquidity event* and the estimated volatility, the estimated fair value of these units is \$10 million. Treating this value as incremental would result in an equity value of \$210 million, including these units. The higher equity value would be used in valuation models for estimating the fair value of the stock-based compensation. In this approach, the Class B represents the executives' "investment" in the business — the executives are investing their time in exchange for the expected value of \$10 million, knowing that they have the opportunity to earn a much higher payoff if the business is successful but will receive nothing if it is not. The higher equity value typically would not be used in the approach market participants would consider for valuing the Class A units or estimating the purchase price related to the acquisition for financial reporting purposes under FASB ASC 805, *Business Combinations*, because the value a third party would pay for the business would be only \$200 million, since market participants would assume that the business would need to provide compensation to the employees in the form of stock-based compensation or through increased base salary in absence of an employee stock-based compensation plan.

- A year later, suppose that the business had performed well and increased both historical and projected revenues and profits. The estimated fair value of the business is now \$260 million, consistent with the price that market participants would pay for 100% of the outstanding equity, considering market participant expectations of the net impact of the new stock-based compensation that they would assume that the business would need to issue post-transaction. The value of the Class A units would then be \$251 million, measured by subtracting only the intrinsic value of the Class B units, which on the measurement date would be \$9 million (15% of \$60 million upside above \$200 million), because these units participate only on the upside.

The additional fair value of the Class B units above the intrinsic value for financial reporting purposes would be treated as incremental. In this example, given the expected time to a liquidity event and the estimated volatility, the

estimated fair value of these units is \$17 million, resulting in an equity value of \$268 million, including these units. The additional \$8 million (\$17 million less the \$9 million intrinsic value of the Class B units) represents the executives' investment of time in the business.

Q&A 10.20: Treatment of Synergies

Q: How are *synergies* treated in developing fair value estimates?

A: When valuing a business, it may be appropriate to consider synergies that would impact the price that a third party buying the business would pay.

FASB ASC 820 specifies that fair value is a market-based measurement, not an entity-specific value. Therefore, if synergies are explicitly modeled when valuing the business, the typical approach is to incorporate synergies that would be available to more than one market participant³ but exclude buyer-specific synergies that would be available to only one buyer. The rationale for excluding buyer-specific synergies is that it would be difficult for the seller to capture the value of these synergies in the negotiation process. Even if the buyer will benefit from certain synergies, the seller's next best alternative would not include this benefit unless similar synergies would be available to other market participants. Therefore, in theory, the negotiation dynamics between market participants with a typical degree of motivation (for example, when both parties have reasonable alternatives) would result in a price that excludes the value of any buyer-specific synergies.

For FASB ASC 718, the objective of the measurement is to value an interest in the business, rather than the business itself. Market participants transacting in a security in the business would estimate the cash flows considering the company's plans under current ownership. Therefore, the valuation may consider cash flows that include company-specific assumptions, such as plans for completing a *roll-up* or international expansion or for other strategies that the company might execute. These cash flows would be discounted at the investors' required rate of return considering the risk in the cash flows, calibrating to any recent transactions. In addition, it may be appropriate to incorporate synergies that the enterprise would expect to realize upon the ultimate liquidity event. Please see paragraphs 5.02–.07 and chapter 7 for further discussion.

Negotiations for the sale of illiquid assets may involve not only unique buyer-specific synergies but also unique seller-specific synergies. For example, if the buyer has a need for exactly the technology that the enterprise has, and no other competing company can deliver that technology, the seller may be able to capture more of the synergy value in the negotiations than valuation theory would otherwise indicate. In such a situation, the combined business may have more value than the sum of the parts, and the enterprise value will include the incremental value from these synergies. When the enterprise is

³ See the Appraisal Foundation's Valuations in Financial Reporting (VFR) Valuation Advisory #3, *The Measurement and Application of Market Participant Acquisition Premiums*, for additional discussion and examples of approaches for quantifying synergies. Refer to the [Appraisal Foundation's website](#) for further information.

approaching a liquidity event and the enterprise has something unique to offer, it would be appropriate to consider market participant assumptions regarding the range of values that might be realized upon exit given the competitive sale dynamics, inclusive of the value that might result from these unique factors.

Q&A 10.21: Considering Multiple Lines of Business Within a Single Enterprise

Q: How do I handle an enterprise that has multiple divisions and multiple product lines? If I am using a market approach, do I need to look to guideline public companies that overlap in those sectors? If I am using the income approach, do I need to look at the *weighted average cost of capital (WACC)* differently by sector?

A: In such a situation, to the extent that the different divisions within the enterprise have different operational and growth characteristics and different risk profiles, it would be appropriate to perform separate valuations for the various divisions of the enterprise, aggregating them and adjusting for shared costs. Therefore, yes, it would be appropriate to look at the WACC differently by sector. See paragraph 3.14 for a discussion of factors to consider in selecting guideline public companies.

Q&A 10.22: Using Data From Guideline Public Companies When there are Significant Differences between the Guideline Public Companies and the Subject Enterprise

Q: I performed market comparable analyses to value my enterprise. Given that none of the guideline public companies are exactly akin to my company, can I just use the average?

A: No, you need to consider how a market participant would view the enterprise versus the guideline public companies, including factors such as growth potential, profitability, business model, and so on. See paragraphs 3.12–.47, “Considerations in Applying the Guideline Public Company Method,” for a discussion of factors to consider in selecting guideline public companies, determining reasonable multiples to use, and deciding whether and how to adjust the multiples for comparability or to use pro forma data for the enterprise, or both, as appropriate. Further, as discussed in paragraphs 3.111–.128, “Applying Calibration in Valuing the Securities in an Enterprise,” it is important to calibrate the market multiples to any observable transactions, calculating the historical, projected, and pro forma multiples, as applicable, and then estimating the value at subsequent measurement dates by adjusting the multiples to take into account changes in the company and changes in the markets.

Q&A 10.23: Alternatives to Using Guideline Public Companies When there are Significant Differences between the Guideline Public Companies and the Subject Enterprise

Q: The subject enterprise generates significant revenue, but it is the first of its kind and is not comparable to existing public companies. Do I have to use comps?

A: In this situation, public company information will be less relevant with regard to direct pricing information, such as revenue or EBITDA multiples. Calibration is the best approach for estimating the fair value of such companies. However, “comps” (or another

indication of general market conditions relevant to the subject enterprise) may still play an important indirect role in many areas: measuring market values to evaluate the change in the range of possible exit values relative to the original calibrated assumptions; evaluating the reasonableness of management estimates such as margins and growth rates; assessing the competitive environment for the enterprise, the nature of possible acquirers, the scale that would be needed to complete an IPO, and many other factors that may be useful in the development of inputs to other valuation methods.

Q&A 10.24: Addressing the Lag in Available Financial Information for the Guideline Public Companies as of the Measurement Date

Q: When I estimate market multiples for the guideline public companies as of December 31, the latest financial information for the guideline public companies will typically be September 30. Is it reasonable to use that data?

A: Yes, it is reasonable to use the September 30 financial metrics for the guideline public companies, if that is the latest information available as of the measurement date. The multiples derived using this data would be based on the “last 12 months” as of September 30 and market prices as of December 31. However, due to a lag in historical financial performance data and because market participants would consider the latest information available for the enterprise, the financial metrics for the enterprise and the selected multiples may then need to be adjusted consistent with market participant assumptions. See paragraphs 3.37–.38 for a discussion of relevant adjustments to guideline public company multiples and enterprise data. To assess the relative performance of the enterprise and the guideline public companies, it may be necessary to read industry news or analyst reports to understand what was happening for the guideline public companies in Q4.

Under normal circumstances, the Q4 financial metrics for the guideline public companies typically would not be reported until February or March and, therefore, this information would not be available as of the measurement date. However, when performing the valuation on an analysis date after the guideline public companies have reported their Q4 financials, some valuation specialists will make use of this information, effectively assuming that the actual information, which was not available on the measurement date, is a good proxy for the information that was knowable as of the measurement date. This approach is reasonable to the extent that there were no major surprises in the Q4 results. If there was a surprise for one of the guideline public companies in Q4, but the Q4 results were published after the measurement date, then the stock price and corresponding multiple for that company would reflect only the information that was known or knowable as of the measurement date and, therefore, it would be necessary to estimate the multiple for that company considering expectations as of the measurement date.

Q&A 10.25: Incorporating Discounts or Premiums Into the Enterprise Value

Q: Should I be applying discounts or premiums when estimating the fair value of the enterprise for the purpose of valuing equity securities underlying the stock-based compensation awards?

A: Generally, no. The value of the enterprise used for valuing the equity securities in the enterprise should reflect the cash flows under current ownership, discounted at the required rate of return for the investors who in aggregate have control of the business. In some cases, this value may reflect a higher market multiple than the median or average of the selected guideline public companies. However, it is more appropriate to think of this difference as being attributable to the characteristics of the enterprise (for example, high growth, improving profitability, higher leverage, potential for synergies at exit), rather than thinking of the multiple as being at a “premium” to some arbitrary measurement. In fact, in many cases, an enterprise’s multiples might be higher than the peers relative to historical performance and lower than the peers relative to projected performance, reflecting the high risk in the projections. Calibration is the best approach for estimating the assumptions to be used in valuing equity securities. See chapter 7, “Control and Marketability,” for further discussion.

Q&A 10.26: Private Equity and Venture Capital Cost of Capital

Q: How do I determine my *cost of capital* for a PE or VC-backed enterprise?

A: When using the income approach to value a business, you will need a calibrated valuation model that considers the cash flows for the business and the calibrated IRR that matches the transaction price. Therefore, at subsequent measurement dates, it would be appropriate to use the same calibrated valuation model, updating the cash flows to reflect the enterprise’s revised expectations and the cost of capital to reflect changes in the markets and changes in the company-specific risk. The most important factor in assessing the change in the cost of capital for the enterprise is to understand the key drivers of risk in the cash flows and the changes in that risk between periods.

Q&A 10.27: Company-Specific Assumptions

Q: Is it appropriate to use company-specific assumptions when valuing a security in an enterprise?

A: FASB ASC 820-10-20 defines *fair value* for financial reporting as “[t]he price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.” Therefore, it is required to consider market participant assumptions. For equity securities, the characteristics of the enterprise, including its plans under current ownership, may generally set the context for the assumptions that investors who in aggregate have control of the business would make in valuing the enterprise. In particular, market participants investing in the securities in an enterprise would consider the enterprise’s plans under current ownership, and the required rate of return for the investors who in aggregate have control of the business. For example, in a PE-backed company, the leverage might be much higher than the

leverage observed for similar public companies. Thus, when market participants investing in the security would have no ability to change the cash flows or capital structure or other plans of the business, which is a fact pattern that commonly applies when valuing privately-held-company equity securities underlying the stock-based compensation awards, market participant assumptions for the security would be aligned with company-specific assumptions for the enterprise through the expected liquidity event. That is, the company-specific assumptions for the enterprise, including assumptions regarding the cash flows and the expected capital structure through the liquidity event, would generally be consistent with the assumptions that a market participant investing in the securities of the enterprise would make in valuing those securities. In many cases, however, the value of the business considering company-specific assumptions would be consistent with the value from the perspective of a third-party buying the business; please see paragraph 5.06 for further discussion.

Calibration

Q&A 10.28: Valuing Equity Securities in Early-Stage Companies with No Recent Financing Rounds

Q: My enterprise isn't generating revenue yet. Can I continue using the fair value of the equity security estimated as of the latest preferred equity transaction date until the new preferred round price is available?

A: The objective of the fair value measurement is to reflect the fair value of the equity security as of the measurement date; thus, using the fair value of the equity security estimated as of the latest preferred equity transaction date without consideration of the changes in the enterprise and the market between the transaction date and the measurement date would generally not be appropriate. Calibration may be used to assess the inputs to the valuation model that are consistent with the price paid for the latest round of preferred stock, provided that the transaction price reflects fair value as of the initial transaction date, and then at later measurement dates, these inputs would be updated to reflect company-specific progress and current market conditions, as discussed in paragraphs 3.111–.128, “Applying Calibration in Valuing the Securities in an Enterprise.” For pre-revenue companies, one of the key factors to consider in the valuation is what progress the company has made toward achieving its milestones. See appendix A, paragraphs A.06.01–.05, “Early-Stage Companies With No Recent Financing Rounds,” for further discussion.

Q&A 10.29: Insider Financing Rounds

Q: How should the valuation consider insider financing rounds when estimating the value of an enterprise?

A: Insider financing rounds cannot be presumed to be at fair value, but, nonetheless, the price may reflect fair value if it was negotiated between the company and the investors. When assessing the implications of an insider financing round on the valuation, it is a best practice for management to consider the transaction dynamics to understand the

negotiations and make the determination regarding whether the transaction is at fair value, and if not, how the fair value would compare with the transaction price. See paragraph 3.54 and paragraphs 8.25–.41 for further discussion.

Q&A 10.30: Tranched Financing

Q: The preferred investors agreed to provide \$10 million in capital in two equal tranches, both at \$1 per share. The investor would contribute the additional \$5 million as long as the company met certain milestones. The company met the milestones as expected, and the investor contributed the additional capital. Should I increase the estimated enterprise value or hold it flat?

A: Tranched financing structures are often negotiated for development stage companies such as biotech companies, when the amount of capital needed or the time to reach the next major value inflection point is greater than the investors feel comfortable funding up front. In such a situation, the enterprise and the investors want confidence that the enterprise will have access to the full amount of capital needed to complete the current development tasks, but the investors also want to impose financial discipline and ensure that the company spends the money wisely. In some cases, the milestones specified in the agreement may be significant drivers of value, where the investors would not continue to fund the company unless the milestones are met. In other cases, the milestones specified in these arrangements are agreed progress markers that show that the company is on track but may not be significant drivers of value. Also, because failing to provide the agreed tranche capital is tantamount to forcing the enterprise out of business, the investors typically will fund the next tranche as long as the company is making acceptable progress, irrespective of whether the company met the specified milestones. Therefore, agreeing to fund the next tranche does not necessarily mean that the company has grown in value or that the value has stayed flat. To assess the fair value of the enterprise at the date that the tranche is funded, it would be appropriate to consider the pricing implied by the original tranched agreement and then update the enterprise value considering the changes in the markets and the enterprise relative to the investors' original expectations. Please see paragraph 8.60 for further discussion.

Q&A 10.31: Considering Transaction Costs in Calibration

Q: In connection with a recent acquisition, in addition to the purchase price of \$100 million (\$20 million in primary capital and \$80 million to sellers in a secondary sale), the acquirer paid a finder's fee of \$500,000, incurred legal, accounting, and consultant fees of \$350,000 for due diligence and contract negotiation; and the seller paid a brokerage fee of \$1.2 million. In addition, out of the \$20 million in capital being provided to the enterprise, \$2.5 million is required to be paid to management to fund stay bonuses paid for services between signing and closing. Are any of these costs relevant in determining the initial fair value for purposes of calibration?

A: For purposes of calibration, the initial fair value is \$100 million. The fair value would exclude the finder's fee, due diligence fees, and the brokerage fee. The \$2.5 million in

stay bonuses was included in the \$100 million purchase price and, therefore, does not represent additional purchase consideration.

Q&A 10.32: Calibrating to a Transaction With Assumed Debt

Q: The acquirer assumed some favorable debt as part of the consideration paid for the LBO acquisition of a real estate development enterprise. When determining the price paid in the acquisition, should the valuation specialist factor in the debt at its face value or its fair value? How should the valuation specialist calibrate the valuation models to the transaction?

A: In this transaction, the acquirer was allowed to assume the favorable debt (debt with a below-market coupon), allowing the acquirer to finance the transaction at a lower cost than they would otherwise have had to pay; therefore, the valuation should consider the fair value of the favorable debt. The consideration paid corresponds to the value of the equity securities of the enterprise that the acquirer purchased. For future measurement dates, the valuation specialist may want to estimate the enterprise value and subtract the value of debt for the purpose of valuing equity. In that valuation approach, the valuation specialist would calibrate the valuation model to the enterprise value implied by the transaction, which includes the total equity value implied by the consideration paid plus the value of the favorable debt.

To estimate the total enterprise value, the valuation specialist would add the total equity value and the value of the debt. Because the debt had favorable terms, it would be optimal for market participants to retain the debt in place. Therefore, it would be appropriate to take into account the value of the favorable terms by calculating the enterprise value using the fair value of the debt, rather than its face value, par value, or payoff amount. The valuation model used to estimate the enterprise value at subsequent measurement dates would be calibrated to the total enterprise value implied by the transaction, and the assumptions used would be updated each period. The valuation model used to estimate the value of debt for the purpose of valuing equity would be used consistently and updated each period.

Q&A 10.33: Offers to Purchase

Q: Does an offer or a nonbinding letter of intent constitute fair value?

A: Although the nonbinding letter of intent is an important indication to consider, it would probably not be a direct indication of fair value at the measurement date because some uncertainty still exists. The first step is to consider whether the offer is realistic and will serve as the starting point for negotiations and what degree of relevance it has as an indication of value. If the two parties are in the process of negotiations, the next step is to consider what adjustments to the price would be expected between the offer or letter of intent and the signing. The adjusted offer price would then be weighted alongside the value that would be expected to be realized if the transaction falls through. The adjustments and weighting applied would be a function of various factors, including the

conditions associated with the offer (for example, financing contingencies), stage of due diligence, regulatory approvals, and so on.

Q&A 10.34: Exercise of a Significant Number of Common Options or Warrants

Q: Does exercise of a significant number of common options or warrants provide an indication of value for the common stock equal to or greater than the strike price of the exercised instruments?

A: Possibly, but not necessarily. This transaction would be indicative that the holder either believed that the fair value of the common stock exceeded the exercise price or the holder had other motivations for exercising the option or warrant. Specific facts and circumstances would need to be evaluated to determine if the transaction is indicative that the value for the common stock is equal to or greater than the strike price.

Q&A 10.35: Debt that is Repaid after the Valuation Date

Q: Does the value of debt that is subsequently paid off at par after the valuation date equate to par on the valuation date?

A: On the valuation date, the value of the debt for the purpose of valuing equity can be modeled as the cash flows through the expected repayment date discounted at the market yield. If market participants know that the debt is likely to be repaid at par within a relatively short timeframe, the value is likely to be close to par but could be above or below par if the coupon that will be received over the time to repayment is above or below market, given the risks of the debt instrument.

Value of Debt for the Purpose of Valuing Equity

Q&A 10.36: Valuing Debt for the Purpose of Valuing Equity Using the Traded Price

Q: When estimating equity value for the purpose of valuing equity securities in an enterprise that has observable prices for its debt, are there circumstances when it is appropriate to use the traded price of debt as the value of debt for the purpose of valuing equity?

A: The traded price for the debt on the measurement date provides a good indication of the fair value of debt when the debt is the unit of account and provides a good indication of the required market yield for the debt, given its *expected cash flows* (through maturity or through the expected call or put date). When valuing equity securities in the enterprise, however, the value of debt for the purpose of valuing equity would be considered from the point of view of a market participant buying an equity security in the enterprise, rather than a market participant buying debt. The fair value of debt for the purpose of valuing debt reflects the market clearing price for a transaction in a position in the debt, rather than the market clearing price for a transaction in 100% of the debt. Because the market participants transacting in the equity cannot be assured of being able to realize the value differential between the fair value of debt and the required payoff for the debt, these market participants may consider a different value for the debt for the purpose of

valuing equity, consistent with their required rate of return given the risks and illiquidity of the equity position.

For example, if the debt must be repaid at a change of control, and a change of control is likely to occur prior to the maturity of the debt, the value of the debt for the purpose of valuing the equity securities would assume repayment at that change of control, rather than assuming the debt will be held to maturity. In addition, if the due diligence process for the equity transaction would reveal information that the debt markets do not know, then that information would be considered in estimating the value of debt for the purpose of valuing the equity securities. However, the fair value of debt for purposes of valuing debt may incorporate assumptions regarding the likelihood of early repayment upon a change of control or other information known to the market participants transacting in the debt to the extent that market participants transacting in the debt would consider this information. For example, if debt investors are pricing the publicly traded debt based on the expectations that the debt will be outstanding until maturity, while the equity investors assume that the debt will be repaid upon the change on control event, then the value of the debt for the purpose of valuing equity will diverge from the public price of debt. See paragraphs 4.22–.33, “Value of Debt for the Purpose of Valuing Equity,” for further discussion.

Q&A 10.37: Valuing Debt for the Purpose of Valuing Equity Using the Book Value or Face Value

Q: When estimating debt value for the purpose of valuing equity securities in the enterprise,⁴ are there circumstances in which the value of debt for the purpose of valuing equity will equal the book value or face value of debt?

A: Because the cash flows to equity are the residual after paying the contractual coupon for the debt, but the cost of capital is measured using the current market yield for the debt, the value of debt for the purpose of valuing equity would be measured considering the market yield for the debt, given current market conditions. Thus, the value of debt for the purpose of valuing equity will not necessarily equal its book value or face value. In some cases, however, the value of debt for the purpose of valuing equity will approximate its book value or the face value. Consider the following examples:

- If the debt was issued in an arm’s-length transaction on the measurement date, the value of debt for the purpose of valuing equity can typically be assumed to approximate its book value. Note that the book value of debt is measured net of its

⁴ Readers might find it helpful to refer to TQAs 6910.34–.35, which provide nonauthoritative guidance on investment companies. TQA 6910.34, “Application of the Notion of Value Maximization for Measuring Fair Value of Debt and Controlling Equity Positions,” discusses the application of the notion of value maximization for measuring fair value of debt and controlling equity positions and TQA 6910.35, “Assessing Control When Measuring Fair Value,” discusses assessing control when measuring fair value. These TQAs are available on the AICPA website at <https://www.aicpa.org/resources/download/aicpa-technical-questions-and-answers-at-your-fingertips>.

original issue discount (OID),⁵ so the book value of debt may not be the same as its face value.

- If the debt is prepayable and carries an above-market coupon, it would generally be optimal for the company to pay back the debt early, and the value of debt for the purpose of valuing equity can be assumed to approximate the payoff amount. Note that the payoff amount for the debt is measured based on the face value plus any *prepayment penalty* and accrued interest, so the payoff amount for the debt may not be the same as its book value or face value.
- If the debt carries a below-market coupon, it would generally be optimal for the company not to prepay, and the value of debt for purpose of valuing equity will generally be lower than either the face value or the payoff amount. Prepayable debt may be modeled using a stochastic interest rate model such as a Black-Derman Toy (BDT) model.
- If the holders of the debt may demand repayment at a change of control, and a change of control is imminent, the value of debt for the purpose of valuing equity can be assumed to approximate the payoff amount.

See paragraphs 4.22–.33, “Value of Debt for the Purpose of Valuing Equity,” for further discussion.

Q&A 10.38: Including Debt in the Option Pricing Method

Q: For a complex capital structure for an enterprise that includes debt, it is possible to estimate the value of the equity securities using the OPM, either by allocating equity with a levered volatility or by allocating enterprise value using asset volatility and including debt in the valuation model. In the latter approach, how should the fair value of debt be estimated?

A: Because debt typically includes covenants and has interim cash coupons, in most cases, it is best to estimate the value of the debt for the purpose of valuing equity using the *yield method*, as described in paragraphs 4.12–.21. If the enterprise has debt with a face value that is near the total enterprise value or greater than the total enterprise value, then it may not be possible to estimate the market yield for such debt directly, and instead it may be appropriate to use OPM to allocate the equity value between the debt and the equity. In this case, one approach would be to first subtract the present value of any cash coupons or principal amortization from the allocable residual enterprise value used in the OPM and then to include the final payoff for the debt as the first breakpoint in the OPM. However, care must be taken to ensure that this approach does not overstate the value of the debt relative to the various classes of equity, given the rights associated with the instruments. In cases where there are multiple potential future outcomes, a scenario-based hybrid method considering each significant future outcome may be appropriate. See

⁵ In certain transactions, debt may be issued together with warrants, whose value can be viewed as original issue discount (OID).

paragraphs 6.46–.54 for further discussion of the challenges in using OPM to allocate value between senior and junior claims on the enterprise value and for variants of the OPM that address these challenges, as well as paragraph 6.72 for an example.

Q&A 10.39: Impact of Estimating Equity Value Using a Value of Debt Lower Than Face Value When Both the Enterprise Value and the Value of Debt Have Declined

Q: On March 31, 20X1, a private equity firm acquired an enterprise for \$100 million, using 75% debt with a term requiring repayment at par upon a change of control. One year later, the enterprise value had fallen by 25%, and the fair value of debt based on quoted prices had fallen to 80% of par. How should I value the equity?

A: In this situation, the equity holders may benefit from allowing time for the enterprise value to recover before the liquidity event. Thus, even though selling the entire enterprise on the measurement date would result in no value to equity, the equity securities in the enterprise still have value. In a transaction, the private equity firm estimated that it would be able to repurchase the debt at a negotiated value somewhere between the traded price of 80% of par and a repayment at 90% of par. The value of equity would be calculated as follows:

$$\begin{aligned}\text{Equity} &= \text{Enterprise value less value of debt for the purpose of valuing equity}^6 \\ &= 75\% \text{ of original enterprise value less } 80\%–90\% \text{ of original debt value} \\ &\quad \text{(based on the expected negotiated value for paying off the debt)} \\ &= 75\% \text{ of original enterprise value less } 80\%–90\% \text{ of } 75\% \text{ of the original} \\ &\quad \text{enterprise value (because the face value of the debt was } 75\% \text{ of the} \\ &\quad \text{original enterprise value)} \\ &= 75\% \text{ of original enterprise value less } 60\%–67.5\% \text{ of original enterprise} \\ &\quad \text{value } (80\%–90\% \times 75\%) \\ &= 7.5\%–15\% \text{ of original enterprise value}\end{aligned}$$

Thus, the value of equity is now 7.5%–15% of the original enterprise value, compared with 25% at the initial transaction date: a 40% to 70% decline in value. The change in the value of the debt and equity is illustrated as follows:

⁶ As discussed in Q&A 10.37, the value of debt for the purpose of valuing equity will not necessarily equal its book value or face value, but in some cases, the book value or the face value may be a reasonable approximation. For example, the value of debt for the purpose of valuing equity can be assumed to approximate its book value or the face value when the holders of the debt may demand repayment at a change of control, and a change of control is imminent. In other cases, as in this example, the value of debt for the purpose of valuing equity may be significantly different from the book value or the face value.

	<i>Estimated Fair Value as of March 31, 20X1</i>	<i>Estimated Fair Value as of March 31, 20X2</i>	<i>Change in Estimated Fair Value</i>	<i>Percent Change in Estimated Fair Value</i>
Enterprise value	\$100	\$75	(\$25)	–25%
Less: value of debt for the purpose of valuing equity	75	60 to 67.5	(7.5 to 15)	–10% to –20%
Fair value of equity	\$25	\$7.5 to 15	(\$10 to 17.5)	–40% to –70%

Q&A 10.40: Impact of Estimating Equity Value Using the Value of Debt for the Purpose of Valuing Equity When the Enterprise Value Has Remained Unchanged

Q: On March 31, 20X1, a private equity firm acquired an enterprise using 75% debt. One year later, the goodwill impairment analysis shows that fair value of the enterprise has remained unchanged, but the traded price for the debt has fallen to 90% of par. What is the value of equity?

A: Two general types of situations may lead to a decline in the fair value of debt for an enterprise:

- If the enterprise performance is worse than expected, then the credit risk increases, leading to an increase in the cost of debt.
- If debt markets become more risk averse or interest rates rise, the cost of debt may rise even if the enterprise performance is unchanged.

Typically, in both of these situations, the enterprise value will also decline. If the enterprise is not performing well, the enterprise value will fall, and if the cost of capital rises, the enterprise value will fall. However, the example specified that the goodwill impairment analysis shows that the enterprise value (measured on a controlling basis for goodwill impairment purposes) stayed the same. Using this enterprise value and subtracting the fair value of debt would imply that the value of equity has increased over the intervening year, even though the debt value has fallen. Mathematically, this situation can occur only if the cost of equity has declined, or the company's performance has actually improved significantly, but the debt markets have not recognized this improvement.

Q&A 10.41: Methodologies for Valuing Equity in a Business With Nonperforming Distressed Debt

Q: The yield method provides an approach to estimate the fair value of performing debt for purposes of estimating the value of an equity security. How do practitioners estimate the value of equity for purposes of valuing equity securities in a business with nonperforming distressed debt?

A: Techniques for valuing equity in a distressed business are highly dependent on the facts and circumstances of the business, specifically plans to restructure or recapitalize the company. However, there are common approaches that practitioners use.

In those cases when a restructuring is expected, the fair value of equity is often estimated based on either the estimation of a consent fee that would be paid to equity holders to support the planned restructuring or an option pricing methodology, or both. The equity security value would be based on their share, if any, in this consent fee, or would be based on the allocated value in the OPM reflecting the potential upside expected for the securities that the equity holders would receive in the restructuring.

In those cases when no restructuring is expected based on an agreement between management and debt holders, the fair value of equity is typically estimated based on the difference between the estimated enterprise value and the fair value of debt. In cases where there are multiple potential future outcomes, a hybrid method considering each significant future outcome may be appropriate. Another approach might be to estimate the total equity value using the OPM where the total equity value is treated as a claim on the enterprise value as of the future sale date once the claims of the debt holders, including the default penalties and default interest, if any, are satisfied.

Valuing Equity Securities in Complex Capital Structures

Q&A 10.42: Use of the Current Value Method

Q: When is it appropriate to use the current value method?

A: The current value method indicates the value of the securities if the enterprise were to be sold at the measurement date. Thus, it is an appropriate methodology if a liquidity event is imminent or in certain other situations, as discussed in paragraphs 6.107–108. It also may be an appropriate methodology for certain types of valuations outside the scope of this guide when the valuation premise is the sale of the enterprise rather than the sale of the securities within the enterprise.

Q&A 10.43: Fair Value of Securities Issued by Partnerships and Limited Liability Companies

Q: Do the methodologies discussed in this guide apply to partnership and limited liability company interests?

A: Yes, these methodologies apply for estimating the fair value for financial reporting purposes of partnership and limited liability company interests issued as compensation.

Q&A 10.44: Treatment of Options in the OPM

Q: When including employee stock options within the OPM, how should the cash from option exercise be treated?

A: Option holders have a choice of whether or not to exercise their options depending on whether their options are “in the money” at the exercise date. In the OPM, the model assesses whether it is optimal for the preferred stock to convert and employee stock options to exercise based on the future value of equity. For simplicity, the OPM uses a single time to liquidity to represent the time when these decisions are made. The payoff to the employee stock options equals the value of the underlying security less the strike price. Thus, in the capital structure treatment for options (including the stock-based compensation as claims on equity, instead of including them as an expense), one approach for incorporating the dilution impact of options into the OPM would include a breakpoint corresponding to each strike price, capturing the equity value at which it would be optimal for the options to exercise. In this treatment, it would not be appropriate to add the expected proceeds from option exercise to the total equity value used in the OPM. In the expense treatment for options (including the stock-based compensation as an expense when estimating the total enterprise value), the options would be considered at intrinsic value, which may be measured by adding the expected proceeds from exercise of in-the-money options to the total equity value and then treating the in-the-money options as full shares. See paragraphs 5.11–.23 for further discussion.

Q&A 10.45: Fair Value of Securities in a Roll-Up Structure

Q: A newly formed enterprise with no current operations plans to grow by acquiring a series of subsidiaries. The private equity investors in this enterprise have agreed to fund these acquisitions as management identifies good targets through the issuance of additional debt-like preferred stock. Management was granted equity securities issued as compensation for 10 percent of the common stock; the rest of the common stock is held by the private equity investors. How should the common stock be valued?

A: In this structure, the common stock is effectively an option, capturing the upside appreciation in the enterprise value. Because the acquisitions will be funded by debt-like preferred stock that is not dilutive to the common stock, the expected value of the common stock would be measured relative to the entire expected capital investment, not just the investments that have already been completed. That is, if the company expects to acquire five businesses at \$50 million each, the base asset value is \$250 million, and the common stock represents an option on that \$250 million asset value with a strike price equal to the expected liquidation preference for the debt-like preferred stock of \$250 million plus dividends, if any. To capture the uncertainty in the number of acquisitions and the value of each acquisition, one approach would be to employ a hybrid method, estimating the probability that the enterprise will acquire only one business, two businesses, and so on, up to the entire target investment. To capture the impact of the timing of the acquisitions and the change in value between acquisition dates, one approach would be to employ a simulation model, treating each additional acquisition date as a step in the model. The value of the common stock would then be modeled as the payoff at the liquidity event, discounted back to the measurement date. In many cases, the initial funding for such a business may be small relative to the expected total capital, and this structure may have the counterintuitive result that the value of the stock-based compensation may be much larger than the invested capital as of the grant date.

Q&A 10.46: Discount Rate Used in the Scenario-Based Method

Q: Is it appropriate to apply a different discount rate in each scenario in a scenario-based method (SBM)?

A: As discussed in footnote 11 in paragraph 6.25, the selected discount rate would be the same across all scenarios to reflect the risk in the weighted average cash flows across all scenarios. Therefore, in most cases, it would not be appropriate to consider a different discount rate for different scenarios. However, the discount rate for different equity classes could be different. See appendix A, paragraphs A.10.01–.03, “Estimating Differential Discount Rates Depending on the Risk for Each Security Using CAPM,” for further discussion.

Q&A 10.47: Use of the Option Pricing Method

Q: The OPM is a widely used methodology for allocating value among the equity securities in an enterprise. As discussed in paragraphs 6.46–.54, there are several situations in which the traditional OPM may not be the best approach for allocating value to the equity securities, especially if the distribution of outcomes is bimodal or when considering differences in seniority between various classes of preferred. In these situations, would it still be reasonable to use the traditional OPM to estimate value for the equity securities underlying the stock-based compensation awards?

A: Selecting a valuation methodology that is appropriate for specific securities that are the subject of a valuation is a matter of judgment. The traditional OPM is a widely accepted methodology for allocating equity value among multiple classes of equity for an enterprise with a complex capital structure and also is often used to infer a total value for the enterprise by calibrating to a transaction price. Like all valuation methodologies, however, it makes certain simplifying assumptions:

- It may be challenging to make adjustments for the impacts of any additional financings.
- It can be problematic when potential enterprise values at time of exit are skewed (for example, when there are substantial risks of failure), or when some preferred investors have seniority or outsized liquidation preferences relative to the size of their investment (for example, when the company has raised a late round financing that guarantees a 2x return for the investors, but market participants still value the earlier rounds on an as-converted basis; or when the company negotiates seniority to entice new investors, but the new investors do not control the timing of exit).
- It assumes that future outcomes can be modeled using a lognormal distribution where the timing of exit is independent of the equity value. Since investors often delay exits until conditions are favorable, or until the company is unable to raise the capital needed to continue, this assumption may not be borne out in practice.

- It generally does not account for the right and ability of one or more of the classes of preferred equity to control the timing of exit, which can limit the downside risk for senior preferred, if the senior classes of equity have control, or can allow more time for value to recover from a downturn, if the junior classes of equity have control.

Consequently, depending on specific facts and circumstances, the traditional OPM may be less representative of market participant assumptions than variants of the OPM outlined in paragraph 6.54 or scenario-based or hybrid methods when valuing equity securities within an enterprise. Nevertheless, the OPM (traditional or variants) does have a number of advantages that make it more frequently relevant for the valuation of equity securities underlying the stock-based compensation awards:

- OPMs are particularly applicable for the valuation of assets that do not begin participating until another threshold is met (for example, the repayment of a liquidation preference for the preferred stock), when the value of the subject interest is in the “tail of distribution” (for example, common stock). The liquidation preference acts as a strike price, and the management securities begin participating only after this strike price is met.
- Once key inputs such as volatility, time to exit, and contractual rights and preferences are identified, the valuation and allocation process is relatively straightforward and well-understood.
- The OPM is a good model of the distribution of future outcomes for later-stage companies when the enterprise does not require significant additional rounds of financing, and the expectations of future returns through the date of exit are normally distributed.
- Variants of OPM are often the most appropriate methods for valuing management securities when specific future liquidity events are difficult to forecast. Scenario-based methods require more unobservable inputs, and it is harder to appropriately model low probability, option-like payoffs. Therefore, the use of a variant of the OPM may be more appropriate for valuing management securities in situations in which the enterprise has many choices and alternatives available, and the enterprise’s value depends on how well it follows an uncharted path through the various possible opportunities and challenges.

The task force recommends considering the facts and circumstances when selecting the most appropriate methodology for valuing the securities that are the subject of the valuation.

Q&A 10.48: Value of Liquidation Preferences

Q: As indicated in paragraph 6.115, it is possible to have fact patterns in which liquidation preferences are considered to have no value, and the fair values of the various equity securities are estimated based on the as-converted values. If the liquidation preferences don’t matter, why do investors spend so much time negotiating them?

A: PE and VC investments routinely include a 1x liquidation preference, regardless of whether they expect the downside protection to have any economic value. Failing to negotiate a liquidation preference when it is customary and available would not be in the investors' best interest. However, because VC-backed companies typically require several rounds of financing in order to build a substantial enterprise and achieve a high valuation, the liquidation preferences for early rounds of financing are unlikely to have a direct economic impact. Instead, liquidation preferences tend to ensure that the participants in the most recent round of financing will have the most senior and potentially the greatest share of the total value, giving them influence over the nature of future financings and the ultimate exit transaction. The ability to exercise that influence has the most importance when the company has not achieved its intended objectives, but is still expected to exit relatively soon; that is, when the company is approaching a low- to mid-value exit.

Q&A 10.49: Is Postmoney Value the Same as the Fair Value?

Q: I just completed a Series C financing for my enterprise at a price of \$5.00 per share, which implied a postmoney value of \$100 million using 20 million shares. Can I use the *postmoney value* of \$100 million to support my fair value estimate?

A: It depends. The postmoney value (or common-stock equivalent, or CSE, value) is representative of the fair value only in circumstances where it is reasonable to assume that all the issued and outstanding equity securities within the capital structure have the same fair value per share. For enterprises with capital structures that include preferred shares that carry a preference, the fair value of the common shares would be the same as of the fair value of the preferred shares only if it is reasonable to assume that market participants would not assign value to the liquidation preferences for the preferred shares. Such a circumstance may exist if the outcomes for the enterprise are expected to be binary, with either a *de minimis* value outcome for all shareholders or a very high value outcome where all preferred stock would convert to common and participate in the exit value *pari passu*. However, if market participants would consider a greater chance of an outcome where the preferred shares would receive more value than the common shares due to their liquidation preferences, the fair value of the common shares will be less than fair value of the preferred shares.

In this example, the postmoney value of \$100 million assumes that one share of common stock and one share of preferred stock will each have a value of \$5.00, equal to the issue price of the Series C financing. This approach would be reasonable if it is reasonable to assume that market participants would not assign any value to the liquidation preferences for the Series C preferred.

When using the postmoney value, it is important for the equity value used in the analysis to be consistent with the selected allocation methodology. It would not be appropriate to use a postmoney value in an OPM because the OPM inherently assumes that the various classes of equity have different values. In the CSE scenario, using either the issue price of the latest preferred round as a proxy for the common stock value or the postmoney value in a fully-diluted allocation would be appropriate.

Q&A 10.50: Using the Traditional OPM as the Practitioner's Standard Approach for All Valuations

Q: I typically use traditional OPM to value equity securities in all my valuations. Do I ever need to consider other approaches?

A: As discussed in chapter 6, “Valuation of Equity Securities in Complex Capital Structures,” there are several possible approaches for valuing equity securities in complex capital structures, and the traditional OPM is appropriate in certain circumstances. However, as discussed in paragraphs 6.46–.54, there are other circumstances in which some of the simplifying assumptions in the OPM fail to capture the negotiation dynamics between classes of equity and the ability of the investors who in aggregate have control of the business to determine the nature and timing of the ultimate exit event, since the traditional OPM assumes that the timing of the liquidity event is fixed and independent of the equity value. In such cases, it would be necessary to make adjustments to the traditional OPM to capture these factors or to consider other methods, such as variants of the OPM discussed in paragraph 6.54.

Q&A 10.51: Measuring Volatility for Early-Stage Companies

Q: An early-stage company makes an innovative product that is used for environmentally friendly construction. The company's only competitor is BigCo, a highly diversified business with a \$20 billion market cap. The enterprise needs to estimate the volatility of its equity for the purpose of valuing the equity securities underlying the stock-based compensation awards. Is it appropriate to use BigCo as the sole guideline public company for measuring volatility?

A: No. Because BigCo is a large, highly diversified business, its overall performance is driven by successes in some product lines balanced by failures in others. Higher diversification leads to lower volatility. In contrast, for an early-stage company with only one product, the company's overall performance is driven by the success or failure of that single product. Therefore, it is more appropriate to select guideline companies that may not be direct competitors but are more similar in size and level of diversification. Because there are no truly comparable guideline public companies for early-stage companies, it may also be appropriate to adjust the volatility to account for differences between the enterprise and the selected guideline companies, considering the expected distribution of future exit values. This adjustment may result in an estimated volatility that is higher than the observed volatilities for the guideline public companies, reflecting the higher risk of early-stage businesses. Please see appendix A, paragraphs A.11.01–.09, “Estimating Volatility for Privately-Held Companies,” for further discussion.

Q&A 10.52: Valuing Profits Interests

Q: In an LLC, what is the appropriate approach for valuing profits interests?

A: Profits interests are option like securities in an LLC structure that entitle the holders to participate in the upside appreciation in the value of the business. The profits interests have contractual hurdles, similar to strike prices of options in a C-corp. Some LLC

agreements define the hurdle on a per unit basis and some on a total equity value basis. In the simplest such structures, the profits interests may be valued as an option on the investor units. For example, if the profits interests begin participating after the investor units receive a return of their invested capital of \$10 per unit, then the profits interests would be at the money options with a \$10 underlying unit value and \$10 strike price. In more complex structures, it might be challenging to use a simple Black Scholes model to value the profits interests, especially if there are multiple grants of profits interests with various participation thresholds, some of which might be already in-the-money. In those cases, it would be important to understand the way that the total equity value would be allocated to the various classes of equity.

It would typically be appropriate to value profits interests using an OPM or hybrid method. Scenario-based methods that consider only specific discrete outcomes would typically not be appropriate for valuing profits interests, since they do not consider the full distribution of possible outcomes.

The following examples describe three types of profits interests that are often seen in practice:

1. Profits interests that participate in a percentage of the equity value above a threshold. For example, if the company is sold at \$150 million and has profits interests that have a \$100 million threshold and 6% participation, the profits interests will receive 6% of the incremental proceeds of \$50 million (\$3 million).
2. Profits interests that participate pro-rata in the full equity distributions, as long as the equity value is above a threshold or as long as there has been a “book up” event that equalizes the capital account for the profits interests and the investor units. Since profits interests are defined as interests that have no intrinsic value if the business were to be sold on the grant date, profits interests cannot be equivalent to the investor units (capital interests) on the grant date. However, if the company wants to provide the profits interests with a similar payoff as the investor units, they may structure the profits interests to catch up above a threshold or to have a capital account and provide a “book up” mechanism to equalize the capital accounts upon certain events. For example, if the company is sold for \$150 million and has profits interests that have a \$100 million threshold and 6% participation and a catch up provision after the \$100 million threshold is met, the profits interests will receive 6% of the total proceeds of \$150 million (\$9 million). This structure is equivalent to a C-corp where the investor units are convertible preferred and the profits interests are common stock.
3. Profits interest with market conditions. These profits interests have market conditions under FASB ASC 718 (often referred to in the contractual agreements as *performance conditions*), where they will not participate unless the investors receive a target internal rate of return (IRR) or multiple of invested capital (MOIC) at the liquidity event or investor exit. The return for the investors may be measured based only on cash received, or based on cash or liquid securities received, or based on some mix (for example, if the return is measured based on

cash received plus the value of liquid securities held through the date when the investors have sold at least 80% of their holdings). Two methods for valuing profits interests with market conditions would be a Monte Carlo simulation or an OPM where the market conditions and related catch up values when the market conditions are met are specifically modeled as breakpoints.

When legal provisions outlining the participation terms of the profits interests are complex, it may be helpful to consult with the company's legal counsel.

Control and Marketability

Q&A 10.53: Basis of Valuation

Q: When valuing securities underlying the stock-based compensation awards in a private enterprise, should the business be valued on a controlling basis or a minority basis?

A: Historical valuation practice has been to estimate enterprise value on a controlling or minority basis and on a marketable or nonmarketable basis using premiums and discounts to adjust from one basis to another. The task force recommends that a better practice for estimating enterprise value for the purpose of valuing the securities in the enterprise is to consider the cash flows under current ownership, as modified by the degree of influence the market participant would have given the interest acquired, and the required rate of return for the investors who in aggregate have control of the business. That is, the task force recommends estimating the enterprise value directly, rather than applying premiums or discounts relative to some arbitrary or formulaic starting point. Calibration should be used to estimate the enterprise value consistent with any recent transactions, as long as the transaction price represents fair value at initial recognition.

Q&A 10.54: Valuation Approaches and Controlling and Noncontrolling Securities

Q: When using total equity value which reflects assumptions that are consistent with the company's plans under current ownership, should a **discount for lack of control** be applied in estimating the value of equity securities underlying the stock-based compensation awards?

A: As discussed in paragraph 7.02 and the preceding Q&A, the value of the enterprise used as an input to estimating the fair value of the securities in the enterprise should reflect assumptions that are consistent with the company's plans under current ownership, given the way in which the investors who in aggregate have control of the business would maximize value. This enterprise value would be used as the input for valuing both noncontrolling (minority) equity securities underlying the stock-based compensation awards and equity securities of investors who in aggregate have control of the business, since both would share in the same distributions of either interim or liquidating cash flows. It would generally not be appropriate to apply a discount for lack of control in estimating the value of securities underlying the stock-based compensation awards solely due to the fact that noncontrolling shareholders do not have control over the enterprise. Paragraph 7.17 summarizes that the enterprise value for valuing minority interests in an

enterprise would be measured considering the company's cash flows under existing ownership, as well as the plans for a future liquidity event (if any), and the value that investors in a minority interest would expect to be realized upon the future liquidity event (whether via a sale or an IPO). After measuring the enterprise value on this basis, it is unnecessary to back out a control or acquisition premium in estimating the fair value of the minority securities.

In situations where the controlling shareholders receive disproportionate returns in the form of either interim or liquidating distributions, those disproportionate returns are typically better reflected in equity allocation models directly rather than through the application of a discount for lack of control. For example, if controlling shareholders hold preferred securities with a multiple of liquidation preference or a high accruing dividend, that is typically reflected in the equity allocation model (such as those discussed in chapter 6).

In situations where, in the opinion of the noncontrolling shareholders, the business is being operated suboptimally, the noncontrolling shareholders would still share in the suboptimal interim and liquidating distributions. In this case the impact on value is typically reflected in the assumptions made in the valuation of the business rather than through the application of a discount for lack of control, such as reduced cash flow forecasts and terminal values in the income approach or reduced multiples in the market approach, as appropriate.

Q&A 10.55: Applying Discounts for Lack of Marketability to the Total Equity Value

Q: Is it appropriate to apply a discount for lack of marketability to the total equity value of the enterprise?

A: As discussed in paragraph 7.25, a *discount for lack of marketability* reflects an adjustment to the calculated values from the valuation model to reflect differences in the value of specific securities that are not otherwise captured by the valuation model, considering the principal market for those specific securities. Therefore, it generally would not be appropriate to apply a discount for lack of marketability to the total equity value, even though it might be appropriate to apply a discount for lack of marketability to the equity securities underlying the stock-based compensation awards.

Q&A 10.56: Illiquidity and Marketability of Securities

Q: Should the equity securities issued in the latest round of equity financing be considered marketable from a valuation perspective? Should an adjustment for illiquidity be applied when estimating the total equity value by calibrating to a transaction based on the price paid for the equity securities issued to investors in the latest round of equity financing?

A: A typical investment in a private enterprise is marketable (a market exists) but illiquid (the market is not active). The task force recommends that for the purpose of valuing equity securities in the enterprise, the value of the enterprise should be measured considering the cash flows under current ownership, and the required rate of return for

the investors who in aggregate have control of the business. Thus, for valuation purposes, securities held by the investors who in aggregate have control of the business (often, the preferred stock)⁷ would be considered as marketable as the enterprise measured on this basis.

When solving for the equity value implied by a transaction, if the transaction includes information rights and control features consistent with those held by the investors who in aggregate have control of the business, no adjustment to the transaction price would be needed. If the transaction is for a minority interest that does not include these features, then adjustments to the price may be considered; that is, if the transaction is considered to reflect a lower price due to the lack of marketability of the interest, it may be appropriate to back out a discount and calibrate to a higher value on a marketable basis. See chapter 7 for more discussion of this issue.

Minority interest holders may not have the same information and noneconomic rights as the investors who in aggregate have control of the business. To the extent that the lack of these features would limit access to the same principal market, it may be appropriate to consider these minority equity securities to be less marketable. Therefore, a discount for lack of marketability might be appropriate in these situations. Please see Q&A 10.58 for further discussion.

Q&A 10.57: Comparison Between the Fair Value of the Enterprise and the Value of the Enterprise Used for Valuing Equity Securities

Q: How does the fair value of the enterprise, measured considering a transaction for the entire enterprise on a controlling basis, compare with the value of the enterprise used for valuing minority equity securities, measured considering the cash flows under current ownership and the investors' required rate of return?

A: It is important to consider the cash flows under current ownership when valuing an equity security, not because a minority interest has a different value than a controlling interest on a pro rata basis, but because a market participant acquiring a minority interest may not be able to modify the cash flows for the business. For example, for a family-owned business that is being run sub-optimally, market participants transacting in a minority interest would continue to assume those sub-optimal cash flows. Market participants transacting in a controlling interest would likely assume that they would make improvements to the cash flows but would also likely require high returns considering the risk associated with making those improvements.

⁷ These investors typically have the ability to decide the timing of additional financings and the ultimate *liquidity event*. In addition, these investors typically have additional rights, such as *information rights* and various control features, that would allow a new investor to conduct a due diligence process and that give them the ability to protect their investment. Note that the *enterprise value* would still be measured based on the cash flows under current ownership and the investors' required rate of return. It would typically be appropriate to consider the expected time horizon of the *investment* when valuing the securities in the enterprise.

Q&A 10.58: Discounts for Lack of Marketability and Control When the Enterprise Has a Simple Capital Structure

Q: A private equity firm has recently purchased an enterprise at with an equity investment of \$200 million, structured as 20 million common shares at \$10 per share, along with \$300 million in third-party debt, corresponding to a total purchase price of \$500 million. To incentivize the employees, the private equity firm also issued 1 million common shares to management, bringing the total number of shares to 21 million. Do these management shares have the same value as the investor's shares?

A: When both investors and management hold the same interests, there is no explicit difference in economic rights. Hence, any difference in value between the investor and management interests would be due to differences in the principal market. Factors that may indicate an additional discount for lack of marketability would apply to the management interests include the following:

- Investor shares have different contractual rights, such as information rights, rights to a board seat, right of first refusal, tag-along and drag-along rights, and so on, as described in paragraphs 6.11–.13. If management interests lack tag-along rights, information rights, and other noneconomic rights that investors would typically expect, market participants in the principal market for the management interests may demand a higher rate of return due to the additional risks associated with the lack of these rights.

Factors that may indicate that no additional discount for lack of marketability would apply to the management interests include the following:

- Market participants in the principal market for the management interests would be willing to pay the same price as the market participants for the investor interests, even though they do not have the same information and other noneconomic rights. For example, in some cases, third-party minority investors may purchase shares at the same price as the lead investor in a transaction, even though the minority investors may not have the same rights as the lead investor.
- If the management shares have similar rights to the shares purchased by the minority investors, the management shares would have the same value as the price paid by the minority investors, which would imply that no additional discount for lack of marketability would apply.

Information to Be Considered in the Valuation

Q&A 10.59: Considering Information that Would not be Available to Market Participants

Q: If a private company plans to make a change in the management team that will result in significant costs to the company but may also result in a better outlook, should these changes be considered in the valuation of the equity securities underlying the stock-based compensation awards, or should the company wait to consider that in their valuation until these changes are announced?

A: As discussed in paragraph 8.35, because private companies do not have the same disclosure obligations as public companies, market participants in the principal (or most advantageous) market may not have access to information about significant events at the company (e.g. status of clinical trials), historical or projected financial information, or other material non-public information that could have a significant impact on the price if it were known. However, even if this information would be likely to have an impact on the value of the securities if it were known, the fair value of the securities underlying the stock-based compensation awards is defined as the price at which the securities would transact in the principal (or most advantageous market). Therefore, fair value would not consider any information that is not known or knowable to market participants in the principal (or most advantageous) market.

If there are no observable transactions for the company's securities or any observable transactions do not take place in the principal market, the company would need to consider what information would be available to market participants in the principal (or most advantageous) market, given the usual and customary due diligence in this market. If the market participants would have access to information about the expected management changes and the corresponding impacts on the business outlook, then those changes should be considered in the valuation of the equity securities underlying the stock-based compensation awards. When evaluating the information that market participants in the principal market would consider in the valuation, it is important to consider specific facts and circumstances and use professional judgment.

Q&A 10.60: Postvaluation Event (Customer Financial Condition) — Assessment as Known or Knowable

Q: As of the valuation date of December 31, 20X0, a valuation specialist was not aware that a major customer of the enterprise filed for bankruptcy protection in late December. Consequently, the filing was not considered in the valuation assumptions. If the valuation specialist becomes aware of the bankruptcy filing in late January 20X1, prior to issuance of the valuation report, should the valuation specialist consider the possible effects of the filing on the valuation as of December 31, 20X0?

A: Yes. Because the filing was a matter of public record, it was known or knowable by market participants as of December 31, 20X0, and should be reflected in the report to the extent that it would affect the valuation. Note, however, that a bankruptcy is often not fatal to a company, and its ability to continue as a customer and to meet its obligations might not be affected by the bankruptcy filing. Therefore, it would be appropriate to consider the specific situation when estimating the impact on the valuation.

Q&A 10.61: Postvaluation Event (Product Approval) — Assessment as Known or Knowable

Q: A valuation specialist was estimating the fair value of the equity securities of a pharmaceutical company on February 1, 20X7, for the valuation date of December 31, 20X6. As of December 31, 20X6, the Food and Drug Administration (FDA) was in the process of approving a new drug for the company; however, management of the company

did not know whether the drug would be approved. Management was hopeful that the drug would be approved in the near future. Approval of the drug was obtained on January 25, 20X7. Would the valuation specialist consider the drug approval event as part of the December 31, 20X6 valuation of equity securities?

A: No. The actual drug approval event would not be considered in the valuation as of December 31, 20X6, because it was not known or knowable by market participants as of that date whether the drug approval event was going to occur on January 25, 20X7. The valuation specialist would consider the fact that the company had a drug with potential FDA approval when trying to value the company on December 31, 20X6. However, the valuation specialist would not base the company's valuation on the fact that the FDA approval had been subsequently obtained but, instead, would base it on the likelihood of approval as of December 31, 20X6. That is, the fair value estimate as of December 31, 20X6 would be the same, regardless of whether FDA approval was subsequently obtained or denied. The valuation specialist would consider disclosing the subsequent FDA action in the valuation report. However, if the options were not granted on December 31, 20X6, but, instead, were granted on or after January 25, 20X7, then the FDA approval should be taken into account for these grants. The company may choose to update the report for the equity securities underlying the stock-based compensation awards to January 25, 20X7 or to the actual date of the grant. If the company also needs a valuation of the company and its securities as of their fiscal year end to value liability-classified warrants or tranch preferred obligations or convertible bridge notes, they may need to obtain two separate reports considering the information that was known or knowable as of each measurement date.

Remeasurements Relating to Changes in Enterprise Financials

Q&A 10.62: Remeasurements Relating to Accounting Changes

Q: If an enterprise recasts its financial statements subsequent to the measurement date as a result of an accounting change that does not affect free cash flow, such as a change in revenue recognition policy, does a valuation specialist need to revise its fair value measurement of that enterprise as of the measurement date?

A: From a purely theoretical perspective, the fair value of an interest in a business would not change as a result of a change in accounting policy. The fair value of an interest in a business is based on cash flows; therefore, changes in accounting policy, especially those policies that do not have an effect on an enterprise's expected cash flows, such as revenue recognition, typically would not have a significant effect on fair value.

Nevertheless, fair value is often measured using financial metrics (for example, revenue, EBITDA) that may be affected by adopting different revenue recognition policies. For instance, changes in revenue recognition could mechanically lead to a different fair value estimate when using the market approach based on multiples of the company's reported financial metrics or the income approach based on the projected financial information for the company, even when the fundamental operations or underlying risk of

the business has not changed. This situation highlights one reason why it is important not to perform valuations using a purely mechanical approach.

As such, the task force believes that it would be appropriate for the valuation specialist to determine whether the revision in the enterprise's reported revenues (or other accounting changes) would ultimately translate into a different set of cash flows (or a different level of risk) that would affect the value to the equity holders. When using a market approach, the valuation specialist also would consider how these accounting changes affected the selected guideline public companies or transactions and the corresponding estimated multiples. For example, the calibrated multiple from the transaction date may need to be adjusted to remove the impact of the change in accounting policy. When some of the guideline public companies have different accounting policies than others, the multiples for the guideline public companies may need to be adjusted to be consistent and relevant given the enterprise's policy.

Similarly, changes in the projected financial information for the company could be affected by changes to the company's accounting policy, unless adjustments are made to eliminate the impact. When using an income approach, the valuation specialist would consider the expected cash flows to the business, which would generally not be affected by accounting policy.

Q&A 10.63: Expected Financing—Effect on Valuation

Q: An enterprise, as of the valuation date of December 31, 20X8, is in negotiations for financing that is expected to occur in February 20X9. Should the “impending” financing be reflected in the valuation?

A: Yes, it would be appropriate to consider any information about future financing rounds that was known or knowable as of the measurement date. Please see paragraphs 6.53–.54 and 6.73 for discussion. The valuation specialist should consider the likelihood of possible event outcomes that existed as of the valuation date, including the likelihood of the financing event.

In some cases, it is necessary to simulate the future equity value long before the specific financing terms are knowable. For example, to value a security with down-round protection, the valuation should consider the evolution in the equity value over the period until the next financing round, solve for the price of the next financing round, and then consider how that price affects the previous securities. These valuations should use a simulation or lattice model beginning with the current equity value (or, in a hybrid method, the equity value within each different scenario) rather than using management's best estimate of the pricing of the next round.

Appendix A

Valuation Reference Guide

A.00.01 This appendix provides a reference guide to several technical issues to be considered as well as certain inputs or calculations that may be used in valuing securities in privately held companies. The Equity Securities Task Force (task force) hopes that this reference may be helpful to practitioners who perform valuations in this industry. Nevertheless, this appendix is not exhaustive and is not intended to substitute for training in the valuation field. Although this guide cannot cover every valuation issue, this appendix provides a brief overview of the following topics:

- 1) Relationship Between Fair Value and Stages of Enterprise Development
- 2) Planning for Taking the Company Public
- 3) Valuation Implications of Taking the Company Public
- 4) Venture Capital Rates of Return
- 5) Rights Associated With Preferred Stock
- 6) Early-Stage Companies with No Recent Financing Rounds
- 7) Dilution
- 8) Table of Capitalization Multiples
- 9) Derivation of the Weighted Average Cost of Capital
- 10) Estimating Differential Discount Rates Depending on the Risk for Each Security Using CAPM
- 11) Estimating Volatility for Privately-Held Companies
- 12) Models Used in Calculating Discounts for Lack of Marketability

Relationship Between Fair Value and Stages of Enterprise Development

A.01.01 *Fair value* is estimated as of a specific date, incorporating information that is known or knowable as of that date. The fair value of the securities within an enterprise is not static; rather, fair value changes over time as all of the elements that enter into estimating fair value change over time. Fair value is the price that market participants would pay in an orderly transaction at the measurement date, and would not reflect a particular investor's view of the value, but rather would reflect market participants' view of the value. One of the principal elements contributing to a change in fair value over time is the stage of development of the enterprise. Typically, value is created as an enterprise advances through the various stages of its development. As an enterprise progresses through the stages, it may achieve certain milestones, resulting in correspondingly diminished uncertainty and perceived risk and thereby enhancing the value of the enterprise. If, however, progress slows, ceases, or reverses, and the enterprise fails to progress through the "normal" stages of development, value would likely be diminished.

A.01.02 The achievement of a milestone does not necessarily in and of itself enhance value. As with any other determinant of value, the valuation specialist should consider the milestone in conjunction with other relevant factors when estimating an overall value at a point in time. However, all else being equal, the progressive achievement of milestones, such as those listed in paragraph A.06.04c, tends to enhance the value of the enterprise.

A.01.03 Different valuation approaches may be more appropriate for some stages of enterprise development than for other stages.¹ Paragraphs A.01.06–.01.11 discuss which approaches are typically considered more or less appropriate at each stage. As discussed in paragraph 3.05, the valuation specialist should apply more than one approach when appropriate and when sufficient data are available, and then would compare and assess the results. Under VS section 100, *Valuation of a Business, Business Ownership Interest, Security, or Intangible Asset*,² and the Appraisal Foundation’s *Uniform Standards of Professional Appraisal Practice* (as noted in footnote 3 in paragraph 3.05), the valuation specialist should consider all three approaches (market, income, and asset) for valuing an enterprise, and if one or more is not used, the valuation specialist should explain such nonuse. As discussed in paragraph .42 of VS section 100, the valuation specialist should correlate and reconcile the results obtained under different approaches and methods and assess the reliability of the results under different approaches and methods. If there are large discrepancies between the values indicated by different methods, it would be appropriate for the valuation specialist to revisit the assumptions underlying one or more of the methods and revise as needed. Weighting disparate indications of value without understanding the rationale for the differences would typically not be appropriate. Based on this analysis, the valuation specialist should then determine whether the fair value estimate should reflect the results of one method or a combination of the results of more than one method and explain the rationale for this determination. It would typically be appropriate to apply the same valuation methods consistently from one measurement date to the next, unless there is a change in circumstances that allows the use of an additional approach or makes a previous approach no longer relevant.

A.01.04 The typical stages of enterprise development are characterized in the following table.³ For purposes of this guide, the task force has chosen to present six stages of development. Other sources may indicate different numbers of stages.

<i>Stage</i>	<i>Description</i>
1	Enterprise has no product or service revenue to date and limited expense history and, typically, an incomplete management team with an idea, a plan, and possibly some initial product development. Typically, <i>seed capital</i> , or first-round financing, is provided during this stage by friends and family, <i>angels</i> , or venture capital firms focusing on early-stage enterprises, and the securities issued to those investors are occasionally in the form of common stock but are more commonly in the form of preferred stock.

¹ Please note that the use of different valuation techniques at different stages of development is not inconsistent with the guidance in FASB *Accounting Standards Codification* (ASC) 820-10-35-25 because changing facts and circumstances may require the use of different valuation techniques.

² VS section 100 can be found in AICPA *Professional Standards*.

³ This table is consistent with table 1-1 in the AICPA Accounting and Valuation Guide *Valuation of Portfolio Company Investments of Venture Capital and Private Equity Funds and Other Investment Companies*, except for minor editorial differences.

Stage	Description
2	Enterprise has no product or service revenue but substantive expense history because product development is under way, and business challenges are thought to be understood. Typically, a second or third round of financing occurs during this stage. Representative investors are venture capital firms, which may provide additional management or board of directors expertise. The typical securities issued to those investors are in the form of preferred stock.
3	Enterprise has made significant progress in product development; key development milestones have been met (for example, hiring of a management team); and development is near completion (for example, <i>alpha</i> and <i>beta testing</i>), but generally, there is no product revenue. Typically, later rounds of financing occur during this stage. Representative investors are venture capital firms and strategic business partners. The typical securities issued to those investors are in the form of preferred stock.
4	Enterprise has met additional key development milestones (for example, first customer orders or first revenue shipments) and has some product or service revenue, but it is still operating at a loss. Typically, <i>mezzanine financing</i> rounds occur during this stage. Also, it is frequently in this stage that discussions would start with investment banks for an initial public offering (IPO). ¹
5	Enterprise has product or service revenue and has recently achieved breakthrough measures of financial success, such as operating profitability or break-even or positive cash flows. A <i>liquidity event</i> of some sort, such as an IPO or a sale of the enterprise, could occur in this stage. The form of securities issued is typically all common stock, with any outstanding preferred converting to common upon an IPO (and perhaps also upon other liquidity events). ²
6	Enterprise has an established financial history of profitable operations or generation of positive cash flows. Some enterprises may remain private for a substantial period in this stage. ³ An IPO could also occur during this stage. ⁴
¹ The actual stages during which liquidity events occur or discussions with investment bankers for an IPO take place depend upon several factors. Those factors include, for example, the state of the economy, investor sentiment, and the state of the IPO market. ² See table note 1. ³ Almost all venture capital- and private equity-backed companies will ultimately seek liquidity through an IPO or sale of the company. Some enterprises (for example, family-owned or other closely held enterprises) may intend to remain private indefinitely. Such enterprises typically have simpler capital structures, and their securities may be valued using simpler methodologies. See chapter 5, "Valuation of Equity Securities in Simple Capital Structures." ⁴ See table note 1.	

A.01.05 The following paragraphs summarize, stage by stage, the valuation approaches that would typically be appropriate or inappropriate for each stage.

A.01.06 *Stage 1.* Because the enterprise has no product revenue and little or no expense history, it is typically unable to make reliable cash flow forecasts; therefore, using the *income approach* may be challenging. Because of the lack of comparative information available for publicly traded or privately held start-up enterprises, the *market approach* using the guideline public company or *guideline company transactions methods* may also be challenging. Valuation techniques that may be appropriate include the following:

- a. *Calibration to a recent round of financing.* Calibrating to a recent round of financing or to secondary transactions provides the most reliable indicator of the value of the enterprise at stage 1 if relevant transactions have occurred in the enterprise's equity interests. If relevant transactions have occurred or are pending, but are not arm's length or not concurrent with the valuation date, these transactions should still be considered, making adjustments as needed, considering the nature of the transaction and any changes in value that have occurred since the transaction (or that are expected to occur prior to the transaction; for example, if the transaction is contingent on achieving some milestone). See paragraphs 8.30–.33 and 8.56–.67 for more details.
- b. *Asset accumulation method.* The asset accumulation method may be an appropriate indicator of the value of the enterprise at stage 1, but it is complicated by the possible existence of internally developed intangible assets and goodwill not captured on the balance sheet of the enterprise. As discussed in paragraphs 3.96–.110, the *asset approach* is based on the principle that the fair value of an enterprise is equal to the fair value of its assets less the fair value of its liabilities. For early-stage enterprises, a significant amount of value may lie in intangible assets (for example, patented and unpatented technology assets, copyrights, domain names, and so on). Thus, the application of the asset approach to an early-stage enterprise necessitates a consideration of the value of intangible assets. Unless the enterprise has recently undergone a business combination or change of *control*, intangible assets will likely not be recognized in the enterprise's balance sheet. The identification and valuation of intangible assets can add significant complexity to the asset approach. The likelihood that intangible assets are significant to the fair value of an enterprise's assets increases as the enterprise moves through the stages of development. Without a consideration of intangible assets, the asset approach may be unreliable.

A.01.07 *Stage 2.* The income approach (*discounted cash flow (DCF) method*) will likely be more relevant than in stage 1; however, the enterprise may still have significant difficulty in forecasting cash flows. As such, the valuation specialist may choose to use the income approach during stage 2 as a secondary approach (that is, for purposes of comparison with the results obtained from another approach) and will typically use a DCF method and relatively high *discount rate*. Similar to stage 1, the guideline public company and guideline company transactions methods generally would not provide a reliable estimate of value because of (a) the lack of publicly traded start-up enterprises and transactions from which to obtain comparative information, and (b) the fact that market multiples could exhibit substantial dispersion from one enterprise to the next, making it difficult to determine any kind of reliable "average" multiple. Additionally, because stages 1 and 2 enterprises have yet to generate revenue or profits, there is generally no financial metric to which the valuation specialist can apply a multiple. As with stage 1, the asset approach (asset accumulation method) also may be appropriate during stage 2; however, it is more likely that intangible assets will be a material part of the enterprise's value, thus adding complexity to this approach. After stage 2, the relevance of the asset approach tends to diminish significantly because it will likely be more reliable to measure the value of intangible assets and goodwill in aggregate through the use of a method under the income or market approaches that incorporates enterprise-level cash flows. Similar to stage 1, calibrating to a recent transaction will often be the most indicative method in stage 2. Please see section A.06, "Early-Stage Companies With No Recent Financing Rounds," for a discussion of approaches that may apply for valuing early-stage companies when there are no recent financing rounds.

A.01.08 *Stage 3.* Although, generally, there is no product revenue during this stage, the valuation specialist may be able to obtain financial forecast information that is more reliable than information obtained in earlier stages and, therefore, may have a reasonable basis for application of the income approach.

However, similar to stage 2, both the income approach and market approach present challenges. Valuation specialists that use the income approach during stage 3 typically use a DCF method and relatively high discount rate. However, because cash flow forecasts for the enterprise often assume speculative growth rates, profits may still be years in the future, and the VC rates of return cited for investments in this stage span a wide range, the income approach value may be hard to estimate. A market approach using the guideline public company and guideline company transactions methods also may be difficult to apply, given the lack of publicly traded start-up enterprises from which to obtain comparable information. Therefore, rather than relying exclusively on these methods, because it is typical for multiple rounds of private equity or venture capital financing to have occurred by this stage, *calibration* may provide a reliable indication of value that should be used as a basis for comparison to any other indication.

A.01.09 *Stage 4.* Both the income and market approaches are typically appropriate for stage 4. The reliability of a financial forecast would tend to be higher in stage 4 than in stage 3 because more information is available on which to base the forecast; therefore, the discount rate for a DCF method under the income approach would tend to be lower in stage 4 than in stage 3, reflecting the lower degree of risk. If there are comparable publicly traded enterprises from which to obtain information, the valuation specialist may consider such enterprises under a market approach and adjust the valuation, considering the enterprise's relative size, expected growth, and profitability. Moreover, because for a particular enterprise there will have been at least as many rounds of financing by stage 4 as there were by stage 3, the valuation specialist will likely have a reasonable basis for application of the market approach using calibration.

A.01.10 *Stage 5.* Income and market approaches would generally be appropriate, as in stage 4, and the discount rate for a DCF method under the income approach would tend to be lower in stage 5 than in stage 4. Under a market approach, because the enterprise may be closer to a *liquidity event* in stage 5 than in stage 4, adjustments to the valuation based on comparisons with publicly traded enterprises would tend to be lower in stage 5. Calibration should still be considered, especially for arm's-length transactions with new investors. However, if there are no new investors or if the round is led by a strategic investor with existing investors tagging along at low levels, calibration may not provide a reliable indication of value. For example, small investments made by existing investors in the period leading up to an initial public offering most often do not reflect a negotiated price.

A.01.11 *Stage 6.* Both the income and market approaches would be appropriate for an enterprise in this stage. Because the enterprise has an established financial history, the reliability of forecasted results would tend to be higher than in an earlier stage; therefore, the discount rate for a DCF method under the income approach would tend to be lower than in an earlier stage. For an income approach that uses the *expected present value technique*, the existence of an established financial history would enable the development of a more reliable set of probabilities than would be the case if that valuation technique were applied in an earlier stage. As in stage 5, calibration should be considered for arm's-length transactions.

A.01.12 Paragraphs A.01.06–.01.11 summarize, stage by stage, which valuation approach(es) would typically be appropriate or inappropriate for each stage. That information also may be looked at in a different way. The following table summarizes, approach by approach, in which stages or circumstances that approach would typically be used:

Valuation Approach	Stages or Circumstances for Which Approach Is Typically Appropriate or Not Appropriate
<i>Market</i>	The guideline public company and guideline company transactions methods typically increase in applicability and feasibility as an enterprise progresses through the middle stages and enters later stages of its development (for example, as an enterprise passes through stages 3–6). It is unlikely that comparable enterprises with readily determinable fair values will be identified during earlier stages. Investments by friends, family, or <i>angel investors</i> in shares of the enterprise’s stock, which typically occur during earlier stages, may indicate a negotiated transaction price that reflects fair value and might be used in calibration, although related party transactions cannot be presumed to reflect fair value without further analysis. As private equity or venture capital rounds of financing occur, calibration may be used to provide an indication of value and corroborate the indications of value under other valuation techniques. All investments in the enterprise’s equity should be examined to determine if they are reflective of <i>market participant</i> assumptions regarding the firm’s value. (Synergies specific to a particular buyer would ordinarily be factored out of a fair value estimate; see paragraph 3.50.)
<i>Income</i>	The income approach typically is applied to later-stage enterprises (for example, stages 4–6) as opposed to early-stage enterprises because there is a greater likelihood at later stages of there being a financial history on which to base a forecast of future results. The income approach may be appropriate in earlier stages with a relatively high discount rate; however, consideration should be given to the reliability of the forecast and the selection of an appropriate discount rate, given the usually speculative nature of the forecast at this early stage.
<i>Asset</i>	Historically, the asset approach (using the asset accumulation method) has been applied primarily to enterprises in stage 1 and some enterprises in stage 2. The asset approach would typically be applied under any of the following circumstances: • There is a limited (or no) basis for using the income or market approaches. That is, there are no comparable market transactions, and the enterprise has virtually no financial history and, consequently, is unable to use past results to reasonably support a forecast of future results. • The enterprise has not yet made significant progress at research and development and has not yet developed a product. • A relatively small amount of cash has been invested. The use of the asset approach is generally less appropriate once an enterprise has generated significant intangibles and internal goodwill or after the enterprise has raised private equity or venture capital financing. The generation of these intangibles often starts to gain momentum in the middle stages of the enterprise’s development and continues to build through the later stages.

Planning for Taking the Company Public⁴

A.02.01 Under current securities laws, there are several possible pathways to becoming a public company. A few of the most popular pathways include an initial public offering (IPO), a reverse merger into a public shell, a reverse merger with a special purpose acquisition corporation (SPAC) or a direct listing.

⁴ Taking a company public is a complex process and the details fall outside the scope of this guide. The purpose of this section is to provide an overview of a few of the most widely used processes for taking a company public, to provide context for the valuation issues discussed in section A.03, “Valuation Implications of Taking the Company Public.” Furthermore, although the processes

- a. *IPO*. In an IPO, a private company raises capital by selling newly-issued shares. An IPO usually is executed as an underwritten offering whereby an underwriting syndicate assembled by the lead underwriter distributes the shares to investors using its established contacts and distribution channels. Companies may choose this path to have more control over their initial investor base and obtain an underwriter's assistance in marketing and managing initial trading volume.
- b. *Reverse merger*. In a reverse merger transaction, an existing public "shell company", acquires the private operating company. The public shell is a publicly traded corporation with few or no operations. Typically, the shareholders of the private company exchange their shares for a large majority of the shares of the public company. The assets and business operations of the post-merger surviving public company are primarily, if not solely, those of the former private company.
- c. *SPAC*. A Special Purpose Acquisition Company (SPAC) is a company without operations that was established to first raise capital through an IPO, and then to acquire or merge with a private operating company, taking that company public. The funds raised in the SPAC IPO are typically held in escrow until the SPAC successfully merges with a target (the deSPAC transaction). Investors holding the SPAC shares typically have the right to redeem the capital from escrow a few days before the deSPAC transaction.
- d. *Direct listing*. In a direct listing, a private company becomes public by allowing existing shareholders to sell shares directly to the public, typically without raising new funds in the process. Companies that choose this path are often ones that have strong brand recognition that can generate sufficient market interest without an underwriter or sponsor.

A.02.02 A private enterprise might choose to become public for numerous reasons, including the following:

- a. *Opportunity to raise capital*. In an IPO, an enterprise may raise capital by selling newly issued securities (a primary offering). In a SPAC transaction, the SPAC will contribute the capital from the escrow fund, and the private company shares will convert into public company shares at an exchange ratio based on the agreed transaction price. A reverse merger or SPAC transaction may also raise capital via a *Private Investment in Public Equity (PIPE) transaction*. This additional capital may be used to fund growth (for example, investments in plant and infrastructure, research and development, sales and marketing, business acquisitions, and geographic expansion).
- b. *Immediate liquidity for existing investors and employees (if a secondary offering is included)*. In an IPO or direct listing, an enterprise may allow existing securities holders to sell securities (a secondary offering). A reverse merger or SPAC typically would not include a secondary offering. A secondary offering may provide immediate liquidity for existing securities holders. However, even after the company becomes public, only certain shares become publicly tradable free and clear of all restrictions. The remaining securities remain unregistered and subject to restrictions on public resale.
- c. *Subsequent liquidity for existing investors and employees*. In connection with becoming public, an enterprise usually applies to list its securities on a national exchange or market, which

described in this appendix are accurate as of the writing of this guide, they are subject to change. For the latest information on SEC regulations and forms related to taking a company public, readers should refer to the SEC website at www.sec.gov.

provides an active, liquid aftermarket for the enterprise's securities. Rule 144, "Selling Restricted and Control Securities," of the 1933 Act provides a safe harbor for sales of unregistered and control stock by affiliates (that is, officers, directors, or 10% shareholders) and nonaffiliates of the registrant. Under Rule 144, any holder of the securities in the public company may resell unregistered securities after a six-month holding period from the date of purchase, subject to volume limitations applicable to sales by affiliates of the issuer. Absent a public registration, unregistered securities may be sold after a one-year holding period, subject again to volume limitations and public information requirements for sales by affiliates. Thus, even though an enterprise typically does not register all of its securities in an IPO, existing investors and employees obtain the prospect of liquidity in the public aftermarket after satisfying any legal or contractual holding period restrictions.

- d. *Maximizing the value of an enterprise's securities.* Public securities markets tend to maximize the exchange value of an enterprise's securities by
 - i. maximizing the number of potential buyers (that is, providing liquidity),
 - ii. minimizing the asymmetry of information among potential buyers (that is, providing timely, complete, and accurate disclosures about the enterprise, as well as about alternative investments),
 - iii. minimizing transaction costs for buyers and sellers, and
 - iv. maximizing the subsequent marketability of purchased securities (that is, eliminating holding periods and providing future liquidity).
- e. *Access to financing in public capital markets.* Once an enterprise is public, it can access the public capital markets. In a subsequent registration, an enterprise may raise capital through a primary offering of its equity securities or debt instruments. Given that public markets tend to provide the most efficient source of capital at the lowest cost, an enterprise can reduce its *cost of capital* and, consequently, increase its market value by going public.
- f. *Equity "currency."* In addition to the ability to sell securities for cash, a public enterprise obtains the ability to register shares for other uses, such as the acquisitions of businesses or compensation to employees, officers, and directors. Such equity currency may provide an efficient means for financing growth through acquisitions. Also, such equity currency may be an attractive form of compensation (for example, stock options and performance plans, stock purchase plans) in view of the liquidity of the shares issued. Equity compensation arrangements allow an enterprise to conserve cash, and they may offer tax advantages to the enterprise and increase employee loyalty and motivation.
- g. *Enhanced status.* Successfully becoming public enhances the status and credibility of an enterprise. For many start-up enterprises, becoming public is perceived to validate the prospects of the enterprise in the eyes of customers, suppliers, employees, and investors. In addition, an IPO, reverse merger, SPAC transaction or direct listing may serve as a branding event, which increases the public and market awareness of the enterprise and its products and services.
- h. *Avoiding economic penalties.* In some cases, a private enterprise may have obtained financing that contemplates a public exchange offer for registered securities or that contains penalties (for

example, higher interest rates or dividend and *liquidation preferences*) if the enterprise does not become public by a specified date.

A.02.03 The process for taking a company public may be lengthy. Preparation for going public begins well before the filing of a registration statement with the SEC. Key considerations in preparing a private company to become public include the following:

- a. *Corporate governance.* Enterprises evaluate the structure and composition of their board of directors to ensure that they are appropriate for a public enterprise. For example, enterprises will need independent outside directors who can provide specialized expertise, independent perspectives, and enhanced credibility with the investment community. Enterprises also prepare by forming special committees of the board, particularly an audit committee, which is responsible for oversight over the financial reporting process, internal audit, and the independent auditors. Enterprises that plan to list their securities on a national exchange also prepare to comply with the respective listing requirements.
- b. *Controls, compliance processes, and records.* Enterprises consider the adequacy of their compliance procedures, books and records, and internal accounting controls in light of all applicable laws and regulations. In addition, enterprises consider whether they have adequate controls and procedures that will allow the timely preparation of reports required of public companies.
- c. *Executive management.* Enterprises consider the character, skills, experience, and overall composition of their executive management team. Enterprises contemplating going public often look to hire a CEO and CFO who have prior experience at public enterprises or with the process of taking companies public. In addition, enterprises consider the composition and strength of other key members of the management team (for example, heads of operations, production, sales, marketing, accounting, human resources, information systems, internal audit, treasury, and legal). Enterprises consider their code of ethics applicable to executive and financial officers. Under federal securities laws, officers of public enterprises have significant duties and obligations and could face significant penalties and sanctions for violations.
- d. *Employee compensation.* Enterprises develop an employee compensation strategy and implement an effective compensation system. Employee compensation programs are critical in competing for talent, retaining employees, and using incentives to align employee performance with business strategies. Developing an employee compensation strategy is complex and considers, among other things, philosophy; organizational culture and dynamics; competitive factors; potential dilution (from using stock or options as compensation); and legal, tax, and accounting implications.

Valuation Implications of Taking a Company Public

A.03.01 Section A.01, “Relationship Between Fair Value and Stages of Enterprise Development,” discusses the stages of development of a privately held enterprise and the associated considerations for estimating the fair value of its equity securities. As an enterprise prepares to go public, it typically would need to demonstrate continued success in the execution of its business plan and strategy by meeting important milestones. In addition, when preparing to go public, as discussed in section A.02, “Planning for Taking the Company Public,” an enterprise would need to consider the rigors of the public marketplace and comply with the legal and regulatory requirements of being a public company. This section discusses aspects of taking a company public that affect *enterprise value* and, consequently, the fair value of the

enterprise's equity securities. In addition, the discussion in the previous section highlights some of the risks and uncertainties that an enterprise faces during this lengthy, complex, and costly undertaking.

A.03.02 As described in the previous section, one of the most widely used processes to take a company public is an IPO. In preparing for an IPO, an enterprise may attempt to project its ultimate IPO price. In addition, a enterprise also may obtain an estimate of the IPO price when it selects an investment banker to perform underwriting services. Ultimately, the managing underwriter and the company's board or management, or both, have primary responsibility for finalizing the IPO price. That price is not finalized until the date the registration statement becomes effective. Estimates of the IPO price at earlier stages of the process, including the estimated price range in a preliminary prospectus, are not binding and presume the successful completion of the offering under market conditions that are conducive to the offering. Early estimates of IPO prices by investment bankers, particularly those made as part of the selection process, often differ from the final IPO price because, among other things, the estimates are made at relatively early stages, and the bankers may not yet have performed all their due diligence on the enterprise's financial projections. Even after the company files its preliminary prospectus with an estimated IPO price range and commences the offering, the company and managing underwriter may reassess the demand for the IPO and change the estimated price range, either upward or downward. In addition, the actual IPO price may be materially influenced by the specific supply and demand characteristics of the market at or near the date of the actual pricing. These factors can include other offerings coming to market, announcements by guideline public companies or competitors and the market performance of their shares, or other developments in the company's industry or region. Therefore, management or an underwriter's estimate of the ultimate IPO price may not be a reasonable estimate of the fair value for the equity securities of the enterprise in the periods prior to the IPO. Instead, it would be appropriate to consider the estimated future IPO price as an input into the valuation of the securities underlying the stock-based compensation awards, while also considering the risks associated with the IPO and market participants' required rate of return. As additional support for the valuations used in the IPO filings, companies may perform a reconciliation (backtesting) to explain the differences between the ultimate IPO price and the valuation estimates at earlier measurement dates.

A.03.03 Another process to take a company public is a reverse merger into a public shell or a SPAC. In a traditional reverse merger into a public shell or in a SPAC merger, the parties agree to an equity value for the target and a corresponding exchange ratio into the public company stock. This transaction price is subject to approval by the shareholders of each entity. As in an IPO, there is risk associated with the transaction until it closes. Therefore, until the transaction is completed, the expected transaction price may not be a reasonable estimate of the fair value under pre-closing conditions. Instead, it would be appropriate to consider the traded price for the public company shell or the SPAC and the contractual exchange ratio as inputs into the valuation of the common stock underlying the stock-based compensation awards. Unlike an IPO, however, the traded public company stock price already reflects the present value of the stock contingent on success, so it would not be appropriate to discount for an additional required rate of return. For example, if the traded price for a SPAC upon announcement increases significantly above the escrow price, the high price indicates both that the transaction is highly likely to close and that market participants are willing to pay more for the stock than the agreed equity value for the target.

A.03.04 In a direct listing, the stock price for the company at the direct listing date is typically set via an auction process. However, the company must still disclose the estimated price range in the prospectus. The estimated price range would inform the valuation of the securities underlying the stock-based compensation awards, similar to the way that an IPO price range would be considered in the valuation.

A.03.05 The indicated price for an IPO, reverse merger or SPAC merger, or direct listing, reflects an estimate of the expected valuation of the company's shares based upon its position assuming that it is successful in going public. As a result, it normally incorporates the effect of any capital raised via the transaction, the proceeds from which can be used to either reduce the company's debt level or provide capital to fully finance the company's expansion or development of its business plan. In contrast, most financings for earlier-stage companies do not allow the company to reach break-even cash flows and become self-sustaining. Therefore, the indicated price contingent on a successful transaction may be free from the *risk premium* associated with the need to raise additional capital associated with earlier-stage companies.⁵

A.03.06 As discussed in section A.01, the stage of operational development of an enterprise affects its value, which typically builds throughout the various stages of development, although generally not in a linear fashion. The stage of development will influence the perceived risk of investing in the enterprise, which, in turn, will influence the valuation. The reduction in the amount of perceived risk can be observed in a declining cost of capital as the enterprise progresses through the stages of development. A reduction in the cost of capital increases enterprise value, just as a decline in interest rates increases the value of a bond with fixed interest and principal payments.

A.03.07 Companies that are successful in going public typically experience a reduction in their cost of capital. Going public eliminates or mitigates many of the factors that may have contributed to a *marketability discount* or *discount for lack of marketability* for certain equity securities in the enterprise, as discussed in chapter 7, "Control and Marketability." For example, going public generally:

- Provides liquidity for the enterprise's equity securities by providing a public resale market. Increased liquidity (that is, a larger pool of potential investors) is provided for equity securities listed on a national exchange or association versus equity securities not so listed.
- Provides capital to finance the enterprise's further growth and fund operations, and reflects an expectation of reduced risk in the business, with more stable operations consistent with other public companies.
- Reduces limitations on the ability of the holder to transfer the equity securities. Purchases of registered securities in the IPO or aftermarket are not subject to the resale restrictions imposed under the federal securities laws on purchases of unregistered securities. (See paragraph A.02.01(b) and A.02.01(c).)
- Reduces valuation uncertainty. Securities traded in *active markets* have readily determinable values, and SEC regulations require that public enterprises provide investors with financial statements and other information on a regular basis.
- Reduces concentration of ownership. The sale of additional equity securities to investors in the public domain reduces the concentration of ownership and increases the proportionate amount of ownership in the enterprise that is available for purchase.

⁵ The degree to which the transaction provides the majority of the capital needed to retire debt or fund future operations depends on the market's current appetite for newly public companies, the industry, and other factors. For example, in biotech, an IPO, reverse merger, SPAC transaction or direct listing may be just one financing event in funding the long path to Food and Drug Administration approvals.

- Reduces or eliminates the priority, preferences, and special rights that may be associated with senior classes of equity securities or shareholder debt instruments, together with many of the other rights or encumbrances that may be contained in a private company's shareholders' agreement.

A.03.08 The difference in the rates of return between privately held enterprises and publicly held enterprises can be observed historically on a portfolio basis. Paragraphs A.04.03–.05 illustrate portfolio returns of VC investors in privately held enterprises at various stages of development, as contrasted with returns on investments in publicly held companies over similar periods. The higher returns on VC investment portfolios are consistent with the expected higher cost of capital for privately held enterprises, particularly enterprises in the earlier stages of development. The reduction in the cost of capital for newly public companies can be observed historically on an enterprise basis. The typically lower cost of capital for newly public enterprises is associated with enhanced enterprise value. In simple terms, as illustrated in section A.08, "Table of Capitalization Multiples," a reduction in the discount rate (cost of capital) will increase the capitalization multiple (valuation) of an assumed perpetual annuity (enterprise).

A.03.09 In summary, this section discusses and explains the factors that contribute to differences between the fair value of an enterprise's equity securities in periods before going public and the ultimate price realized upon going public. Among those factors are the improved marketability and the reduction in the newly public enterprise's cost of capital. Moreover, as more fully described in section A.02, the process of taking a company public is complex and lengthy, with an uncertain outcome. During this process, the enterprise's continued execution of its business plan will result in an increase in its enterprise value resulting from (a) changes in the amount and relative timing of its future net cash flows (estimated and actual) and (b) a reduction in the risk associated with achieving its projected results. In addition, changes in macroeconomic factors (for example, actual and projected rates of economic growth, current interest rates, and expectations about future interest rates) also may affect the extent to which an enterprise's value changes in the months or years prior to successfully going public. The task force believes that such factors should be considered when valuing privately-held-company equity securities underlying stock-based compensation awards.

Venture Capital Rates of Return

A.04.01 Private company investors typically target rates of return that generally exceed the target rates of return expected to be generated by investments in publicly traded equity investments. Investors in earlier-stage companies may require an even higher target rate of return, providing an additional return to the investors to offset the higher failure rates of earlier-stage enterprises and the risks associated with developing a product or service and reaching a suitable market that can sustain a profitable business. Unless investors in early-stage companies target a sufficiently high rate of return, the overall rate of return on the investment portfolio will not be sufficiently high to compensate for the many situations in which substantially all of the investors' capital receives no return.⁶

A.04.02 This section cites the most recent data available to the task force from various research studies and other sources. Readers are cautioned that such data may not reflect the business environment as of their

⁶ For example, according to data obtained from Cambridge Associates, of the 1,606 biotech companies backed by U.S. Venture Capital (VC) firms between 1986 and 2008, 44% of the companies did not return the investors' capital. Although the average realized rate of return on these companies was approximately 25%, in order to compensate for the 44% loss rate, the investors would have needed to target a return in excess of 40%. Note that as discussed in paragraph A.04.03, VC and PE fund returns have remained relatively consistent over time; therefore, despite their age, these academic studies are still regarded as providing reasonable

reading and are presented only for the purpose of explaining the concepts in this chapter; more recent data may be available elsewhere. When performing a valuation, readers are also cautioned not to use the data in this chapter as the sole basis for estimating discounts or discount factors. Rather, the facts and circumstances of the enterprise and its equity securities should be considered in determining the appropriate data to use in the valuation.

A.04.03 As a successful enterprise advances through the various stages of development and the associated risk declines as milestones are achieved or as progress is made toward executing on a business plan, the target rates of return for an investment in an enterprise would likely decline. The extent to which these return expectations would be adjusted over time would depend on many factors, including the industry, the competitive environment, the degree of technological or obsolescence risk, the track record of the enterprise's management team and many other considerations. The following publications provide guidance about the rates of return expected by VC investors at various stages of an entity's development through successful exits. A summary is set forth in the following table:⁷

indications of the target range of returns by stage of development. Calibration should be used to estimate the rate of return for any specific investment consistent with the projected cash flows for that investment.

⁷ The stages in the table are based on the study that was performed and do not match the stages defined in paragraphs A.01.04–.01.11 describing the stages of enterprise development.

Rates of Return⁸

<i>Stage of Development</i>	<i>Plummer¹</i>	<i>Scherlis and Sahlman²</i>	<i>Sahlman and Others³</i>
Start-up ⁴	50%–70%	50%–70%	50%–100%
First stage or early development ⁵	40%–60%	40%–60%	40%–60%
Second stage or expansion ⁶	35%–50%	30%–50%	30%–40%
Bridge/initial public offering (IPO) ⁷	25%–35%	20%–35%	20%–30%

¹ James L. Plummer, *QED Report on Venture Capital Financial Analysis* (Palo Alto: QED Research, Inc., 1987).

² Daniel R. Scherlis and William A. Sahlman, "A Method for Valuing High-Risk, Long-Term Investments: The 'Venture Capital Method,'" Harvard Business School Teaching Note 9-288-006 (Boston: Harvard Business School Publishing, 1989).

³ William A. Sahlman and others, *Financing Entrepreneurial Ventures*, Business Fundamentals (Boston: Harvard Business School Publishing, 1998).

⁴ As described in the publications referenced in this table, start-up-stage investments typically are made in enterprises that are less than one year old. The venture funding is to be used substantially for product development, prototype testing, and test marketing.

⁵ As described in the publications referenced in this table, early development-stage investments are made in enterprises that have developed prototypes that appear viable and for which further technical risk is deemed minimal, although commercial risk may be significant.

⁶ As described in the publications referenced in this table, enterprises in the expansion stage usually have shipped some product to consumers (including beta versions).

⁷ As described in the publications referenced in this table, bridge/IPO-stage financing covers such activities as pilot plant construction, production design, and production testing, as well as bridge financing in anticipation of a later IPO.

Note that the results of these studies provide ranges of target rates of return, rather than point estimates, because there is significant variability in the industry profiles and risk characteristics of enterprises and market participants can have substantially differing views of the *required rate of return* even for the same investment. Although these publications are not recent studies that incorporate recent performance

⁸ A few more recent studies also present data and analysis on VC returns, but they are not directly comparable to the returns as presented in this table. For more details, please see the following:

- Craig R. Everett, "2024 Private Capital Markets Report" (Malibu: Pepperdine University Graziadio School of Business and Management, 2024). Note that this publication also includes rates of return for many other types of private capital investments, as well as summaries of other information captured in Pepperdine's annual industry survey. See https://digitalcommons.pepperdine.edu/gsbm_pcm_pcmr/.
- Michael Ewens, "A New Model of Venture Capital Risk and Return," *SSRN*, <http://ssrn.com/abstract=1356322> (2009).
- J.H. Cochrane, "Risk and Return of Venture Capital," *Journal of Finance Economics* 75 (2005), 3–52.
- Sarin, Atulya and Das, Sanjiv Ranjan and Jagannathan, Murali, The Private Equity Discount: An Empirical Examination of the Exit of Venture Backed Companies (January 22, 2002). Available at SSRN: <https://ssrn.com/abstract=298083> or <http://dx.doi.org/10.2139/ssrn.298083>.

expectations, the task force believes they still provide relevant perspectives on the return expectations of investors in private company securities. Although relative rates of return may change over time due to changes in stock market performance, in practice, the task force believes that market participant expectations, particularly in the context of early-stage investments, do not change significantly over time, given the very long holding periods of most VC investments. The fact that it can take an early-stage company 10 years or more to grow from an investable idea to an operating business that is prepared to go public or be an acquisition candidate tends to reduce the investors' expectations about their ability to perfectly time an exit with the exact moment of a peak in the relevant equity markets. As a result, though actual VC and PE fund performance changes based upon market conditions and is often correlated to equity market performance, in practice, target rates of return for private company investments in most sectors tend to be relatively constant.

A.04.04 As discussed in the sidebar "Resolution of Uncertainties Over Time," in paragraph 3.94, the risks associated with VC-backed investments may not be resolved smoothly over time, and thus value is unlikely to grow between milestones at the target rate of return. Therefore, when calibrating to a venture financing transaction and then using the calibrated *valuation model* to estimate the value of a venture investment at interim measurement dates, it may be appropriate to use a scenario-based approach and explicitly model the probability of loss, then discount at a portfolio rate of return. According to statistics published by Cambridge Associates, averaged across 2020 through 2024,⁹ portfolio rates of return over a 5 to 25 year period based on a modified public market equivalent (mPME¹⁰) Russell 2000 index fell in the range of 15% to 25% (which, as discussed in paragraph A.04.05, is 500 to 1700 bps higher than the mPME Russell 2000 index in that period). These returns reflect a premium over the expected public equity returns, consistent with the higher risk and higher cost of capital associated with private enterprises. Furthermore, VC fund managers typically target rates of return in the 25% to 35% range (or more), reflecting the need to outperform their peers. The required rate of return for any specific investment given the estimated future payoffs may be estimated via *calibration*.

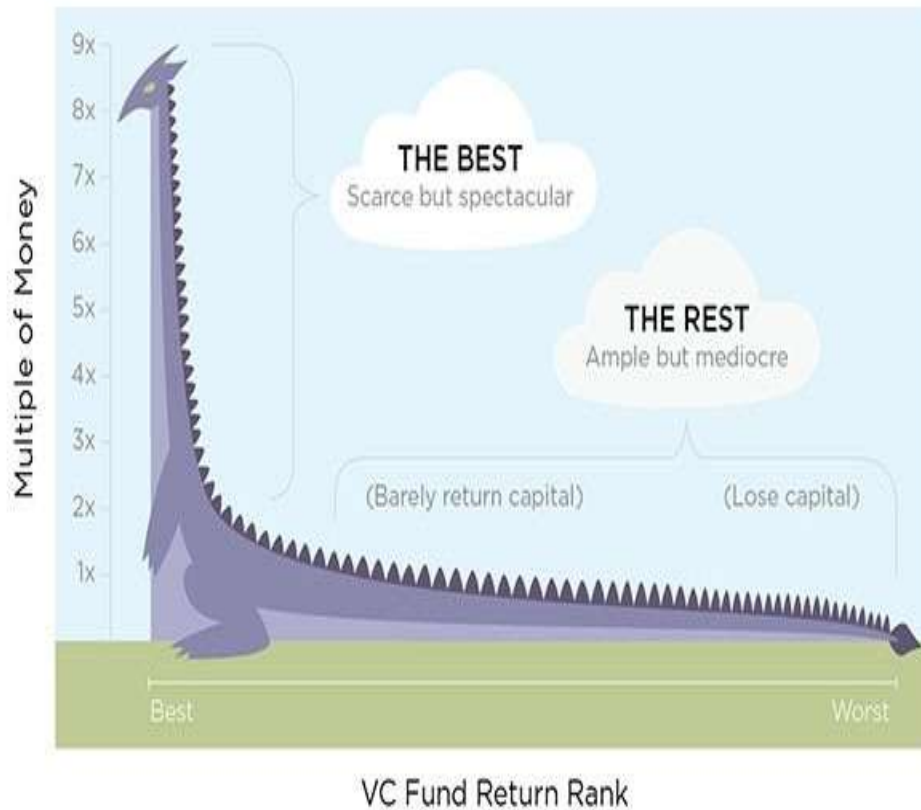
A.04.05 According to statistics published by Cambridge Associates, averaged across 2020 through 2024, the pooled horizon returns¹¹ from all VC funds exceeded the return for the mPME Russell 2000 index by roughly 1300 basis points in the 5-year measurement period, 500 basis points in the 15-year measurement period, and 1700 basis points in the 25-year measurement period. But these pooled horizon returns reflect the aggregate performance of all VC funds — including the most successful funds and the least successful funds and all between. To continue to be successful at raising new capital and thereby be able to stay in business, however, most VC fund managers target rates of return that far exceed the median performance, seeking to perform in the top quartile of overall fund performance.

⁹ This data is sourced from Cambridge Associates' "US Venture Capital—Index and Selected Benchmark Statistics" September reports from 2020 through 2024, which can be accessed at the [Cambridge Associates website](#).

¹⁰ The Cambridge Associates Modified Public Market Equivalent (mPME) calculation is a private-to-public comparison that seeks to replicate private investment performance under public market conditions. See the preceding footnote for information about the source of this data.

¹¹ Pooled horizon return, net of fees, expenses, and carried interest. See the preceding footnote for information about the source of this data.

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Rights Associated With Preferred Stock

A.05.01 As discussed in chapter 6, "Valuation of Equity Securities in Complex Capital Structures," preferred stock has characteristics that allow preferred stockholders to exercise various economic and noneconomic rights, all of which need to be carefully considered and incorporated into the valuation analysis. Each of those rights is described in this appendix.

A.05.02 Note that different classes of preferred stock typically have different rights and preferences. Typically, the latest round of preferred stock has superior features because the new investors and existing investors who are willing to continue funding the company require such features. In an *up round*, the new round may be *pari passu* (of equal seniority) with previous rounds, but it will have a higher price and, therefore, a higher total liquidation preference. In other situations, the latest round may be senior to previous rounds, have a liquidation preference greater than its purchase price, or have other economic and noneconomic rights. Therefore, it is important to consider the rights and preferences of the various rounds of preferred stock when estimating the total *equity value* and its allocation to the various equity securities. See chapter 6 for further discussion.

Economic Rights

A.05.03 *Preferred liquidation preferences.* Preferred liquidation preferences are a key feature distinguishing preferred stock from common stock. They grant preferred stockholders priority to equity proceeds during a company liquidation event, specifying the amount they receive before any distribution to common stockholders and potentially other classes of preferred stockholders. In scenarios like a low-value sale of the company where preferred stock does not convert, these preferences can result in preferred stockholders receiving returns disproportionate to their ownership. This mechanism offers downside protection for preferred investors, who often require this preference to mitigate investment risk. The structure and size of the liquidation preference (both in relation to the initial investment and among different preferred classes), as well as any participation rights, significantly affect the distribution waterfall and ultimate returns for all stakeholders. See chapter 6 for further discussion on valuation implications.

A.05.04 Liquidation preferences may be broadly divided into two categories:

- a. *Nonparticipating preferred.* In a liquidation, the holder of nonparticipating preferred stock is entitled only to receive the fixed liquidation preference amount and does not share any upside beyond that preference. Alternatively, if the preferred has the option to convert into common, the preferred stockholder may give up liquidation preference and convert into common stock if such a conversion will provide higher proceeds.
- b. *Participating preferred.* In a liquidation, the holder of participating preferred stock is entitled to receive its liquidation preference first and then share pro rata with the common stock in any remaining liquidation proceeds without requiring the conversion of such preferred stock into common stock. The total return to preferred stock in this scenario may be limited (for example, three times the original purchase price of the preferred stock) or unlimited. If the upside is unlimited, the preferred stockholder will not have an incentive to voluntarily convert to common stock. If the upside is limited, the preferred stockholder may elect to convert the preferred stock to common stock if such conversion would result in a higher total return to the stockholder.

A.05.05 Liquidation preferences are most commonly equal to the initial cost of the preferred stock (a 1x liquidation preference). However, in cases in which the issuer has raised several rounds of financing, when the investor is uneasy regarding the valuation of the financing round, when the financing is intended to bridge to a near term high value exit, or when the investor otherwise has significant leverage in the transaction (for example, when the company is in distress), the liquidation preference may equal a multiple of the purchase price (for example, 1.5x or 2x). Such a feature can result in a disproportionate return for holders of preferred stock relative to the common stock in outcomes in which the preferred stock does not convert to common stock.

A.05.06 Liquidation preferences are particularly important in a non-IPO situation, such as an acquisition or a sale of all or substantially all of enterprise's assets in which the investors choose to exit at a moderate value where it would not be optimal for the preferred stock to convert. In a qualified IPO, provisions relating to the conversion of preferred stock to common stock typically require that all outstanding preferred stock automatically convert to common stock¹². Such conversion is typically a prerequisite for

¹² This requirement may not apply in an IPO where the IPO will be completed using a different legal entity and the legal entity that issued the stock-based compensation will continue as a related private entity. For example, an LLC may have a capital structure with a fully participating preferred stock (often called Class A units) plus profits interests (often called Class B units). In most cases, the IPO

an investment banker to market the IPO. A consequence of such conversion is that the liquidation preferences and most other special rights associated with preferred stock, with the exception of *registration rights*, are eliminated. Accordingly, for companies that are hoping to ultimately exit via an IPO, market participants may not assign much value to liquidation preferences and other preferred stock rights. Generally, if a proposed IPO does not meet the requirements of a qualified IPO, the consent of at least a majority of the holders of preferred stock is required to convert all preferred stock to common stock and permit the IPO to proceed.

A.05.07 In evaluating the likelihood of a qualified IPO and the resulting effect of such IPO on the value of the preferred stock preferences, however, the economic and noneconomic rights of preferred stockholders should be considered carefully. If preferred stock liquidation preferences significantly exceed the return that preferred stockholders would receive on conversion to common stock, preferred stockholders will have an incentive to exert their control features toward delaying the exit or toward consummation of an acquisition of the enterprise rather than an IPO. Accordingly, even in circumstances in which an IPO may appear feasible for an enterprise in view of its stage of development, the liquidation preferences and other preferred stock rights would still have value if the preferred stockholders have the incentive and ability to steer the enterprise toward an acquisition at an earlier date in which they receive their contractual minimum return rather than seeking a higher payoff via an IPO or later acquisition at a higher price where it would be optimal for the preferred to convert. In making this determination, it would be appropriate to consider which preferred shareholders have control over the timing of exit, whether these investors have timing constraints (for example, if the fund is nearing the end of its life), and what the prospects are for the business (for example, it is more likely for the preferred stock investors to accept an earlier exit where they receive their liquidation preference if that payoff provides more than a 1x return and the prospects for exceeding that return are low, than if the investors hope to receive a much higher return by waiting).

A.05.08 The following example illustrates the effect of liquidation preference rights in disproportionate value sharing between preferred and common stockholders:

Company A has 3 million shares of Series A preferred stock and 7 million shares of common stock outstanding. The Series A preferred stock was issued for \$20 million and carries participating liquidation preference rights with a total liquidation preference of two times the original issuance price. That is, upon a liquidation of Company A, Series A preferred shares would initially receive \$40 million of the sales proceeds before any amount of money could be distributed to common stockholders. After the payout of the initial preference, the Series A preferred and common stockholders participate ratably in the remaining proceeds of the liquidation. Assuming three different scenarios in which Company A is acquired for a purchase price of \$50 million, \$75 million, and \$200 million, respectively, the following would be the payoffs to Series A preferred stockholders and common stockholders:

	<i>Scenario I</i>	<i>Scenario II</i>	<i>Scenario III</i>
Sales proceeds (A)	\$50,000,000	\$75,000,000	\$200,000,000
Liquidation preference of Series A preferred stockholders	\$40,000,000	\$40,000,000	\$40,000,000
Initial distribution of liquidation preference of Series A stockholders (B)	\$40,000,000	\$40,000,000	\$40,000,000

would be completed by a related corporate entity (for example, in an Up-C structure) and the profits interests would remain subordinated to the investor units.

	<i>Scenario I</i>	<i>Scenario II</i>	<i>Scenario III</i>
Balance available for ratable allocation to preferred and common stockholders in the ratio of their ownership interests (30% and 70%) [(C) = (A) - (B)]	\$10,000,000	\$35,000,000	\$160,000,000
Allocation of balance to preferred shareholders [(D) = (C) × 30%]	\$3,000,000	\$10,500,000	\$48,000,000
Allocation of balance to common stockholders [(E) = (C) × 70%]	\$7,000,000	\$24,500,000	\$112,000,000
Total proceeds to:			
Preferred stockholders [(B) + (D)]	\$43,000,000	\$50,500,000	\$88,000,000
Common stockholders (E)	\$7,000,000	\$24,500,000	\$112,000,000
Relative allocation of enterprise value to:			
Preferred	86%	67%	44%
Common	14%	33%	56%

A.05.09 Preferred dividends. Preferred dividends or preferred stockholder rights to dividends may be classified according to priority, level of board of directors' discretion, and whether they are cumulative. Preferred stock dividends generally are set at a percentage of the preferred stock purchase price, such as 10%. Preferred stockholders generally are entitled to dividends in priority to common stockholders. Typically, preferred stockholders are entitled to payment of dividends only if and when they are declared by the board. After payment of percentage-based dividends, as described previously (also known as initial dividends), holders of preferred stock also may be entitled to participate in any dividends to be paid to the holders of common stock. Noncumulative dividends that are not declared or paid in a given year do not carry forward into or become payable in subsequent years. Accordingly, if an enterprise operates in an industry in which it is not the practice to declare or distribute dividends to preferred or common stockholders, noncumulative preferred dividend rights typically are not meaningful or substantive. In some financings, preferred dividends are cumulative, which means that if initial dividends are not declared and paid in one year, the amount of such initial dividends is added to the initial dividends for the following year, and so on.

A.05.10 The existence of unpaid cumulative dividends becomes more relevant upon the payment of dividends or the liquidation of an enterprise and, in some cases, may be relevant to the conversion of preferred stock into common stock and the voting of an enterprise's outstanding stock. If an enterprise wishes to pay dividends to its stockholders, the application of first priority cumulative dividends is clear. In the event of a liquidation, cumulative dividends generally are treated as additional investment by preferred stockholders in the enterprise, such that each preferred stockholder receives additional liquidation proceeds if cumulative dividends have not been paid in prior periods. Similarly, if the conversion or voting of the preferred stock is calculated to include accrued but unpaid dividends, this will result in a greater than one-for-one ratio for purposes of conversion or voting of the preferred stock. Therefore, the right to cumulative dividends adds substantive value to preferred stock in the form of a higher rate of return to preferred stock on payment of dividends or a liquidation and, in some cases, an increased preferred-to-common conversion ratio and enhanced voting power.

A.05.11 Redemption rights. A redemption right is, in substance, a put provision and allows an investor to redeem its investment; typically, it is designed to provide an investor with influence over the time to exit from an investment in an enterprise when the enterprise otherwise would not yet seek a liquidity event. As a result, such rights serve as a tool for preferred stockholders to motivate the enterprise to explore

various liquidity alternatives on an ongoing basis. Enforcement mechanisms that accompany these rights are important. For instance, a right to elect a majority of the board of directors will give an investor the ability to compel the sale of the enterprise. In practice, an investor will not be able to redeem the investment if the enterprise does not have the resources necessary to fund the redemption. In some cases, the redemption right may effectively force the enterprise to seek an earlier sale or liquidity event.

A.05.12 *Conversion rights.* These rights allow preferred stockholders to convert their shares into common stock at their discretion. Preferred stockholders will choose to convert to common stock if such conversion produces better economic results for them. The conversion ratio may be fixed or variable. Variable *conversion rights* are more powerful than fixed rights because variable rights often are structured to allow a better payoff to preferred stockholders. Conversion rights often are subject to adjustment by operation of the antidilution rights described subsequently and, in some cases, are also subject to adjustment for unpaid cumulative dividends, as described previously, or failure by the enterprise to achieve certain milestones.

A.05.13 *Participation rights.* After the holders of preferred stock receive their full liquidation preference (as noted in paragraph A.05.04), their *participation rights* entitle them to share with the holders of common stock in the remaining amount being paid for the company. For example, if a company is sold for \$100 million, the preferred stock has a liquidation preference of \$20 million, and the preferred stock represents 40% of the total number of outstanding shares of the company, then the \$100 million would be distributed among stockholders as follows:

- a. The first \$20 million is paid to the preferred shareholders per the stated liquidation preference.
- b. The remaining \$80 million is split as follows:
 - i. Preferred stockholders receive their 40% pro rata share (\$32 million) per their participation rights.
 - ii. Common stockholders receive the remaining 60% (\$48 million).

Participation rights are described as capped when the participation rights of the preferred stock are limited so that the preferred stock stops participating in the proceeds of a sale after it has received back a predetermined dollar amount, usually expressed as "X" times the liquidation preference. For example, a three times participation right in the forgoing example would cap the amount the preferred shareholders could receive at \$60 million. So, if the company were sold for \$150 million, then the preferred shareholders would receive only \$60 million, not \$72 million based on the \$20 million liquidation preference plus a 40% participation right. Participating preferred with a cap typically also includes conversion rights. So if the company were sold for \$200 million, then the preferred shareholders would convert and receive \$80 million, not \$60 million based on the liquidation preference plus participation up to the cap.

A.05.14 *Antidilution rights.* These rights are designed to prevent or reduce dilution of the holdings of preferred stockholders in the event of subsequent *down rounds* of financing. Antidilution rights are powerful rights providing downside economic protection to preferred stockholders. These rights result in an automatic adjustment of the original conversion ratio of preferred stock to common stock in the event that an enterprise subsequently issues stock at a price per share below the original issue price of the existing preferred stock. Antidilution rights may be broadly divided into three categories, *full ratchet* and two types of *partial ratchet*, as follows:

- a. *Full ratchet.* The conversion price of the previously issued preferred stock is adjusted to the new round price, regardless of the dilutive effect of a new issuance. Full ratchet antidilution rights tend to become increasingly prevalent in difficult financing environments when investors have increased leverage, and there is increased uncertainty about a company's valuation and prospects. For example, if 10,000 shares of preferred stock are outstanding with a \$10 conversion price and \$10 original issuance price, and a subsequent round of 1,000 shares is issued at a \$5 conversion price, the conversion price of the original 10,000 shares will be adjusted to \$5. Accordingly, the conversion ratio, which is the original purchase price divided by the conversion price, will now equal 2 (\$10 divided by \$5), and the same 10,000 originally issued shares of preferred stock will now convert into twice as many shares of common stock.
- b. *Partial ratchet: narrow-based weighted average.* This alternative is less onerous than full ratchet and takes into account both the lower issuance price of new stock and the size of the new issuance relative to the enterprise's outstanding preferred stock. The formula for calculating the new conversion price of the old preferred shares is as follows:

$$\text{Original issue price of old preferred shares} \times (A + B) / (A + C)$$

A = outstanding preferred capitalization (number of shares)

B = total dollar amount paid for new shares divided by the price per share paid for old preferred shares

C = number of new shares actually issued at new price

Assuming the same facts as in item (a), the conversion price of the old shares would be adjusted to

$$\begin{aligned} & \$10 \times [10,000 + (\$5,000 / \$10)] / [10,000 + (\$5,000 / \$5)] \\ & = \$10 \times (10,500 / 11,000) = \$9.55 \end{aligned}$$

Therefore, 1 share of old preferred stock will now convert into \$10 / \$9.55, or 1.047 shares of common stock.

- c. *Partial ratchet: broad-based weighted average.* This is the most common alternative and is less onerous than either the full ratchet or narrow-based weighted average alternatives and further takes into account the size of the new issuance relative to the enterprise's entire capital base, instead of just the outstanding preferred stock. Although there is no single definition of broad based, the most common formulation is to take into account the effect of the new issuance on the total capitalization of the enterprise, including common stock, preferred stock, and outstanding options and warrants (and, in rare cases, the pool of options reserved for future grants). The formula for calculating the new conversion price of the old preferred shares is as follows:

$$\text{Original issue price of old preferred shares} \times (A + B) / (A + C)$$

A = outstanding common stock, preferred stock, options, and warrants (number of shares)

B = total dollar amount paid for new shares divided by the price per share paid for old preferred shares

C = number of new shares actually issued at new price

In item (a), assuming that the enterprise's outstanding capitalization includes 9,000 shares of common stock, 1,000 additional shares of common stock subject to outstanding options or warrants, and 10,000 shares of preferred stock, the conversion price of the old shares would be adjusted to

$$\begin{aligned} & \$10 \times [20,000 + (\$5,000 / \$10)] / [20,000 + (\$5,000 / \$5)] \\ & = \$10 \times (20,500 / 21,000) = \$9.76 \end{aligned}$$

Therefore, 1 share of old preferred stock will now convert into $\$10 / \$9.76$, or 1.024 shares of common stock.

A.05.15 *Registration rights.* Registration rights come into play when an enterprise does not complete an IPO within a specified period, at which time the holders of a specified percentage of preferred stock are generally entitled to demand that the enterprise exercise its best efforts to complete an IPO. Furthermore, if an enterprise has completed an IPO, the outstanding preferred stock generally converts into common stock, and the holders of a specified percentage of such converted stock are entitled to demand that the enterprise use its best efforts to complete a secondary public offering of their converted shares or otherwise register their shares for public trading within a certain period. These registration rights survive the enterprise's IPO and continue to add value in the form of enhanced liquidity to preferred stockholders whose shares have converted to common stock.

Noneconomic Rights

A.05.16 The differences in economic rights between different classes of equity may result in different payoffs for these classes, and therefore may have a significant impact on value. The impact of the differences in non-economic rights discussed in the following paragraphs is more subtle. When investors' interests are aligned, investors would be expected to act in concert to maximize their returns. When different investors have different classes of equity, the non-economic rights associated with these classes may determine which investors have the right to decide on the timing of exit and to approve any additional financings, which in turn influences the value of the economic rights associated with these classes. Therefore, even when the non-economic rights are not modelled directly, it is important to consider these factors in the valuation analysis.

A.05.17 *Voting rights.* These are rights of preferred stockholders to vote together with common stockholders on matters requiring a stockholder vote and, in addition, to vote on certain matters as a separate class. Each share of preferred stock generally has votes equal to the number of shares of common stock then issuable upon conversion of preferred to common. As described under the descriptions in this appendix of preferred dividends, conversion rights, and antidilution rights, the rate of conversion of preferred stock to common stock and the resulting number of votes per share of preferred stock are subject to adjustment.

A.05.18 *Protective provisions and veto rights.*¹³ These rights give preferred stockholders the ability to veto major actions of an enterprise in a manner disproportionate to their percentage ownership. These provisions and rights require that the enterprise obtain the consent of at least a fixed percentage of

¹³ This discussion is not intended to cover protective or veto rights addressed in FASB *Accounting Standards Codification* (ASC) 810-10-25.

preferred stockholders prior to taking significant actions. Investors also may require and receive individual series-based protective provisions, in addition to the protective provisions that apply to all preferred stock. As a result, enterprises may be required to obtain the consent of a specified percentage of all preferred stock, as well as specified percentages of certain series of preferred stock, prior to taking significant corporate actions. Through such series-based distinctions, protective provisions have become an even more powerful tool for certain preferred stock investors to exercise veto rights well in excess of their rights based on percentage ownership alone. Examples of the significant corporate actions that require the consent of a specified percentage of preferred stock and, in many cases, specified percentages of particular series of preferred stock are as follows:

- Changes in the rights of preferred stockholders
- Increases or decreases in the number of shares of preferred stock or creation of any new class or series of stock having rights senior to, or on par with, existing preferred stock
- Declaration of dividends or any other distribution to stockholders or repurchase of outstanding stock
- Merger, acquisition, corporate reorganization, change of control, or any transaction in which all or substantially all of the enterprise's assets are sold
- Amendments or waivers of any provision of the enterprise's certificate of incorporation or bylaws that would change the rights of preferred stockholders
- Increase or decrease in the authorized size of the board of directors
- Appointment of a new CEO

In some cases, the protective provisions include additional matters that are typical covenants in debt transactions, such as the following:

- Any material change in the nature of the enterprise's business.
- Any transfer or exclusive license of the enterprise's technology or intellectual property, other than such transfers or licenses that are incidental to the sale of the enterprise's products in the ordinary course of business.
- The incurrence of indebtedness in excess of a prespecified amount (for example, \$1 million).
- Any material change in the enterprise's accounting practices or any change in the enterprise's external auditors.

A.05.19 *Board composition rights.* Preferred stockholders with these rights have the ability to control the board composition in a manner that is disproportionate to their share ownership. The holders of each class of stock are entitled to elect a fixed number of directors, regardless of the holders' respective ownership. Generally, board composition rights lead to control of the enterprise. Typically, investors in earlier rounds insist on board representation. In some cases, when investors purchase a significant percentage of the company or otherwise have significant leverage in the financing, investors in the latest series of preferred stock may insist on the right to appoint a majority of the board. This results in a

further concentration of control in a single series of preferred stock well in excess of that series' percentage ownership of the enterprise.

- A.05.20** *Drag-along rights.* These rights provide the controlling investor(s) with the right to force other investors to sell at the same time (for example, forcing a sale of the entire company).
- A.05.21** *Right to participate in future rounds.* Each preferred stockholder with this right is allowed to purchase a portion of any offering of new securities of the enterprise based on the proportion that the number of shares of preferred stock held by such holder (on an as-converted basis) bears to the enterprise's fully diluted capitalization or to the enterprise's total preferred equity. The *right to participate in future rounds* gives the preferred stockholders the ability to maintain their respective ownership percentages and restricts the ability of common stockholders to diversify the shareholdings of the enterprise.
- A.05.22** *First refusal rights and tag-along rights.* Preferred stockholders with first refusal rights may effectively limit the sale of common stock held by the enterprise's founders and other key members of management by allowing the preferred stockholders the right to purchase such shares from the founders at the price offered by a third party. Stockholders with tag along rights are allowed to participate pro-rata in any sale of the shares that another investor negotiates. Generally, first refusal rights are designed to reduce the liquidity of common stock held by founders and other key members of management and tag along rights are designed to increase liquidity for the shareholders with these rights and thereby enhance the value of the preferred stock.
- A.05.23** *Management rights.* These rights entitle preferred stockholders to standard inspection rights (rights to inspect in detail the enterprise's books and accounts), as well as rights to visit board meetings. These rights may be in place of rights to nominate directors or may be available if, for some reason, the preferred stockholders do not want to exercise their rights to nominate a director.
- A.05.24** *Information rights.* Preferred stockholders with *information rights* have the ability to be granted access to pre-specified information, such as monthly financial statements within a specified period following each month end, the annual operating plan within a specified period prior to the beginning of the fiscal year, and audited financial statements within a specified period following the enterprise's fiscal year-end. These rights provide preferred stockholders timely access to vital information that may not be available to common stockholders.
- A.05.25** In summary, preferred-stock rights not only offer the holders the opportunity for disproportionate returns on their investments but also may provide downside protection. In addition, preferred-stock rights may provide investors with degrees of control over the enterprise that are disproportionate to their ownership percentages. The valuation challenge is to identify objective methods of quantifying premiums attributable to those rights. See chapter 7 and section A.12, "Models Used in Calculating Discounts for Lack of Marketability".

Early-Stage Companies With No Recent Financing Rounds

- A.06.01** The valuation of equity securities in pre-revenue firms or firms in which revenues or other financial metrics do not provide a good basis for valuation presents several challenges. *Market approach* based on guideline public company or transaction multiples is often difficult to apply to early-stage firms due to the absence of meaningful financial metrics, relevant comparable companies, and other factors. Discounted cash flow (DCF) models can produce a wide range of value indications due to uncertainty regarding the timing and amounts of future revenue, income, and cash flows as well as due to the wide

range of discount rates reported in studies of the required rates of return for early-stage investments. Given these challenges, these "traditional" approaches may not be appropriate for the valuation of pre-revenue entities.

A.06.02 Because traditional approaches may be complex, valuations of these entities are often based on transactions in the equity securities of the subject company. Such transactions can include financing transactions in which the company sells shares directly to investor(s) and secondary transactions in which existing shareholders sell shares. Financing transactions frequently involve more significant dollar amounts and a larger number of investors compared to transactions between shareholders. Financing transactions, particularly arm's length transactions that involve new investors, are generally considered as one input when establishing fair value estimates. However, financing transactions are transactions between the company and the investors and may be in a different class of equity, rather than representing an exit market for the securities underlying the stock-based compensation awards. Therefore, they would not represent the principal market for the securities underlying the stock-based compensation awards. Please see chapter 8, "Inferring Value From Transactions in a Private Company's Securities," for additional discussion of the relevance of various types of transactions when estimating the fair value of the securities underlying the stock-based compensation awards.

A.06.03 A prior financing transaction or secondary transaction may be used to establish the value of the overall business enterprise and the securities in the enterprise by calibrating to the transaction price. Although developing assumptions for use in a guideline public company or transaction model or a DCF model for a pre-revenue company may be challenging, as discussed in paragraph A.06.01, the development of and calibration of these valuation models (or other relevant techniques) at the time of a financing transaction or secondary transaction can assist in assessing future changes in the fair value of investment holdings. At the time of a subsequent valuation, the model inputs can be revised to capture the impact of interim value events on revenue and cash flow projections and risk expectations for the entity.

A.06.04 For early-stage companies without a recent financing round or secondary transaction, the best choice will very likely involve a technique that "rolls forward" the value obtained from a previous (now stale) financing round or secondary transaction that reflected fair value at initial recognition. Before pursuing this course of action or before relying solely on this technique, however, a variety of factors should be considered. Each valuation will depend on specific facts and circumstances; significant professional judgment is required. Selection and application of an appropriate valuation methodology will require answers to the following questions:

- a. *Was a calibrated valuation model developed at the time of the previous financing or secondary transaction?* If a calibrated valuation model exists, then its usefulness for the current valuation, as well as the identification of changes in key assumptions and model inputs, can be determined by the answers to additional questions. If a calibrated valuation model does not exist, the valuation specialist may begin by performing an analysis as of the most recent financing or secondary transaction date to ensure that the starting assumptions used in the valuation model are consistent with market participant assumptions for the transaction.
- b. *Is the entity performing in accordance with its business plan?* Conceptually, for pre-revenue companies, successful execution of a business plan in the absence of other significant value events would suggest an increase in value. All other things held equal, shortening of the expected time to a successful exit would produce an increase in value, as the firm is moving closer to generating positive cash flows and a self-sustaining operating position. In this case, updating the valuation model developed at the time of the previous financing event or secondary transaction

date would be a reasonable choice to estimate fair value, subject to any additional analysis or tests of reasonableness deemed prudent. Note, however, that value accretion for early-stage companies is rarely linear, and that in the absence of some objective determination of "progress," market participants would be unlikely to pay more simply due to the passage of time or the company's expenditure of effort. See the "Resolution of Uncertainties Over Time" sidebar in paragraph 3.94.

- c. *Have any significant value events (internal or external) occurred since the previous financing round?* Value events can be either favorable (for example, achievement of a significant milestone) or unfavorable. Value events are typically viewed as internal developments achieved by an entity. However, value events may also include industry or general economic developments external to the entity. Both internal and external value events that have occurred since the previous financing round should be considered.

Examples of internal value events for pre-revenue firms include the following:

- Assembly of key members of management team
- Delivering a proof of concept or prototype
- Obtaining regulatory approval
- Establishing ongoing relationships with strategic partners
- Executing contracts with key customers

The importance and transparency of value events can vary. Biotech firms perform research and development efforts, the results of which are critical to the continued operation of the firm. This information is often held confidentially, pending completion of the effort. Pre-revenue software or other technology companies may have fewer significant value inflection points, and their progress may be measured by more incremental metrics. Related somewhat to these concepts, the degree of uncertainty regarding ultimate technical feasibility and market acceptance may vary. For example, biotech firms typically have a much higher risk of technical feasibility relative to other firms.

The impact of value events may vary depending on the stage of development of an entity. Pre-revenue early-stage companies (Stage 1 and 2) have significant remaining risk. Consequently, the impact of a single value event at early-stage firms may be less significant as a large amount of execution risk still remains. Delivering a prototype to a potential customer is not the same as signing a multi-year contract, which in turn, is not the same as actually generating revenues and profits.

External factors may also affect the company. For example, if the company is developing a great new technology to address a particular market need, and the industry evolves in a way that obviates that market need, the company may be forced to retrench. In such a case, the previous financing round or secondary transactions would not be relevant, and the valuation would consider the company as if it were a brand-new start-up, given its management team, workforce, and any other useful assets.

Industry and general stock market movements should also be considered in the valuation of a pre-revenue entity. Minor movements in the prices of firms in an industry are often not included in the development of fair value estimates for pre-revenue companies due to the significant differences in stage of development of pre-revenue companies relative to public companies. Significant movements in the prices of firms in an industry, however, should be considered as a possible indication of a change in the market potential for a subject company. A significant change in economic outlook for the industry could affect all privately held companies, both mature and developing, within the industry.

As with industry price movements, small movements in the overall stock market may be less meaningful for pre-revenue companies. Large movements could reflect a change in the investment climate that would affect the value of an investment in a pre-revenue firm. The financial crisis beginning in 2008 adversely affected security prices and capital availability. Valuations across the general market, as well as within the VC sector, declined as a result of the financial distress.

When available, transactions in "similar" early-stage companies may also be considered. In assessing these transactions, the reliability of information is an important consideration. Information is typically private and subject to limited public disclosure requirements, if any. Also, as discussed, the comparability of the firms at a pre-revenue stage may present significant valuation challenges.

Subject to changes in the company's strategy and considering the nature of any intervening value events, the starting point for the valuation process would be the valuation model used to calibrate to the previous round. However, given that one or more of these events is considered to be significant, adjustments to model assumptions and inputs may produce meaningful changes to the measurement, requiring the development of reasonableness tests based on factors outside of model parameters.

- d. *Does the entity need additional financing to survive until a successful exit event?* This question addresses the issue of viability: will the company be able to continue pursuing its original strategy? Liquidity and capital adequacy are important considerations in the valuation of pre-revenue firms.

VC-financed companies typically require multiple rounds of financing, and the company's success in the fund-raising process will depend on a variety of factors.

- One key consideration is the company's progress on development efforts and execution to date relative to the business plan in place at the time of the financing or secondary transaction. The absence of favorable value events could lead to a cessation of future financing and the termination of operations of a pre-revenue firm. On the other hand, if the company is on the cusp of a positive value inflection event and has timed its financing needs perfectly or has access to bridge financing, the company may have the ability to raise the next round at a significantly higher price.
- Another important influence on the availability, pricing, and terms for future financing rounds is the cash runway of the company, considering the resources on hand and the company's *burn rate*. Early-stage entities with limited cash resources may experience lower future valuations due to a weaker negotiating position. Reduction in cash resources and absence of new financing activity could suggest a lack of value creation, an

increasing risk of financial distress, and a reduced time period until cash resources are fully expended. These factors contribute to reduced strategic options and lower valuations. In advance of the financing, the valuation would consider the greater risk profile for the company.

These factors can affect the decision regarding the selection of a valuation model and its key inputs. If the company's viability is in question, then a simple update of the calibrated valuation model may produce a value that is not properly adjusted for the risk of failure. In such circumstances, it may be necessary to develop additional scenarios to capture the increased risk of failure that may not have been present at the time of the previous financing round.

- e. *Is the entity attempting to raise additional financing as of the measurement date?* Valuation discussions at or prior to a valuation date should be considered in the development of fair value estimates. A negotiated price for a transaction that has not yet closed, with appropriate adjustments for the uncertainty associated with the pending transaction, may be considered, along with a revised DCF model or other methods, or both, in determining an updated valuation.

A.06.05 Although the valuation of pre-revenue companies is challenging, careful consideration of recent transactions, as well as the changes in the company and the markets over the period since the transaction, provides a reasonable basis for valuation. The starting point in the valuation of pre-revenue companies that have had no recent usable financing transactions will typically be a roll-forward of the value based on the previous, now stale, financing transaction, by employing the valuation model used to calibrate to that transaction and updating its key assumptions and inputs. However, unless the circumstances suggest that nothing of significance has occurred since that previous transaction, the updated value should be carefully tested for reasonableness and supplemented with additional scenarios as necessary. The selection of additional analyses and scenarios is, as always, a matter of professional judgment.

Dilution

A.07.01 For purposes of this section, *ownership dilution* is defined as a reduction in the percentage of ownership held by current shareholders. *Value dilution* is defined as a reduction in the value of current shareholders' ownership interests. Dilution results from the following types of events:

- a. Future financing rounds and future share-based compensation awards cause ownership dilution (anticipated future dilution). The current shareholders will own a smaller percentage of the whole, but value dilution will depend on the value of the new shares issued relative to the proceeds raised in the future financing round or the value of the services received in exchange for the future share-based compensation. If the transaction is fair, the value received is expected to offset the ownership dilution associated with the transaction.¹⁴
- b. The current shareholders' future ownership percentage changes relative to base case expectations (changes in anticipated future dilution). If the amount raised in a future financing is assumed to be fixed, a reduction in the expected pricing of the financing round will increase ownership dilution. An increase in the expected pricing of the round will decrease ownership dilution.

¹⁴ In the case of share-based compensation awards, the value of the awards would typically be regarded as incremental to the value of the investment, not dilutive, because the price that market participants would be willing to pay for the investment would be based on the valuation considering the need to offer share-based compensation to attract talent. See Q&A 10.19, "Incorporating Stock-Based Compensation Into the Enterprise Valuation," for an example with further discussion.

A reduction in the expected pricing of a future financing round may result in anticipated value dilution or a reduction in expected value appreciation for the current shareholders.

- c. Value dilution occurs when a transaction is not priced at a level high enough to offset ownership dilution. Value dilution may arise, for example, when the company has had difficulty raising capital and the primary investors want to create an incentive for all the current investors to participate in the financing. This incentive pricing may allow the investors in the new financing to pay a discounted price to receive shares with additional downside protections or upside participation, effectively allowing the participating investors to capture a disproportionate percentage of the total equity value and diluting the shareholders who do not participate.

Anticipated Future Dilution

A.07.02 Many companies have future capital needs that are anticipated at time of the initial investment as well as at subsequent measurement dates. Companies may need future capital for various reasons, including, but not limited to, the following:

- Early-stage companies, when the company expects to experience losses before reaching break-even, but investors typically will not fund the entire amount needed up front
- Expansion stage companies, when the company is experiencing rapid growth or wants to add resources to fund rapid growth and, thus, chooses to operate at a loss, rather than keeping costs contained
- Roll-ups or acquisition strategies, when the company needs capital for making acquisitions
- More mature companies, when the company needs capital to improve operations

A.07.03 When the company is expected to need additional capital, even in the base case, the current investors expect ownership dilution to occur prior to the expected exit event. The terms of a future financing round may affect value dilution just as pricing does. All other things being equal, a new round with a senior liquidation preference is more dilutive to value than a new round with a *pari passu* liquidation preference. If priced at fair value, future financings and future awards of share-based compensation are expected to cause ownership dilution but not value dilution.

A.07.04 Regardless of the specific nature of these future issuances, they will all be dilutive in the sense that any proceeds from the ultimate sale of the company will likely be shared with these new investors. That is, for any given future aggregate equity value at an exit event, the more of these instruments that are outstanding, the lower the percentage of total exit proceeds the current investors will receive (subject to seniority rights and *liquidation preferences*).

A.07.05 When measuring the current value of existing shareholder interests, it is appropriate to adopt a methodology that considers anticipated future dilution. For example, a future exit value may be adjusted for the dilution associated with future rounds of financing. If a current sale price is estimated, it is reasonable to assume that all of the sale proceeds are distributed to the current shareholders. Estimating the value of the company's current equity interests consistent with market participant assumptions regarding the company's business plan requires incorporation of assumptions regarding the costs to fund operations, either through incorporating negative cash flows in a discounted cash flow method, or by incorporating the amounts, pricing, and timing of future capital needs.

A.07.06 A scenario analysis, by its nature, focuses on discrete future values at the time of exit, the achievement of which may be dependent upon future financing rounds and share-based awards. In such cases, the investor should consider the nature, amount, and timing of anticipated future dilution in its allocation of future exit values. Since estimating the dilution impact of future financings is challenging, it may be more appropriate to use other methods if the company will need significant additional capital to reach an exit. See paragraphs 6.26 and 6.85 for further discussion.

A.07.07 In a traditional application of the option-pricing method (OPM), future value appreciation is assumed to offset future ownership dilution, and neither is explicitly incorporated into the model. Equity value is an input to the OPM, and the estimate of equity value should consider future dilution. If the OPM is used to calibrate equity value to a recent financing round, it is assumed that the investors considered the prospect of dilution when pricing the round. Future financings may need to be considered when assessing the risk associated with the liquidation preference for the recent financing, especially if market participants would expect future financings to be senior to the recent financings and dilutive to certain classes of equity. In addition, the OPM may explicitly incorporate anticipated dilution in the following two cases:

- If a future pre-exit financing event is probable and its key terms are ascertainable, this financing can be explicitly incorporated into the OPM. (see paragraphs 6.48, 6.49(b) and 6.73 for discussion).
- Anticipated near-term (within the next 12 months) compensatory stock and stock option awards can be incorporated into the OPM (see paragraphs 6.74–.78 for discussion).

Changes to Anticipated Future Dilution

A.07.08 For purposes of the measurement of fair value at any particular date, there is no conceptual difference between the valuation models used to incorporate updates to the anticipated future dilution and the original anticipated future dilution. The current shareholders would measure fair value, including adjustments to reflect new expectations, by revising previous estimates of anticipated future dilution based on new information. As discussed herein, to the extent the new information suggests that future financing rounds may have an impact on the fair value of current investments, and the current valuation model does not incorporate such future events, the current shareholders may need to reconsider the usefulness of its model.

Impact of Share-Based Awards

A.07.09 Share-based awards come in a variety of forms, including grants of shares, grants of options exercisable into shares, or grants of profits interests. These awards generally lead to anticipated future dilution, subject to seniority rights and liquidation preferences, reducing the current shareholders' participation to the extent that the awards vest and the company's performance meets whatever strike price or other threshold is required. Analogous to the discussion herein with respect to future financing rounds, such existing and anticipated future awards should be considered in the measurement of the fair value of the current shareholders' position as of a particular date, either by measuring the equity value net of the costs of such awards and then allocating that value to the current classes of equity or by explicitly incorporating dilution in the percentage ownership. For companies with *simple capital structures*, the typical approach for incorporating the dilution impact of share-based awards is to measure the equity value as though the company were to be sold on the measurement date and then allocate the value considering the *intrinsic value* of the share-based awards.

A.07.10 This type of dilution (also suffered by existing investors) is usually unanticipated and results from the issuance of interests that are sold or granted at prices below fair value. Specific examples may include the following:

- Preferred shares with "sweeteners"
 - Liquidation preferences in excess of investment cost
 - Warrant coverage
 - Seniority provisions
- Options granted with rich terms that provide compensation that exceeds the value of expected services to be performed
- "Bundled" issuances that include both financial and nonfinancial terms

Dilution – Summary

A.07.11 It is important to distinguish between transactions that result in current dilution, when new interests are issued below fair value and result in a loss in value to the previous classes of equity, and transactions that may appear to cause current dilution but that are actually sold or granted at fair value. Although anticipated future dilution is considered to be dilutive with respect to the future ownership percentage, it typically is not dilutive in the current sense. Unanticipated future dilution reflects a loss in value relative to original expectations but has the same impact on current values as anticipated future dilution. Both unanticipated future dilution and current dilution may, in fact, be a consequence of negative developments in which the company's value has declined relative to original expectations, and the current or prospective transaction is simply confirming the decline in value.

Table of Capitalization Multiples

A.08.01 The table in paragraph A.08.03 presents the capitalization multiples for a perpetual annuity at various combinations of assumed discount rates and growth rates. The range of discount rates presented is for illustrative purposes only and is not intended to limit the range of discount rates that the valuation specialist might consider appropriate in the particular facts and circumstances of a valuation.

A.08.02 If cash flows are expected to be perpetual and equal in each period, value is determined by "capitalizing" the cash flows rather than discounting them. The present value of a perpetual annuity of \$1, assuming a discount rate of 10%, is calculated as follows:

$$\text{Present value} = \$1 / (1.10) + \$1 / (1.10)^2 + \$1 / (1.10)^3 + \dots + \$1 / (1.10)^n = \$10$$

(with n approaching infinity)

The same answer is obtained by a capitalization calculation that divides the constant perpetual cash flow by the discount rate, which is referred to here as a *capitalization rate*:

$$\text{Present value} = \$1 / 0.10 = \$10$$

A.08.03 If the cash flows are expected to grow at a constant rate, and the required rate of return for the stock remains constant, the capitalization rate is obtained by subtracting the growth rate from the discount

rate. The present value of a perpetual annuity of \$1, assuming a 1% constant growth rate and a discount rate of 10%, is calculated as follows:

$$\text{Present value} = \$1 / (0.10 - 0.01) = \$11.11$$

More generally, the formula is as follows:

$$\text{Present value} = \$1 / (\text{long-term discount rate} - \text{long-term growth rate})$$

Discount Rate	Growth Rate			
	0%	2%	5%	10%
2%	50.00			
5%	20.00	33.33		
10%	10.00	12.50	20.00	
20%	5.00	5.56	6.67	10.00
30%	3.33	3.57	4.00	5.00
40%	2.50	2.63	2.86	3.33
50%	2.00	2.08	2.22	2.50
60%	1.67	1.72	1.82	2.00
70%	1.43	1.47	1.54	1.67

A.08.04 Capitalization multiples are frequently used in calculating a *terminal value* for use in the income approach. However, because neither the growth rate nor the required rate of return for the stock is expected to remain constant, this valuation model is not ideal for estimating the terminal value for high growth companies. In many cases, the cash flows provided for an enterprise cover only the next three to five years, which is too short a time frame to bring the enterprise into the mature growth stage. Furthermore, by the time the enterprise reaches the mature growth stage, the high entity-specific risk premium or VC rate of return used in calculating the discount rate would no longer apply. Therefore, the task force encourages the valuation specialist to consider a variety of methods for estimating the terminal value, and to select the most appropriate based on reasoned judgment.

A.08.05 One approach to address this challenge is to extend the forecast period beyond the typical three to five years. By doing so, the valuation can better capture the transition from high growth to mature growth, providing a more accurate reflection of the company's long-term potential. This extended forecast allows for a gradual adjustment of growth rates and discount rates, aligning more closely with the company's evolving risk profile.

A.08.06 Another approach to consider is the H model, which assumes that the growth rate will gradually decline over a specified period, eventually stabilizing at a long-term growth rate. Similar to extending the forecast, this approach provides a more nuanced and realistic estimation of terminal value by accounting for the gradual transition from high growth to stable growth and allows for the simplicity of incorporating this assumption into a single formula. One limitation of the H model is that it may lack the flexibility needed to adapt to specific situations since it assumes a linear decline from the initial high growth rate to the terminal growth rate. Additionally, the H model assumes that the discount rate is constant over the high growth and terminal period. The H model formula is given by:

$$P_0 = [D_0 * (1 + g_2) + D_0 * H * (g_1 - g_2)] / (r - g_2)$$

where:

P_0 = stock's fair value at year 0

D_0 = most recent dividend payment (annual net cash flow can be substituted for the dividend payment)

g_1 = initial high growth rate

g_2 = terminal growth rate

r = discount rate

H = half-life of the high growth period

A.08.07 In conclusion, while capitalization multiples are a common tool for calculating terminal value, they may not be suitable for high growth companies that have dynamic growth and changing risk over time. Extending the forecast period and utilizing the H model are viable approaches that can provide a more accurate estimate of terminal value for these companies.

Derivation of the Weighted Average Cost of Capital

A.09.01 The formula used to calculate *weighted average cost of capital (WACC)*, together with an explanation of the variables used, is as follows:

$$WACC = k_E \times (E / (E + D)) + k_D \times (1 - T_C) \times (D / (E + D)), \text{ where}$$

$$k_E = r_f + \beta(r_m) + P + CSR_P$$

Cost of equity capital (k_E). The cost of equity capital is the return required by shareholders.

Risk-free rate (r_f). The risk-free rate is the return on government securities with a term similar to that of the investment being evaluated.

Market risk premium ($MRP = r_m$). The MRP, also known as the equity risk premium, is the additional rate of return over the risk-free rate that is expected by investors from investments with systematic risk equal to the "market" portfolio. The "market" portfolio may be thought of as a broadly diversified investment portfolio, often thought of as the return on an index such as the Standard and Poor's 500.

Relevered beta (β). Relevered beta is a measure of the risk of an entity's stock relative to the risk of a diversified portfolio (the MRP). The theory and application of beta as a modifier of the MRP are well documented and widely accepted, and there are many available sources of beta. Because the estimation procedure is not controversial, those sources normally may be relied on.

Size premium (P). Research has shown that small enterprises have larger betas than large enterprises. An adjustment for size is included in the calculation of WACC because small stocks outperform large stocks, even after adjusting for the systematic risk (beta) of small stocks. This phenomenon is widely known as the size effect.

Company-Specific Risk Premium (CSRP). The company-specific risk premium is commonly used in situations when the specific risk associated with the company is not sufficiently captured by MRP, beta, and size premium. Some of the risks that CSRP adjusts for include considerations such as management depth and expertise, product line diversification, geographic diversification, or projection risk in excess of market participant assumptions.

Cost of debt (k_D). The cost of debt is the return required by lenders. The cost of debt is taken after tax because entities can deduct from their pretax profits the interest they pay on the money they borrow.

Income tax rate (T_C). The income tax rate for each entity is used to calculate the after-tax cost of debt.

Market value of equity and debt (E and D, respectively). The market value of equity and debt are used to weight the cost of equity and cost of debt in arriving at the overall WACC. Although the market value of common equity is commonly used in the calculation, the carrying value of debt is often used as a proxy for the market value of debt in the WACC calculation, unless the difference between the market value and the carrying value is significant.

A.09.02 WACC is frequently used in the DCF method as an estimate of the rate of return or discount rate that market participants would require to acquire the cash flows for an enterprise, as discussed in paragraphs 3.59–.62.

A.09.03 When the purpose of a valuation is to estimate the fair value of the enterprise as a whole, assuming a change of control for the enterprise on the valuation date, WACC used in the DCF method should reflect market participant assumptions regarding the leverage of the enterprise. That is, it can be assumed that a market participant acquiring the enterprise would put into place a capital structure that is more typical for the industry, irrespective of the actual capital structure in place at the time of the transaction.

A.09.04 Because the objective of this guide is to provide guidance on valuation of privately-held-company equity securities underlying stock-based compensation awards, the relevant cash flows are those expected by the holders of the security, not the cash flows of the enterprise as a whole. Thus, in theory, over the time horizon of the capital structure, WACC should be calculated based upon the actual capital structure of the enterprise, not a hypothetical third-party capital structure, through the expected liquidity event, if any. The cost of capital may change following a liquidity event.

A.09.05 Under certain assumptions, the Modigliani and Miller theorem¹⁵ shows that WACC for an enterprise is independent of capital structure. That is, even though the cost of debt is lower than the cost of equity, higher leverage increases both the cost of debt and cost of equity such that the overall cost of capital remains unchanged. When these assumptions are relaxed to include the tax benefits of debt (which decrease the cost of capital for levered companies) and bankruptcy costs and agency costs related to suboptimal risk management (which increase the cost of capital for levered companies), WACC can be modeled as a wide U-shaped curve that remains relatively constant across a range of capital structures but increases at the extremes. Therefore, it is most important to consider company-specific WACC for

¹⁵ Franco Modigliani and Merton H. Miller, "The Cost of Capital, Corporation Finance and the Theory of Investment," *The American Economic Review* 48, no. 3 (1958): 261–97, www.jstor.org/stable/1809766.

Franco Modigliani and Merton H. Miller, "Corporate Income Taxes and the Cost of Capital: A Correction," *The American Economic Review* 53, no. 3 (1963): 433–43, www.jstor.org/stable/1809167.

companies with leverage that differs significantly from industry norms.¹⁶ In addition, in situations where the investors' interests are aligned or when valuing a security in a venture capital or private equity-backed entity, most market participants will consider the overall WACC using a normalized (third party) capital structure, assuming that any benefits that may accrue from higher leverage would inure to the investors as a higher rate of return for equity (cost of equity). See paragraphs 5.05–.08 and Q&A 10.27, “Company-Specific Assumptions,” for additional discussion.

Estimating Differential Discount Rates Depending on the Risk for Each Security Using CAPM

A.10.01 Within a scenario analysis framework where the payoffs are measured based on real-world expected outcomes rather than being measured in a risk-neutral framework, the appropriate discount rate will vary based on the risk of each security. In particular, more junior securities require higher discount rates.

A.10.02 In the example shown in paragraph 6.33, the discount rate for the Class D stock was calibrated to the recent purchase price of \$10. The CAPM framework can then be used to estimate the beta and the company specific risk premium (CSRP) that calibrate to this discount rate, given market assumptions for the risk-free rate, equity risk premium (ERP), market volatility and correlation with the market. Using iterative calculations, the valuation specialist can calculate the beta for each class of equity by multiplying the Class D beta by the ratio of the volatilities for each class to the Class D volatility. The betas for each class are then used to calculate the discount rate for each class.

A.10.03 Example

Step 1: Calibrate the implied discount rate for the Class D, based on selected scenarios, weights, and expected term:

Future Scenarios	Weight	Time (years)	Class D Payoff (per share)
Short term IPO	25%	0.75	15.00
Delayed IPO	25%	1.50	12.50
Wait -- downside	25%	3.00	4.21
Wait -- upside	25%	3.00	30.00
Purchase price			10.00
Calibrated discount rate (annual)			23.6%

¹⁶ In particular, for highly levered companies in which the fair value of debt is significantly less than par, reflecting a high market rate of return for the debt, the valuation specialist should consider whether this high cost of debt and corresponding cost of equity is appropriately captured in the weighted average cost of capital used in the overall enterprise valuation, or alternatively, consider the negotiated value of debt for the purpose of valuing equity, before concluding on the fair value of equity.

Step 2: Use CAPM to calibrate implied CSRP and Beta:

Calibrated discount rate	23.6%
Risk-free rate	1.5%
Equity risk premium	5.5%
Implied CSRP	17.1%

Correlation with market	50.0%
Market volatility	17.0%
ERP x Beta	5.0%
Implied beta	0.91

Step 3: Using iterative calculations, calibrate the implied volatility and beta for all subsequent classes. Betas would be calculated by multiplying the Class D beta by the ratio of the implied volatility by class to the Series D volatility:

	Class D	Class C	Class B	Class A	Common
Calibrated discount rate	23.6%	25.9%	27.6%	29.3%	32.7%
Risk-free rate	1.5%	1.5%	1.5%	1.5%	1.5%
Equity risk premium	5.5%	5.5%	5.5%	5.5%	5.5%
Implied CSRP	17.1%	17.1%	17.1%	17.1%	17.1%
Calculated volatility	31.0%	45.0%	55.4%	65.8%	87.3%
Correlation with market	50.0%	50.0%	50.0%	50.0%	50.0%
Market volatility	17.0%	17.0%	17.0%	17.0%	17.0%
ERP x Beta	5.0%	7.3%	9.0%	10.6%	14.1%
Implied beta	0.91	1.32	1.63	1.94	2.57
Discount rate from CAPM	23.6%	25.9%	27.6%	29.3%	32.7%

Estimating Volatility for Privately-Held Companies

A.11.01 One of the key assumptions for valuing private company securities in a complex capital structure and for valuing stock options or other option-like instruments is volatility. Volatility (standard deviation) reflects the range of the expected distribution of outcomes – a higher volatility indicates both higher downside risk and higher potential upside.

A.11.02 Since volatility for private companies is not observable, the estimated volatility for private companies is typically based on the observed volatilities for guideline public companies. For early-stage companies, it is likely that the guideline public companies will be larger, more profitable, and more diversified; therefore, the appropriate volatility may be best represented by the higher end of the range of the guideline public companies, especially for shorter time frames, migrating toward the median of small public companies over the longer term. If no direct competitors are small, high-growth companies, best practice would be to use a set of smaller companies from the broader industry to estimate the

volatility, or to adjust the volatility to reflect the size of the company relative to the selected guideline companies, or both. It may also be appropriate to apply adjustments to the volatility if there are other differences in risk between the company and the guideline public companies that are not otherwise captured – for example, it is possible to estimate a volatility corresponding to a given weighted average cost of capital or venture capital rate of return by backing into an implied beta. For further discussion, see paragraph 5.2.4.4 “Adjusting Volatility for Additional Risk Premiums” in the Appraisal Foundation’s Valuations in Financial Reporting (VFR) Valuation Advisory #4: *Valuation of Contingent Consideration*.

A.11.03 One approach for making size adjustments is to consider the median asset volatilities for companies in a given industry by size decile, similar to the approach used for estimating small stock risk premiums. The following example analysis shows that for many industries, the ratio of the median asset volatility for the smallest companies is more than two times higher than the median volatility for the largest companies.¹⁷

	Communication Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Pharmaceuticals, Biotechnology and Life Sciences	Health Care Equipment and Services	Industrials	Information Technology	Materials	Real Estate	Utilities	All Industries
Ratio	2.3	1.9	2.4	2.4	1.5	3.8	2.7	3.0	1.5	2.7	1.5	2.7	3.1

Median Decile Volatilities	Communication Services	Consumer Discretionary	Consumer Staples	Energy	Financials	Pharmaceuticals, Biotechnology and Life Sciences	Health Care Equipment and Services	Industrials	Information Technology	Materials	Real Estate	Utilities	All Industries
Size Decile 1	28.1%	33.9%	19.7%	37.3%	25.3%	29.2%	26.6%	26.7%	38.1%	30.6%	24.5%	15.9%	27.1%
Size Decile 2	27.4%	38.2%	22.9%	50.9%	26.5%	50.2%	26.4%	29.1%	40.1%	26.5%	23.7%	14.6%	28.8%
Size Decile 3	27.5%	39.2%	21.6%	47.5%	27.1%	69.9%	38.2%	30.2%	43.1%	26.1%	24.8%	16.5%	31.3%
Size Decile 4	30.3%	38.9%	28.5%	55.4%	27.5%	69.1%	37.8%	33.6%	41.8%	34.8%	24.5%	15.2%	34.2%
Size Decile 5	24.4%	41.3%	33.9%	49.1%	31.6%	76.5%	51.0%	34.8%	40.3%	27.6%	22.5%	15.6%	36.3%
Size Decile 6	28.7%	42.6%	26.8%	57.1%	29.6%	74.1%	52.8%	35.2%	46.8%	37.4%	29.8%	16.1%	37.0%
Size Decile 7	58.9%	46.4%	32.6%	52.2%	30.8%	88.6%	42.5%	36.3%	48.6%	34.9%	25.9%	18.9%	43.0%
Size Decile 8	39.2%	52.9%	35.4%	60.3%	28.9%	83.3%	57.1%	41.8%	63.2%	46.2%	23.0%	21.8%	47.7%
Size Decile 9	52.6%	52.2%	31.9%	67.0%	31.1%	98.3%	62.5%	43.8%	57.6%	42.5%	26.1%	25.0%	51.3%
Size Decile 10a	54.7%	57.2%	37.3%	57.0%	29.8%	104.2%	65.0%	51.3%	53.7%	65.3%	22.8%	27.4%	56.1%
Size Decile 10b	63.5%	63.5%	46.5%	89.8%	37.7%	112.0%	72.1%	80.3%	58.0%	82.6%	36.8%	42.4%	84.4%

A.11.04 To apply the size adjustment for a specific company, it would be appropriate to select representative guideline public companies that have similar business characteristics – for example, specialty chemicals or agricultural chemicals may have a different risk profile than steel or gold or copper, even though all these subcategories fall within the Materials category. The observed volatility for each guideline public company would be multiplied by the ratio of the median volatility of the public companies in the same size decile as the subject company to the median volatility of the public companies in the same size decile as the selected guideline public company. The following table shows an example for a company with a \$70 million equity value in the Materials industry:

¹⁷ This example was created by estimating the historical asset volatilities for the constituents of the Russell 3000 Index, considering a given lookback period at a specific valuation date, and then calculating the median volatility for the companies that fell within each decile in each industry. This example is not intended to be used to calculate size ratios as of other valuation dates. Note that it would not be appropriate to estimate size ratios by aggregating the market caps for the public companies in a given industry and decile and calculating the volatility for the aggregate value (like an index), since that would reflect the volatility of a diversified portfolio, rather than the representative volatility for an individual company within each category. It also would not be appropriate to exclude newer companies or less stable companies if the goal is to estimate the volatility for private companies at earlier stages of development.

Company	Total Equity (SMM)	Total Debt (SMM)	Total Invested Capital (SMM)	Industry	Decile	Decile Volatility	Adjustment Factor [1]	Calculated Asset Volatility [2]	Adjusted Volatility [3]=[1]*[2]
GPC A	2,758	146	2,904	Materials	6	37.4%	2.208	54.5%	120.4%
GPC B	3,283	172	3,455	Materials	6	37.4%	2.208	54.8%	121.0%
GPC C	3,649	9	3,658	Materials	6	37.4%	2.208	91.2%	201.4%
GPC D	5,436	694	6,130	Materials	5	27.6%	2.993	50.4%	151.0%
GPC E	6,323	1,200	7,524	Materials	4	34.8%	2.376	36.7%	87.1%
GPC F	6,900	2,174	9,074	Materials	4	34.8%	2.376	46.0%	109.2%
GPC G	7,318	3,689	11,007	Materials	3	26.1%	3.161	47.6%	150.6%
GPC H	8,499	4,241	12,740	Materials	3	26.1%	3.161	47.5%	150.1%
GPC I	16,401	1,143	17,544	Materials	2	26.5%	3.111	31.2%	97.1%
GPC J	20,349	3,038	23,387	Materials	2	26.5%	3.111	39.4%	122.5%
Subject Company	70	0	70	Materials	10b	82.6%			
								Concluded Volatility (Median)	121.8%

A.11.05 Another factor to consider when estimating volatility is the effect of the company's leverage. Although many early-stage firms have limited debt, if any, later-stage firms or those acquired in a leveraged buyout may have significant debt financing, the effect of which can be to significantly increase the volatility of the firm's equity. For example, in a company with 75% debt, if the value of the company doubles, the value of equity increases by a factor of five.

A.11.06 The general relationship between equity value and asset value can be expressed as follows:

$$\text{Equity Value} = \text{Total Asset Value} \times N(d1) - \text{Book Value of Debt} \times \exp(-rT) \times N(d2)$$

In this equation, r is the risk-free rate, T is the expected term of the debt, and $d1$ and $d2$ have their standard Black-Scholes definitions based on the asset's volatility. The expected term of the debt for the guideline public companies should typically be measured based on the weighted average time to maturity for the debt, but for the subject company, the expected term of the debt may be based on the expected time to liquidity if the debt is expected to be repaid at the liquidity event.

In addition, the relationship between equity volatility and asset volatility can be written as follows:

$$\text{Equity Volatility} = (\text{Total Asset Value} \times N(d1) \times \text{Asset Volatility}) / \text{Total Equity Value}$$

In a highly-levered company, it is possible to solve for an asset volatility and equity volatility that satisfy both equations by treating the total asset value as the implied value of assets, given the company's leverage. This approach results in estimates of asset volatility that are internally consistent and better match market data.¹⁸

A.11.07 In the scenario-based method, the volatility of the outcomes is not used as an input, but rather may be inferred from the distribution of equity values across the various scenarios. The normalized volatility for a specified set of scenarios may be calculated as the square root of the variance:

$$\text{Variance} = \frac{\text{Sum (Scenario weight} \times (\text{Return for each Scenario} / \text{Term}^{0.5} - \text{Mean Return across all scenarios})^2)}{\text{Mean Return}}$$

To allow for comparability when the times to exit vary across scenarios, the value for each scenario and mean value should consider the present value (using an appropriate overall discount rate for the security)

¹⁸ Stanislava M. Nikolova, "The Informational Content and Accuracy of Implied Asset Volatility as a Measure of Total Firm Risk" (research paper, 2003), www.textbiz.org/projects/defaultprediction/assetvolatilitypdf.pdf.

and the term should be measured as the weighted average term across the scenarios. Please see paragraph A.10.03 for an example.

A.11.08 For many enterprises, the distribution of future outcomes is not smoothly lognormal, but instead is multimodal, with jumps upon reaching (or failing to reach) key milestones. For example, for pre-commercial biotech companies, the value of the enterprise will jump (or fall significantly) based on progress through clinical trials. For these types of enterprises, it may be more appropriate to use a hybrid model as discussed in paragraphs 6.86–95. To approximate such a distribution with a single lognormal framework, the volatility would need to consider the impact of the jumps.

A.11.09 Suppose that the subject company has a chance of success $p_u = 70\%$ and a $p_d = 30\%$ chance of failing to achieve its next key milestone. Further, suppose that if the milestone is not met, the company value will fall by 90%, so the change in value would be $J_d = 0.10$. The current value equals 70% * value contingent on success + 30% * value contingent on failure, therefore the change in value contingent on success equals $J_u = (1 - p_d J_d) / p_u = (1 - 0.3 \times 0.10) / 0.7 = 1.39$. The volatility within each scenario is 50% for an expected term of $T = 1$ years. Then the overall volatility is approximately equal to 130%, calculated using the following formula:

$$\sigma_{ann}(T) = \sqrt{\sigma^2 + \frac{Var(\ln J)}{T}} = \sqrt{(50\%)^2 + 145\%/1} = 130\%$$

$$\begin{aligned} Var(\ln J) &= p_u (\ln J_u)^2 + p_d (\ln J_d)^2 - (p_u \ln J_u + p_d \ln J_d)^2 \\ &= 0.70 (\ln 1.39)^2 + 0.30 (\ln 0.10)^2 - (0.70 \ln 1.39 + 0.30 \ln 0.10)^2 \end{aligned}$$

Models Used in Calculating Discounts for Lack of Marketability

A.12.01 As discussed in [chapter 7](#), a discount for lack of marketability may apply to certain securities in an enterprise in certain circumstances. If a discount for lack of marketability would be applicable in valuing the security underlying the stock-based compensation awards, a number of factors may be considered in estimating the size of such a discount. For example, these include the following:

- Prospects for liquidity (that is, expectations of a market in the future. The greater the prospects, the lower the discount would tend to be).
- Number, extent, and terms of existing contractual or customary arrangements requiring the enterprise to purchase or sell its equity securities. Impact on the size and direction of any marketability adjustment will vary, depending on the nature of the arrangements.
- Pool of potential buyers. The larger the pool, the lower the discount would tend to be (for example, if there is a robust secondary market for the securities).
- Risk or volatility. The lower the perceived risk of the securities or the lower the volatility of the value of the securities, the lower the discount would tend to be.
- Size and timing of distributions. The greater the amount of dividends paid to the securities, the lower the discount would tend to be (typically not a factor for early-stage enterprises but possibly a factor for more mature enterprises).

A.12.02 One source of empirical data that can be helpful in understanding the nature of the potential adjustment attributable to a lack of marketability is transactions in the restricted stock of publicly traded companies. *Restricted stock* is the stock of a public company that is identical in all aspects to the freely traded stock of the company, except that it is restricted from trading on the open market for a certain period of time. The duration of the restrictions varies, but most restrictions typically lapse after 12 months, or 24 months in older studies. The median discount observed in these studies ranges from 13% to 45%.¹⁹ The factors that appear to be most significantly correlated with observed discounts in restricted stock transactions are the underlying volatility of the stock, the restriction period of the stock in the transactions, and the size of the block being sold as a percentage of shares outstanding. Note that when using the observed data to infer the relationship between the discount and these factors, it is appropriate to consider all the factors that market participants considered when pricing the restricted stock; however, when applying discounts in estimating fair value, incorporating blockage discounts or discounts associated with contractual restrictions is not permitted by the guidance in FASB ASC 820-10-35-36B. The task force does not endorse applying discounts for lack of marketability based solely on references to studies; rather, each situation should be evaluated based on its individual facts and circumstances.

A.12.03 Another set of empirical data that is used to estimate implied discounts for lack of marketability is the price a stock exhibited in private transactions prior to an IPO when compared to the publicly traded price subsequent to the public offering. Studies using this data have indicated an average downward adjustment of between 21% and 66% from 1980 to 2002.²⁰ However, because only successful IPOs are tracked in the study, this data may reflect a sample bias. Furthermore, because much of the underlying "transaction" data is based on stock option grants rather than actual sales of stock, the data may not accurately reflect arm's-length prices. Finally, even the most recent studies are based on transactions and IPOs that are at least several years old. Therefore, reliance on these studies has diminished in current valuation practice. Furthermore, as noted previously, when applying discounts for lack of marketability, it is important to evaluate individual facts and circumstances and not rely solely on references to studies.

A.12.04 Several quantitative methods have been developed to estimate the discount for lack of marketability for privately held securities. The following list contains descriptions of the three foundational methods:

- a. *Protective put*.²¹ The protective put method for estimating a discount for lack of marketability was first described by David Chaffe in 1993, and it serves as the foundation for other option-based methods. In this method, the discount is estimated as the value of an at-the-money put with a life equal to the period of the restriction (see paragraph A.12.08 for a discussion regarding the duration of the restriction), divided by the marketable stock value. Thus, the estimated discount depends on the volatility, as a measure of risk, and the duration of the restriction. Intuitively, by purchasing an at-the-money put option, the buyer guarantees a price at least equal to today's

¹⁹ Independent studies of restricted stock transactions are reported in Shannon P. Pratt's *Valuing a Business: The Analysis and Appraisal of Closely Held Companies*, 5th ed. (New York: McGraw-Hill, 2007), and Shannon P. Pratt's *Business Valuation Discounts and Premiums* (Hoboken, NJ: John Wiley & Sons, Inc., 2009). Additional articles on the restricted stock studies are found in the September 2001, December 2001, and December 2002 editions of *Business Valuation Review*.

²⁰ Sarin, Atulya and Das, Sanjiv Ranjan and Jagannathan, Murali, The Private Equity Discount: An Empirical Examination of the Exit of Venture Backed Companies (January 22, 2002). Available at SSRN: <https://ssrn.com/abstract=298083> or <http://dx.doi.org/10.2139/ssrn.298083>.

²¹ David A. Chaffe, "Option Pricing as a Proxy for Discount for Lack of Marketability in Private Company Valuations," *Business Valuation Review* 12 (December 1993): 182-88.

stock price, thus creating liquidity. However, as Aswath Damodaran points out, "liquidity does not give you the right to sell a stock at today's market price anytime over the next 2 years. What it does give you is the right to sell at the prevailing market price anytime over the next 2 years."²² In practice, because it is not possible to hedge illiquid securities, the protective put method should not be considered to represent an actual transaction but rather, to represent a reasonable regression-based fit to the discounts observed in restricted stock data. To validate the model, Chaffe evaluated the results by calculating the discounts for volatilities in a range of 60% to 90%.²³ For a holding period of two years and volatilities of 60% to 90%, the protective put method gives discounts comparable to those cited in restricted stock studies. As discussed in paragraph A.12.09, this method may overstate the discount for lack of marketability that would be applicable to the security underlying the stock-based compensation awards.

- b. *Longstaff*.²⁴ In 1995, Francis Longstaff published an article in the *Journal of Finance* that describes an upper bound on the discount for lack of marketability based on a "look back" option. Intuitively, in a liquid security, an investor with perfect market timing ability would sell the security when the value is highest. Longstaff also correlated his results to restricted stock studies using a volatility input of 10% for low volatility companies and 30% for high volatility companies. The Longstaff model provides a wide upper bound because an average investor will possess imperfect market timing ability; therefore, the investor is unlikely to attain the maximum value of the securities. Thus, the task force believes it is generally not a reasonable method for estimating discounts when used with observed market volatilities because the upper bounds do not correlate well with observed market discounts and, in fact, rise in excess of 100% for high volatility securities with long restriction periods.
- c. *Quantitative marketability discount model (QMDM)*.²⁵ The QMDM, developed by Chris Mercer, is an income approach technique for estimating discounts for lack of marketability that assumes that investors in illiquid securities require higher rates of return than investors in liquid securities. The discounts derived from the QMDM are driven by the inputs to the model; thus, there is no typical range of discounts observed using this model. The QMDM is conceptually appealing since it directly captures the impact of assuming that investors in less marketable securities require an incremental rate of return; however, selecting an appropriate incremental rate of return may be challenging. In addition, because the discounts estimated by QMDM increase approximately linearly with time, caution should be exercised in applying QMDM when long holding periods are assumed.

A.12.05 Because the protective put method does not adjust discounts to account for the impact of blockage, the Longstaff method reflects a wide upper bound and generally does not provide a reasonable estimate for the discount for lack of marketability, and the QMDM incremental discount rates may be challenging

²² Aswath Damodaran, "Marketability and Value: Measuring the Illiquidity Discount," *Stern School of Business* (July 2005): 41.

²³ The majority of companies have volatilities in the 30% to 50% range. Companies with volatilities of 60% to 90% or higher tend to be smaller, less diversified portfolio companies or in riskier industries, such as high tech and biotech. Highly levered companies or the common stock in companies with high *liquidation preferences* will also have high volatilities, often exceeding 100%.

²⁴ Francis A. Longstaff, "How Much Can Marketability Affect Security Values," *The Journal of Finance* 50 (December 1995): 1767–74.

²⁵ Z. Christopher Mercer and Travis W. Harms, *Business Valuation: An Integrated Theory*, 2nd ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2008).

to support, the most widely accepted methods for estimating discounts for lack of marketability for the security underlying stock-based compensation awards in privately held companies are variants of the protective put, of which the most popular are the Finnerty method and the Asian protective put method²⁶:

- a. *Finnerty (2012)*.²⁷ Building on these previous models in 2001 (with subsequent updates), John Finnerty proposed a model that assumes the investor does not possess special market timing ability and would be equally likely to exercise the hypothetical liquid security at any given point of time. The value of marketability is modeled as the present value of cash flows, similar to an average-strike put option. The Finnerty method addresses the issue of assuming perfect market timing in the Longstaff method and the issue of assuming protection on the downside while still realizing appreciation on the upside in the protective put method. Finnerty also performed a regression analysis to restricted stock studies, adjusting to remove other significant factors such as concentration of ownership and information effects, and found that after isolating the marketability-related factors, the discounts predicted by his method are consistent with the data. As with other option-based methods, the estimated discount depends on the volatility, as a measure of risk, and the duration of the restriction. For a given volatility, the discounts in the Finnerty model increase roughly proportionately to the square root of the duration of the restriction, which provides a useful proxy for calibrating to an observed discount from a transaction.

²⁶ The 2013 version of this guide also presented the Differential Put as a possible methodology for estimating the discount for lack of marketability attributable to common stock, given the difference in volatility relative to the preferred stock. This method had not been published elsewhere and the guide indicated that further research was needed. Subsequent to the publication of the 2013 guide, an issue was identified where the Differential Put method indicates that the discount for lack of marketability actually *increases* with decreasing time to liquidity, all else equal. Furthermore, in conversations with PE/VC investors when working on the 2019 AICPA Guide, *Valuation of Portfolio Company Investments of Venture Capital and Private Equity Funds and Other Investment Companies*, the PE/VC task force observed that although PE/VC investments are illiquid, this illiquidity is part of the business model and is not something that the investors would consider as a separate discount. Thus, it is most appropriate to consider the preferred stock held by the investors who in aggregate have control of the business on a marketable basis, consistent with the overall valuation of the business. Given these factors, the task force has removed the Differential Put from the guide. Instead, the task force recommends using the Asian put or Finnerty methods to indicate the discount for lack of marketability for classes such as common stock that do not have the information rights and control features that investors typically expect.

²⁷ John D. Finnerty, "An Average-Strike Put Option Model of the Marketability Discount," *The Journal of Derivatives* 19 (Summer 2012): 53–69. Note that previous versions of this paper include an error in the formula for the discount and should not be relied upon. Also, note that in 2025, Finnerty published an approach for estimating long-term DLOMs in: Finnerty, John D., "The Discount for Lack of Marketability Term Structure," *The Journal of Financial Research*, February 06, 2025, <https://doi.org/10.1111/jfir.12457>.

The task force noted that this analysis relied on data comparing IPO prices with pre-IPO transactions over up to 10 years prior to the IPO. To capture the incremental discount for private companies, Finnerty discounted the IPO prices at a discount rate based on the observed rates of return for small public companies and compared with the pre-IPO prices. This approach is more akin to the VC rates of return studies discussed in paragraphs A.04.01-.05, rather than reflecting a discount for lack of marketability applicable to common stock relative to preferred stock. Therefore, the task force believes that it would not be an appropriate methodology for estimating DLOMs as applied in this guide.

- b. *Asian protective put (Ghaidarov method).*²⁸ The Asian protective put is a variant of the protective put method that estimates the discount based on the average price over the restriction period rather than based on the final price. This method is conceptually similar to the Finnerty method but is estimated as an average price Asian put (which measures the difference between the current price and average price over the holding period) rather than an average-strike Asian put (which measures the difference between the average price over the holding period and the final price). As with other option-based methods, the estimated discount depends on the volatility, as a measure of risk, and the duration of the restriction. The discounts predicted by this method are uniformly lower than those for the protective put (using a 0% risk-free rate) and are higher than the Finnerty method for high volatility stocks.

A.12.06 Estimating a discount for lack of marketability is challenging, and none of these methods is completely satisfactory in all respects. All put-based methods share the conceptual shortcoming that purchasing a put is not equivalent to purchasing marketability alone because it also limits the downside risk while leaving the upside potential. That is, these methods focus on the cost of buying a put without capturing the fact that to lock in today's price, the security holder would also have to sell a call. If it were feasible to hedge the nonmarketable security, a more appropriate hedge might be to sell a forward contract, which might imply a discount for lack of marketability closer to the risk-free rate.²⁹ In addition, none of the models consider that even with such a hedge, the security may still be illiquid. The strength of these put-based methods is that they appropriately capture the relationship between the duration of the restriction (time) and risk (volatility), and they have been correlated with the limited observable market data.

A.12.07 A key input into all these methods is the volatility of the security. In cases in which the senior classes of equity are entitled to a liquidation preference before the junior classes of equity begin participating, the junior classes of equity are more leveraged and, hence, have higher volatility than the overall equity volatility. Following Merton's formulation, the relationship between equity volatility and asset volatility can be written as follows:

$$\text{Equity Volatility} = \text{Asset Volatility} \times (\text{Asset Value} \times N(d1)) / \text{Equity Value}$$

²⁸ The Asian put is one method described in the following paper:

- Stilian Ghaidarov, "Analysis and Critique of the Average Strike Put Option Marketability Discount Model," (September 2009).

Note that Ghaidarov recommended omitting risk-free rate from these calculations, since the expected risk-neutral drift rate for the stock equals the risk-free rate, and therefore, a market participant could realize the same risk-free expected return either by holding the stock or by reinvesting the proceeds from a sale.

In addition, the following papers provide an explanation of Levy's method for approximating the Asian put discount in closed form and an overview of the Asian put more generally:

- David LeRay, "Efficient Pricing of an Asian Put Option Using Stiff ODE Methods" (master's project, Worcester [Mass.] Polytechnic Institute, May 2007).
- John C. Hull, *Options, Futures and Other Derivatives*, 7th ed. (Upper Saddle River, NJ: Pearson Prentice Hall, 2009), 556–58.

²⁹ Empirically, observed discounts for lack of marketability are higher than the risk-free rate, so the fact that it is not feasible to hedge a nonmarketable security suggests that a forward contract is generally not the right model for these discounts.

Therefore, the volatility for each class of equity³⁰ is estimated as follows:

Class Volatility = Equity Volatility $\times$ (Equity Value $\times$ Class N(d1)) / Class Value, where

Class N(d1) = Sum (Incremental N(d1) Value by Breakpoint $\times$ Class Allocation by Breakpoint)

For example, in a situation with one class of convertible preferred stock with a liquidation preference of \$20 million and 40% ownership on an as-converted basis

Common N(d1) = 100% $\times$ (N(d1 @ \$20 million) - N(d1 @ \$50 million)) + 60% $\times$ (N(d1 @ 50 million))

It would typically be appropriate to use the levered volatility for each class of securities in estimating the discount for lack of marketability for that class, considering the impact of leverage given the structure of the expected future outcomes.

A.12.08 Another key input to all of these models is the duration of the restriction. The duration of the restriction is the period that the security would be in a position of more risk – typically modeled as the expected time to liquidity. In a scenario analysis or hybrid method, it would be appropriate to estimate the discount for lack of marketability considering the volatility and time to liquidity within each scenario. Note that if there is a near-term dissolution scenario, the discount for lack of marketability within that scenario is irrelevant, because the value of the common stock is typically zero in that scenario anyway; therefore, the overall expected restriction period would reflect the expected term to a successful exit. However, using a shorter term to exit in a single scenario model such as the OPM and a longer period for the discount for lack of marketability is likely not supportable. Specifically, if there is a high probability of a near term dissolution, then to capture the overall equity value, the value in the upside scenario needs to be higher, and a single overall OPM will not properly model the distribution of outcomes. In such a situation, it is likely better to use a hybrid method.

A.12.09 Because the data used in Chaffe's analysis was not adjusted for effects unrelated to marketability, such as concentration of ownership and information access, discounts estimated using the protective put method may be regarded as capturing the discount applicable to both lack of marketability as well as blockage or other factors.³¹ Other put-based methods, such as the Finnerty method and Asian protective put method, attempt to isolate the "pure" discount for lack of marketability, which may be regarded as incremental to the degree of illiquidity for the controlling investors' securities.

A.12.10 When valuing options or profits interests on a non-marketable basis, there are two equivalent ways to think about the discount for lack of marketability that unfortunately may have different impacts on the concluded value. To demonstrate these two ways of applying the discount for lack of marketability, consider a company has a simple capital structure with investors purchasing common units at \$10 and then issuing options or profits interests to the executives with a \$10 strike price or \$10 participation threshold. Furthermore, suppose that the expected volatility for the common units is 50% and the expected time to liquidity is 4 years. The volatility for the options or profits interests after adjusting for the leverage from the strike price is 87%. In this structure, the options or profits interests may be valued

³⁰ Neil J. Beaton, Stillian Ghaidarov, and William Brigida, "Option Pricing Model," *Valuation Strategies*, November–December 2009.

³¹ While blockage is one of the adjustments that is often considered in some valuation analyses, it is not permitted in a fair value measurement for financial reporting purposes. This is because the blockage is a function of the size of the position rather than a characteristic of the asset itself and such adjustments are specifically prohibited in FASB ASC 820-10-35-36B.

on a non-marketable basis by applying the discount for lack of marketability to the common units and considering the non-marketable value of the common units as the underlying, or by considering the marketable value of the common units as the underlying and then applying a discount for lack of marketability to the indicated marketable value of the options or profits interests, as follows:

	Finnerty (2012)		Ghaidarov Asian Protective Put	
	DLOM on Common	DLOM on Options / Profits Interests	DLOM on Common	DLOM on Options / Profits Interests
Common (marketable)	\$10.00	\$10.00	\$10.00	\$10.00
Common volatility	50.0%	50.0%	50.0%	50.0%
Common DLOM	20.9%	n/a	23.7%	n/a
Common (non-marketable)	\$7.91	n/a	\$7.63	n/a
Strike price or participation threshold	\$10.00	\$10.00	\$10.00	\$10.00
Option or Profits Interests value (marketable)	n/a	\$4.02	n/a	\$4.02
Option or Profits Interests volatility	n/a	87.0%	n/a	87.0%
Option or Profits Interests DLOM	n/a	29.6%	n/a	43.0%
Option or Profits Interests value (non-marketable)	\$2.61	\$2.83	\$2.31	\$2.29

Because the Finnerty method is relatively insensitive to volatility, the concluded value for the options or profits interests when applying the discount for lack of marketability to the underlying is lower than the concluded value when applying the discount for lack of marketability to the options or profits interests directly. The Ghaidarov Asian protective put method is more sensitive to volatility and applying the discount for lack of marketability to the options or profits interests results in a lower value.

Glossary

This glossary contains terms from the following sources when indicated:

- *International Glossary of Business Valuation Terms* (IGBVT), which has been adopted by a number of professional societies and organizations, including the AICPA
- FASB *Accounting Standards Codification* (ASC)
- VS section 100, *Valuation of a Business, Business Ownership Interest, Security, or Intangible Asset*¹

acquisition premium.² In a merger or an acquisition, the difference between the purchase price and preacquisition value of the target firm.

active market. A market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis (FASB ASC Master Glossary).

alpha testing. A process of obtaining opinions from selected users (typically from within the enterprise) on an enterprise's product or service under development for the purpose of testing performance and quality and making improvements prior to more widespread (beta) testing; see also **beta testing**.

angel or angel investor. An individual or fund who provides capital to one or more start-up enterprises. (The individual or fund typically is affluent or has a personal stake in the success of the venture. Such investments are characterized by high levels of risk and a potentially large return on investment.)

antidilution provision or antidilution rights. Standard antidilution provisions are those that result in adjustments to the conversion ratio for convertible instruments or the exercise price of warrants in the event of an equity restructuring transaction such as a stock split or special dividend. These antidilution provisions are designed to maintain the value of the instrument before and after the restructuring. Another form of antidilution provision is a down round feature, which is a right that provides one or more instruments with protection against dilution in the event of subsequent down rounds of financing. These rights result in an automatic adjustment of the original conversion ratio of the convertible instrument or the exercise price of a warrant in the event that an enterprise subsequently issues stock at a price per share below the original issue price of the existing preferred

¹ VS section 100 can be found in AICPA *Professional Standards*.

² The Appraisal Foundation's Valuations in Financial Reporting (VFR) Valuation Advisory #3, *The Measurement and Application of Market Participant Acquisition Premiums*, sets forth best practices for certain issues encountered in measuring the fair value of controlling interests in business enterprises for financial reporting purposes. Please refer to the [Appraisal Foundation's website](#) for further information.

stock or the original exercise price of a warrant. See also **full ratchet** and **partial ratchet**.

asset accumulation method. A method commonly under the asset approach under which the value of the enterprise is determined to be the net of the fair value of the enterprise's individual assets and liabilities. The asset accumulation method is also commonly referred to as the adjusted net asset value method or the adjusted book value method.

asset approach. A general way of determining a value indication of a business, business ownership interest, or security using one or more methods based on the value of the assets net of liabilities (IGBVT). Also known as asset-based approach.

basis of valuation. The basis of valuation reflects the types of premiums or discounts that should be considered for the subject interest, given the premise of value. In traditional valuation practice, valuations may be considered on a controlling or minority basis and on a marketable or nonmarketable basis. In valuing an interest in an enterprise, the basis of valuation for the enterprise should be consistent with the required rate of return for the investors who in aggregate have control over the business. Additional premiums or discounts may be applied to the extent that the required rate of return for the minority investors would differ from that for the investors who in aggregate have control over the business. See chapter 7, "Control and Marketability."

beta testing. A second stage (following alpha testing) of testing a new product or service in which an enterprise makes it available to selected users who use it under normal operating conditions and in the kind of environment in which it will be used more widely; see also **alpha testing**.

board composition rights. Rights that provide preferred stockholders the ability to control the board composition in a manner that is disproportionate to their share ownership.

burn rate. For an enterprise with negative cash flow, the rate of that negative cash flow, typically per month.

calibration. The process of reconciling the unobservable inputs used in a valuation technique so that the result of that valuation technique equals a specified value. As further explained in FASB ASC 820-10-35-24C, "[i]f the transaction price is fair value at initial recognition and a valuation technique that uses unobservable inputs will be used to measure fair value in subsequent periods, the valuation technique shall be calibrated so that at initial recognition the result of the valuation technique equals the transaction price. Calibration ensures that the valuation technique reflects current market conditions, and it helps a reporting entity to determine whether an adjustment to the valuation technique is necessary (for example, there might be a characteristic of the asset or liability that is not captured by the valuation technique)."

capital asset pricing model (CAPM). A model in which the cost of capital for any stock or portfolio of stocks equals a risk-free rate plus a risk premium that is proportionate to the systematic risk of the stock or portfolio (IGBVT).

capitalization rate. Any divisor (usually expressed as a percentage) used to convert anticipated economic benefits of a single period into value (IGBVT).

contemporaneous valuation. A valuation that is performed concurrent with, or a short time after, the as-of date of the valuation.

contingent consideration. Usually an obligation of the acquirer to transfer additional assets or equity interests to the former owners of an acquiree as part of the exchange for control of the acquiree if specified future events occur or conditions are met. However, contingent consideration also may give the acquirer the right to the return of previously transferred consideration if specified conditions are met (FASB ASC Master Glossary).

control. The power to direct the management and policies of a business enterprise (IGBVT).³

conversion right. A feature on some bonds and preferred stock issues allowing the holder to convert the securities into common stock.

cost approach. A valuation approach that reflects the amount that would be required currently to replace the service capacity of an asset (often referred to as *current replacement cost*) (FASB ASC Master Glossary). A general way of determining a value indication of an individual asset by quantifying the amount of money required to replace the future service capability of that asset (IGBVT).

cost of capital. The expected rate of return that the market requires in order to attract funds to a particular investment (IGBVT).

debt-like preferred stock. Preferred stock that is entitled to repayment of its liquidation preference upon a liquidity event or at a contractual redemption date, similar to the repayment of principal for a debt instrument. The distinction from other preferred stock is that debt-like preferred stock does not participate alongside common or convert to common at a fixed conversion price to participate in the upside appreciation in the value of the enterprise. Debt-like preferred stock may be redeemed at a liquidity event, or may have a contractual redemption date or put date, which gives the holder influence over the timing of a liquidity event. Debt-like preferred stock may also be used for bridge financing, where the liquidation preference may be settled in shares via conversion into the next financing round or into common stock at the IPO, at a conversion price that depends on the price in the financing.

discount for illiquidity. See **discount for lack of marketability**.

discount for lack of marketability. An amount or percentage deducted from the value of an ownership interest to reflect the relative absence of marketability (IGBVT). Also referred to as **marketability discount**, **illiquidity discount**, or **discount for illiquidity**.

³ It should be noted that this definition is not necessarily trying to define *control* from an accounting perspective. Please refer to FASB ASC Master Glossary for accounting definitions of control.

discount rate. A rate of return used to convert a future monetary sum into present value (IGBVT).

discount rate adjustment technique. A present value technique that uses a risk-adjusted discount rate and contractual, promised, or most likely cash flows (FASB ASC Master Glossary).

discounted cash flow (DCF) method. A method within the income approach whereby the present value of future expected net cash flows is calculated using a discount rate (IGBVT).

down round. A round of financing in which investors purchase stock from an enterprise at a lower price than the previous round.

drag-along rights. Rights that provide the controlling investor(s) with the right to force other investors to sell at the same time (for example, forcing a sale of the entire company).

EBIT. Earnings before interest and taxes.

EBITDA. Earnings before interest, taxes, depreciation, and amortization.

EBITDA coverage ratio. A solvency ratio that measures a company's ability to pay off its liabilities related to debts and leases.

EITF. Emerging Issues Task Force of FASB.

enterprise value. For purposes of this guide, enterprise value is defined as the value of equity and interest-bearing debt. In broader valuation practice, the term *enterprise value* is sometimes used to refer to the value of equity and interest-bearing debt, less all cash and equivalents; however, for this guide, the task force considers enterprise value to include cash and cash equivalents. Enterprise value may also be referred to as **invested capital, market value of invested capital (MVIC), total invested capital (TIC), or total enterprise value.**

equity value. For purposes of this guide, the enterprise value, less the fair value of debt, measured considering the required rate of return for the **investors who in aggregate have control over the business.**

expected cash flow. The probability-weighted average (that is, mean of the distribution) of possible future cash flows (FASB ASC Master Glossary).

expected present value technique. A technique that uses as a starting point a set of cash flows that represents the probability-weighted average of all possible future cash flows (that is, the expected cash flows). The resulting estimate is identical to expected value, which, in statistical terms, is the weighted average of a discrete random variable's possible values with the respective probabilities as the weights. Because all possible cash flows are probability-weighted, the resulting expected cash flow is not conditional upon

the occurrence of any specified event (unlike the cash flows used in the discount rate adjustment technique) (FASB ASC 820-10-55-13).

FASB. Financial Accounting Standards Board.

fair market value. The price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts (IGBVT).

fair value. The amount at which an asset (or liability) could be bought (or incurred) or sold (or settled) in a current transaction between willing parties, that is, other than in a forced or liquidation sale (FASB ASC 718, *Compensation—Stock Compensation*).

fair value. The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (FASB ASC 820, *Fair Value Measurement*).

first refusal rights. Contractual rights frequently granted to venture capitalists to purchase shares of common stock held by other shareholders (typically, founders and key management) before such shares may be sold to a third party.

forward EBITDA. The EBITDA of a company in an immediately succeeding period, usually the next 12 months (for example, next 12 months (NTM) or next fiscal year (NFY) EBITDA).

full ratchet. An antidilution provision that uses the lowest sales price for any shares of common stock sold by an enterprise after the issuance of an option (or convertible security) as the adjusted option price or conversion price for existing shareholders.

guideline company transactions method. A method within the market approach whereby market multiples are derived from the sales of entire companies engaged in the same or similar lines of business (appendix C, "Glossary of Additional Terms," of VS section 100).

guideline public company method. A method within the market approach whereby market multiples are derived from market prices of stocks of companies that are engaged in the same or similar lines of business and that are actively traded on a free and open market (IGBVT).

hybrid method. The hybrid method is a hybrid between the scenario-based method (SBM) and option-pricing method (OPM), estimating the probability-weighted value across multiple scenarios but using OPM to estimate the allocation of value within one or more of those scenarios.

IPO. Initial public offering.

illiquidity discount. See **discount for lack of marketability**.

income approach. Valuation approaches that convert future amounts (for example, cash flows or income and expenses) to a single current (that is, discounted) amount. The fair value measurement is determined on the basis of the value indicated by current market expectations about those future amounts (FASB ASC Master Glossary). A general way of determining a value indication of a business, business ownership interest, security, or intangible asset using one or more methods that convert anticipated economic benefits into a present single amount (IGBVT). Also known as income-based approach.

information rights. Contractual rights of access to prespecified information, such as monthly or audited financial statements or the annual operating plan, within a specified time period after that information is available to management.

internal rate of return (IRR). A discount rate at which the present value of the future cash flows of the investment equals the cost of the investment (IGBVT).

intrinsic value. The amount by which the fair value of the underlying stock exceeds the exercise price of an option. For example, an option with an exercise price of \$20 on a stock whose current market price is \$25 has an intrinsic value of \$5. (A nonvested share may be described as an option on that share with an exercise price of zero. Thus, the fair value of a share is the same as the intrinsic value of such an option on that share.) (FASB ASC Master Glossary).

invested capital. See **enterprise value**.

investment value. The value to a particular investor based on individual investment requirements and expectations (IGBVT).

investors who in aggregate have control of the business. The investors who in aggregate have control of the business are the investors who in aggregate can decide on future financings and the form and timing of the liquidity event. In many cases, the preferred stock investors (considering one or more of the classes in aggregate) have these rights. In situations where the investors' interests are not aligned, assessing which investors in aggregate have control of the business may require analyzing whether an exit would be advantageous for each class and then determining which classes voting together would have the ability to initiate or block a liquidity event.

junior security. A security that ranks lower than other securities in regard to the owner's claims on assets and income in the event of the enterprise becoming insolvent. Sometimes, the term is used interchangeably with junior equity security.

lead investor. Usually a private equity or venture capital firm that takes the lead in negotiating the terms of the deal or makes the initial investment in the company.

leveraged buyout (LBO). When a company is purchased with a combination of equity and significant amounts of borrowed money, structured in such a way that the target's cash

flows or assets are used as the collateral to secure and repay the money borrowed to purchase the target company.

liquidation preference. The right to receive a specific value for shares of stock if an enterprise is liquidated. (In this context, a dissolution, merger, sale, change of control, or sale of substantially all assets of an enterprise are collectively referred to as a liquidation.)

liquidity event. A change or transfer in ownership of an enterprise or a significant portion of the enterprise (for example, an IPO, merger, sale, change of control, sale of substantially all assets, or dissolution). Note that although an IPO can provide liquidity to the company's freely traded shares and also, in most cases, leads to the conversion of the preferred stock and, thus, resolves the optionality of the common stock, it seldom provides liquidity for all shareholders. For purposes of this guide, the term liquidity event presupposes that the event involves a process of price discovery that may be relied on when estimating fair value.

loan-to-value (LTV) ratio. Lending risk assessment ratio that financial institutions and other lenders examine before approving a loan. It is calculated as the amount of the loan divided by the value of the collateral, expressed as a percentage.

management rights. Contractual rights to perform certain specific activities normally afforded only to management.

mandatory redemption rights. Contractual rights to redeem one's investment for a specific amount.

market approach. A valuation approach that uses prices and other relevant information generated by market transactions involving identical or comparable (that is, similar) assets, liabilities, or a group of assets and liabilities, such as a business (FASB ASC Master Glossary). A general way of determining a value indication of a business, business ownership interest, security, or intangible asset by using one or more methods that compare the subject to similar businesses, business ownership interests, securities, or intangible assets that have been sold (IGBVT). Also known as *market-based approach*.

market participants. Buyers and sellers in the principal (or most advantageous) market for the asset or liability that have all of the following characteristics:

- a. They are independent of each other, that is, they are not related parties, although the price in a related-party transaction may be used as an input to a fair value measurement if the reporting entity has evidence that the transaction was entered into at market terms
- b. They are knowledgeable, having a reasonable understanding about the asset or liability and the transaction using all available information, including information that might be obtained through due diligence efforts that are usual and customary
- c. They are able to enter into a transaction for the asset or liability

- d. They are willing to enter into a transaction for the asset or liability, that is, they are motivated but not forced or otherwise compelled to do so.

(FASB ASC Master Glossary).

market value of invested capital (MVIC). See **enterprise value**.

marketability discount. See **discount for lack of marketability**.

mezzanine debt. Debt that is subordinated to senior loans (for example, first lien and second lien debt) and is generally unsecured

mezzanine financing. A financing round generally associated with venture capital-backed enterprises occurring after the enterprise has developed its product or service and has commenced operations but before the enterprise is ready for an IPO or to be acquired.

minority interest.⁴ An ownership interest less than 50% of the voting interest in a business enterprise (IGBVT).

most advantageous market. The market that maximizes the amount that would be received to sell the asset or minimizes the amount that would be paid to transfer the liability, after taking into account transaction costs and transportation costs (FASB ASC Master Glossary).

multiple of invested capital (MOIC). A popular measure of return on invested capital which does not take into consideration the time value of money or opportunity cost. It is calculated as return on capital (realized and unrealized) divided by invested capital. If you invest \$1,000,000 and return \$10,000,000 in 10 years your MOIC is 10x. If you invest \$1,000,000 and return \$10,000,000 in 3 years your MOIC is still 10x.

natural logarithm (ln). A logarithm to the base e where e is a constant with the value 2.718281828 ... The natural logarithm is commonly written as $\ln x$ to mean $\log_e x$ (that is, $\log x$ to the base e). It can be thought of as the amount of time needed to reach a certain level of continuous growth where $\ln x$ is the time needed to grow to x (with 100% continuous compounding).

net debt. A measure of a company's ability to repay all debt if it were called immediately. It is calculated by adding short-term and long-term debt and subtracting all cash and cash equivalents.

⁴ It should be noted that the minority interest discussed in this guide is considered from the perspective of the holder, with a focus on the degree of influence that a market participant transacting in the interest would have over the company's strategy and operations. It is not intended to refer to noncontrolling interest addressed in FASB ASC 810. See footnote 2 in paragraph .01.

option-adjusted spread (OAS). A yield spread that has to be added to a benchmark yield curve to discount a debt or debt-like preferred instrument's payments to match its market price, using a dynamic model that accounts for embedded options.

orderly transaction. A transaction that assumes exposure to the market for a period before the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets or liabilities; it is not a forced transaction (for example, a forced liquidation or distress sale) (FASB ASC Master Glossary).

paid-in-kind (PIK) interest (or dividends). Interest on a debt (or dividends on a preferred stock) paid either by issuing additional like-kind instruments or by increasing the principal of the existing instrument, rather than by paying in cash. Also commonly referred to as *pay-in-kind* or *payment-in-kind*.

partial ratchet. An antidilution provision that uses some type of weighted average sales price of shares of common stock sold by an enterprise after the issuance of an option (or convertible security) as the adjusted option price or conversion price for existing shareholders.

participation rights. Rights that relate to situations when after the holders of preferred stock receive their full liquidation preference, they are then entitled to share with the holders of common stock in the remaining amount being paid for the company.

postmoney value. An enterprise's value immediately following its most recent round of financing; see also **premoney value**.

premise of value. An assumption regarding the most likely set of transactional circumstances that may be applicable to the subject valuation; for example, going concern, liquidation (IGBVT).

premoney value. An enterprise's value immediately preceding its most recent round of financing; see also **postmoney value**.

prepayment penalty. Fees paid by borrowers for the privilege of retiring a debt early. Such charge is provided for in the debt instrument and normally is expressed as a percentage of the debt, an additional interest charge, or a flat fee.

primary transaction. A transaction involving the original issuance of an equity interest or debt instrument of a privately-held company directly by the company to an investor. Note that primary transactions may involve existing investors, new investors, or both.

principal market. The market with the greatest volume and level of activity for the asset or liability (FASB ASC Master Glossary).

private equity fund. A closed-end investment company which typically seek to generate returns through longer-term appreciation from investments in privately held and nonlisted publicly traded companies. Private equity funds often obtain majority controlling interests or significant minority interests that allow for active involvement in investee

operations, restructuring, and merger and acquisition activity, through board oversight positions for the purpose of improving the portfolio company.

private investment in public equity (PIPE) transaction. A transaction where a fund or other private investor purchases an interest in a public company in a private placement or from other investors. These investments may be in the form of a direct investment in the common stock, but often instead take the form of convertible debt or preferred stock or warrants.

prospective financial information (PFI). Any financial information about the future. The information may be presented as complete financial statements or limited to one or more elements, items, or accounts. Prospective financial information can be either a forecast or a projection (AICPA Guide *Prospective Financial Information*).

registration rights. Contractual rights of an investor to require an enterprise to register and to sell his or her unregistered stock in the enterprise.

related parties. Related parties include:

- a. Affiliates of the entity
- b. Entities for which investments in their equity securities would be required, absent the election of the fair value option under the "Fair Value Option" Subsection of Section 825-10-15, to be accounted for by the equity method by the investing entity
- c. Trusts for the benefit of employees, such as pension and profit-sharing trusts that are managed by or under the trusteeship of management
- d. Principal owners of the entity and members of their immediate families
- e. Management of the entity and members of their immediate families
- f. Other parties with which the entity may deal if one party controls or can significantly influence the management or operating policies of the other to an extent that one of the transacting parties might be prevented from fully pursuing its own separate interests
- g. Other parties that can significantly influence the management or operating policies of the transacting parties or that have an ownership interest in one of the transacting parties and can significantly influence the other to an extent that one or more of the transacting parties might be prevented from fully pursuing its own separate interests.

(FASB ASC master glossary)

reload feature and reload option. A reload feature provides for automatic grants of additional options whenever a grantee exercises previously granted options using the

entity's shares, rather than cash, to satisfy the exercise price. At the time of exercise using shares, the grantee is automatically granted a new option, called a reload option, for the shares used to exercise the previous option (FASB ASC master glossary).

replacement cost new. The current cost of a similar new property having the nearest equivalent utility to the property being valued (IGBVT). Also known as *current replacement cost* or *replacement cost*.

required rate of return. The minimum rate of return acceptable by investors before they will commit money to an investment at a given level of risk (IGBVT).

right to participate in future rounds. Contractual right that allows each preferred stockholder to purchase a portion of any offering of new securities of the enterprise based on the proportion that the number of shares of preferred stock held by such holder (on an as-converted basis) bears to the enterprise's fully diluted capitalization or total preferred equity. The right to participate in future rounds gives the preferred stockholders the ability to maintain their respective ownership percentages and restricts the ability of common stockholders to diversify the shareholdings of the enterprise.

risk premium. Compensation sought by risk-averse market participants for bearing the uncertainty inherent in the cash flows of an asset or a liability. Also referred to as a risk adjustment (FASB ASC Master Glossary).

roll-up. An investment strategy where multiple small companies in the same market are acquired and merged. The principal aim of a roll-up is to reduce costs through economies of scale and also benefit from the effect of increasing the valuation multiples the business can command as it acquires greater scale.

SSVS. Statement on Standards for Valuation Services issued by the AICPA and available in VS section 100.

scenario-based method (SBM). A forward-looking method that considers one or more possible future scenarios, allocating value within each scenario and discounting back to the valuation date. This method may also be referred to as the *probability-weighted expected return method* (PWERM).

secondary market. A market where existing securities are bought and sold in transactions between investors, rather than from the company.

secondary transaction. Any purchase or sale, other than the original issuance, of an equity interest in or debt instrument of a privately-held company. Such transactions may be completed either in a private transaction between two or more parties, or through a secondary exchange. A secondary transaction differs from a public market transaction in that the securities transacted are not public; therefore, generally the buyers in these transactions are accredited investors, and the issuers of the securities are not subject to public company reporting requirements. For purposes of this guide, a purchase of an equity interest or debt instrument by the company (or its related parties or other economic

interest holders) from employees is also considered to be within the scope of secondary transactions.

secured debt. Debt that is backed or secured by collateral.

seed capital. The initial equity capital used to start a new enterprise, typically provided in order to develop a business concept before the enterprise is started.

senior debt. A debt instrument that gets priority in repayments in the event of a claim or bankruptcy liquidation.

senior security. A security that has priority over other securities in the event of a claim or bankruptcy liquidation. Sometimes, the term is used interchangeably with senior equity security.

simple agreement for future equity (SAFE). A simple agreement for future equity (SAFE) is an agreement between a company and an investor in which the company promises to give the investor a future ownership interest in the company if certain triggering events occur, such as a future equity financing or an acquisition of the company. The owner of the SAFE does not have an ownership interest in the company unless the triggering event occurs and converts the instrument into equity. Like convertible notes, SAFEs are often used during seed rounds; however, unlike convertible notes, SAFEs generally do not include a valuation of the equity at the time of issuance, instead deferring that calculation until the triggering event occurs. ([SEC, the Office of Advocate for Small Business Capital Formation Glossary: Investing in Small Business](#))

simple capital structure. A capital structure that includes only a single primary class of equity (for example, common stock or common units of an LLC), as well as options and warrants or profits interests, plus debt, debt-like preferred securities, or both.

subordinated debt. A debt instrument whose holders have a claim on the company's assets only after the senior debtholders' claims have been satisfied. Sometimes, the term is used interchangeably with *junior debt* or *subordinated loan*.

sunk costs. Costs already incurred that cannot be recovered, regardless of future events.

swap rate. The rate of the fixed leg of a swap as determined by its particular market. In an interest rate swap, it is the fixed interest rate exchanged for a benchmark rate such as LIBOR plus or minus a spread.

synergy. Used mostly in the context of mergers and acquisitions, the concept that the value and performance of two entities combined will be greater than the sum of the separate individual parts. In the context of developing prospective financial information, synergies may account for some of the difference between the assumptions used to estimate cash flows that are unique to an entity and the assumptions that would be used by market participants.

synthetic credit rating. A method whereby unrated debt is synthetically rated based on the credit ratings of similar debt issued by other companies whose financial metrics are comparable. Once a synthetic credit rating is assessed, it can be used to estimate a credit spread that may be added to the selected benchmark curve to estimate the market yield for a specific debt instrument. The market yield and corresponding credit spread at inception should typically be estimated via calibration.

tag-along investors. Investors who typically purchase an interest in a deal negotiated by another party (the lead or other follow-on investor).

tag-along rights. Rights that allow the investors to participate pro rata in any sale of the shares that another investor negotiates.

terminal value. The value as of the end of the discrete projection period in a discounted future earnings model (IGBVT). In the context of this guide, this represents enterprise value as of the end of the discrete cash flow period in a discounted cash flow model when earnings are expected to stabilize.

top-down method. Valuation method that involves first valuing an enterprise and then using that enterprise valuation as a basis for allocating the enterprise value among the enterprise's debt instruments and equity securities.

total enterprise value. See **enterprise value**.

total invested capital (TIC). See **enterprise value**.

USPAP. *Uniform Standards of Professional Appraisal Practice* published by the Appraisal Foundation.

underwriter lockup. An agreement that prohibits the investors from selling or hedging their investment for a period of time, typically 180 days, following the IPO.

unobservable inputs. Inputs for which market data are not available and that are developed using the best information available about the assumptions that market participants would use when pricing the asset or liability (FASB ASC Master Glossary).

unrelated party. Other than a *related party*, as defined in the FASB ASC Master Glossary.⁵

unsecured debt. Debt that is not backed or secured by specific collateral.

⁵ The task force recommends that consideration also be given to the requirements of item II.C., "Disclosures about Effects of Transactions with Related and Certain Other Parties," of SEC Release No. FR-61, *Commission Statement about Management's Discussion and Analysis of Financial Condition and Results of Operations*. Under that release, consideration should be given to relationships that might cause dealings between parties to be at other than arm's length despite the parties not being considered related parties under the FASB ASC definition. For example, an enterprise may be established and operated by individuals who were former senior management of, or have some other current or former relationship with, the other entity. Please see www.sec.gov/rules/other/33-8056.htm for more information.

up round. A round of financing in which investors purchase stock from an enterprise at a higher price than the previous round.

valuation model. The quantitative and qualitative analysis, assumptions and judgments used to support a fair value estimate. The use of the term *model* does not imply a specific degree of complexity. The complexity of the valuation model used to support an estimate will depend upon the facts and circumstances. The valuation models used in estimating fair value may include the same types of models that market participants use in making investment decisions.

valuation specialist. An individual recognized as possessing the abilities, skills, and experience to perform valuations. A valuation specialist may be external or internal. When referring to the valuation specialist in this guide, it is commonly presumed that it is an external party, but if individuals within the entity possess the abilities, skills, and experience to perform valuations, they can also serve in the capacity of a valuation specialist.

venture capital fund. A closed-end investment company which typically seeks to generate returns through longer-term appreciation from investments in privately held early-stage and start-up companies. Such portfolio companies may be pre-revenue or pre-earnings and the ultimate goal is to grow the company to a point where it can go public or be acquired by a larger corporation at a price that exceeds the amount of capital invested.

voting rights. Contractual rights to vote as a shareholder for members of the board of directors and other matters of corporate policy on the basis of the number and class of shares held.

waterfall. The contractual allocations of cash flows returned to the various instruments in an enterprise upon a distribution from or liquidation of the entity, reflecting the seniority of each claim. The waterfall is a hierarchy delineating the order in which funds are distributed and may ensure certain claims have priority of payment over others. For example, upon the sale of an enterprise, the proceeds might first be used to repay senior debt, then junior debt, and then distributed to the senior preferred, then junior preferred, then common.

weighted average cost of capital (WACC). The cost of capital (discount rate) determined by the weighted average, at market value, of the cost of all financing sources in the business enterprise's capital structure (IGBVT).

yield method. The yield method is a type of discounted cash flow analysis that estimates the fair value of a debt or debt-like preferred instrument based on the expected cash flows (given the contractual interest or dividend rate, any scheduled principal repayments, and the expected maturity), discounted at the market yield for the instrument given its risk. The expected maturity considers both the contractual maturity, as well as market participant assumptions regarding the expected timing of a liquidity event, and any principal repayments expected in connection with the liquidity event.