AIMCo

Long-Term Asset Class Forecast 2022 - 2031

Priorities guide investors to choose their paths.

For AIMCo, a long-term view is the best way to navigate and vital to **our purpose — helping our clients secure a better financial future for the Albertans they serve.**

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Joint CIO and CFMO Message

As the stewards of our client's capital, it is important that we, and our clients, understand the fundamental factors that drive long-term returns. Of equal importance is to develop forward-looking expectations for how these factors may impact risk and returns. To that end, we are pleased to present our 2022 Long-Term Asset Class Forecast. Each year we look for ways to improve our forecasting process. As an update for this year, we have introduced a forecasted range of outcomes, to complement our baseline estimates. Considering a range of expectations in a robust asset mix and portfolio construction approach provides resilience against future market uncertainties. The forecast intends to elicit dialogue and debate on the factors that will affect future returns and how those factors will evolve. This process helps focus the discussion on our clients' long-term goals while filtering the short-term noise that often dominates headlines. For each asset class, we have decomposed our return forecast into the building blocks that have proven to be reliable estimates of forward-looking risk and return.

Equity markets continued to advance in 2021 and valuation levels remain lofty by most measures. Equity markets are a good reminder of why historical returns are a poor measure of expected returns. Much of the gains made over the past 10 years in equity markets have come from the expansion of valuation multiples. A decrease in valuation levels, or even more simply assuming they remain at existing levels, could challenge equity returns over the next decade. That said, some markets appear more fairly priced than others. Emerging market valuations, for example, are currently priced at a significant discount to those of the United States.

In recent months, the debate on inflation and how central banks will react to it has impacted markets, particularly fixed income. With interest rates rising, and many central banks signalling upcoming rate hikes, fixed income assets are facing a headwind in the short term. This is an interesting dynamic — rising rates hinder near-term returns but improve future return expectations for fixed income investments from very muted levels. Fixed income assets remain a good source for liquidity and diversification in a balanced portfolio. Credit spreads continued to narrow during 2021 and sit at relatively low levels. However, we do not anticipate a systemic credit event over this baseline forecast's horizon and continue to favour asset classes focused on selective underwriting credit risk.

Our long-term view of global growth dynamics is little changed and developed economies still face many structural challenges. Persistent economic inequality, an ageing workforce and slowing productivity are likely to diminish long-term GDP growth relative to historical results. Perhaps the most dramatic development of 2021 was the pickup in inflation. Global supply chains and elevated goods demand have pushed inflation higher. Given inflation's prominent role in policy discussions and return forecasts alike, we have highlighted this topic in more detail on the pages to come.

We look forward to continuing the dialogue around this forecast and exploring how we can further enhance our clients' portfolios as a result.

Dale MacMaster
Chief Investment Officer

Amit Prakash
Chief Fiduciary Management Officer

AIMCo 2022 Long-Term Forecast

The long-term capital markets forecast has become a staple deliverable for our clients at the beginning of each calendar year. At its heart, it provides long-term return and risk forecasts for 17 asset classes, broadly split into fixed income, public equities and illiquid assets. By forecasting various macroeconomic variables and economic scenarios along with modeling different components or building blocks, we arrive at reasonable risk and return expectations over a 10-year time horizon.

While we broadly follow the same proven process every year, we are constantly evolving our processes and methodologies to improve our forecasting ability. For the first time, we have introduced a range of forecasted returns for each asset class, to supply our readers with a more robust picture of return expectations. These values can be found in the **Long-Term Forecasted Return Ranges**. Additionally, we have partnered with AlphaLayer, a leader in AI-enabled solutions, to enhance our risk forecasting process. Please see the **Risk Forecast Methodology** for more details.

The 2022 long-term forecast also brings about a new benchmark for one of our asset classes, Private Debt and Loan, highlighting our enduring dialogue with clients. Furthermore, we take a deep dive into inflation, an inescapable subject as we kick off 2022. Inflation is our **Topic of the Year**.

Return Forecast

Our 2022 forecast is based on expectations of a challenging global macroeconomic backdrop as we enter a period of slower, albeit positive, growth. In 2022, we expect high inflation levels, tighter monetary policies from central banks, particularly from the Federal Reserve, and a strong U.S. dollar. We anticipate inflation to remain high in the near term, however, we believe it will taper off over the long term. Government bonds yields, over the forecast horizon, are expected to remain at lower levels than historical averages, despite rising gradually.

The fundamentals remain robust for public equities as GDP growth will likely remain strong over the next decade. Earnings growth is expected to remain healthy due to a combination of labor market recovery and consumer demand. On the valuation side, price-to-earnings (P/E) ratios have improved from last year, however, they persist being above their long-term average (i.e. there is room for further compression).

Illiquid assets continue to exhibit high return-to-risk ratios. Overall, current private asset valuations, while still elevated, are less expensive in comparison to last year, resulting in a reduced drag on returns. Illiquid assets aren't immune from macroeconomic factors such as inflation and real yields. Real assets can provide a degree of protection against inflation as these investments can pass through a portion of inflation to end-users.

Risk Forecast

The risk forecast used is based on the same methodology (VAR-GARCH-DCC[1] statistical model) we have utilized in previous years. The model allows us to forecast asset class volatilities and correlations simultaneously to provide consistent, forward-looking estimates. This forecast incorporates more accurate market return distribution to capture the so-called "fat tails". Additional details can be found in the **Risk Forecast Methodology** section.

1. Vector Autoregressive - Generalized Autoregressive Conditional Heteroscedasticity - Dynamic Conditional Correlation

Overview

By taking into account both long-term return and risk expectations, we can envision an efficient frontier that incorporates all our forecasts. Putting it all together, a balanced portfolio (represented by AIMCo's aggregate balanced fund), is expected to achieve a 5.9% annualized return over the next decade.

Table 1: Forecasted Return and Risk 2022-2031

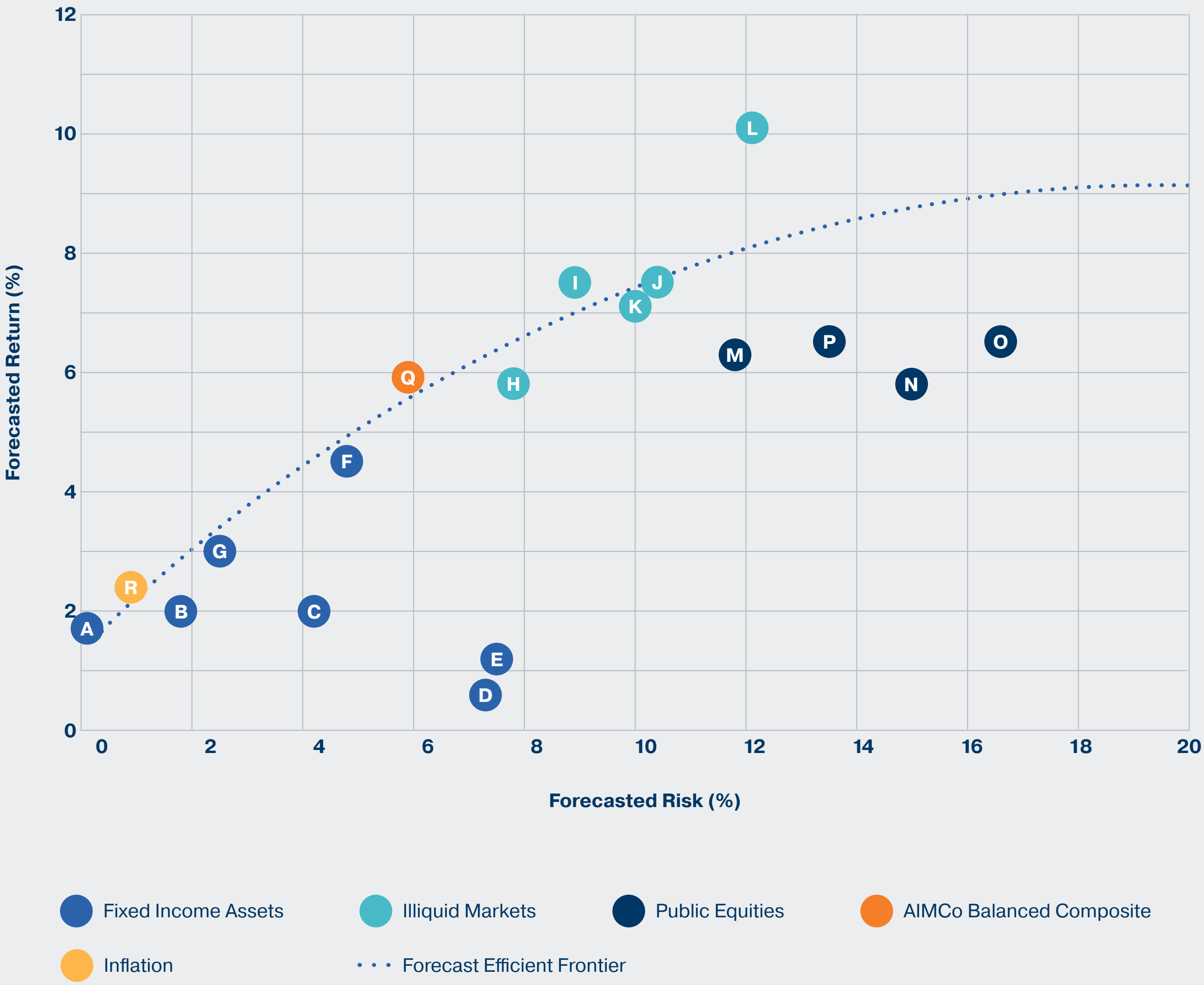
Asset Class	Benchmark	Expected Return (Annualized %)	Expected Risk* (Annualized %)
Fixed Income			
A Money Market	FTSE Canada 91-Day T-bill Index	1.7%	0.1%
B Short-Term Bonds	FTSE Canada Short-Term All Government Bond Total Return Index	2.0%	1.8%
C Universe Bonds	FTSE Canada Universe Bond Total Return Index	2.0%	4.2%
D Long Bonds	FTSE Canada Long-Term All Government Bond Total Return Index	0.6%	7.3%
E Real Return Bonds	FTSE Canada Real Return Bond Total Return Index	1.2%	7.5%
F Private Debt and Loan	40% S&P/LSTA Leveraged Loan Index + 40% S&P European Leveraged Loan Index + 90 bps	4.5%	4.8%
G Mortgages	60% FTSE Short-Term Overall Bond Index and 40% FTSE Canada Mid-Term Overall Bond Index + 50 bps	3.0%	2.5%
Illiquid Markets			
H Canadian Real Estate	REALpac/IPD Canadian All Property Index – Large Institutional Subset	5.8%	7.8%
I Foreign Real Estate	MSCI Global Region Property Index	7.5%	8.9%
J Infrastructure	Total CPI 1 Month Lagged + 450 bps (5-year rolling average)	7.5%[1]	10.4%[2]
K Renewable Resources	Total CPI 1 Month Lagged + 450 bps (5-year rolling average)	7.1%[1]	10.0%[2]
L Private Equity	Total CPI 1 Month Lagged + 650 bps (5-year rolling average)	10.1%[1]	12.1%[2]
Public Equities			
M Global Equities	MSCI World Net Total Return Index	6.3%	11.8%
N Canadian Equities	S&P/TSX Composite Total Return Index	5.8%	15.0%
O Emerging Markets Equities	MSCI Emerging Markets Net Total Return Index	6.5%	16.6%
P Global Small Cap Equities	MSCI World Small Cap Net Total Return Index	6.5%	13.5%
Q AIMCo Balanced Composite	**AIMCo Composite: 38% Equity 26% Fixed Income 36% Illiquid Assets**	**5.9%**	**5.9%**
R Inflation	**Consumer Price Index**	**2.4%**	**0.9%**

*Expected risk in standard deviation terms.

[1] Annualized return forecast consistent with the underlying asset class, not benchmark.

[2] Annualized risk forecast consistent with the underlying asset class, not benchmark.

Chart 1: Efficient Frontier and Asset Class Forecast



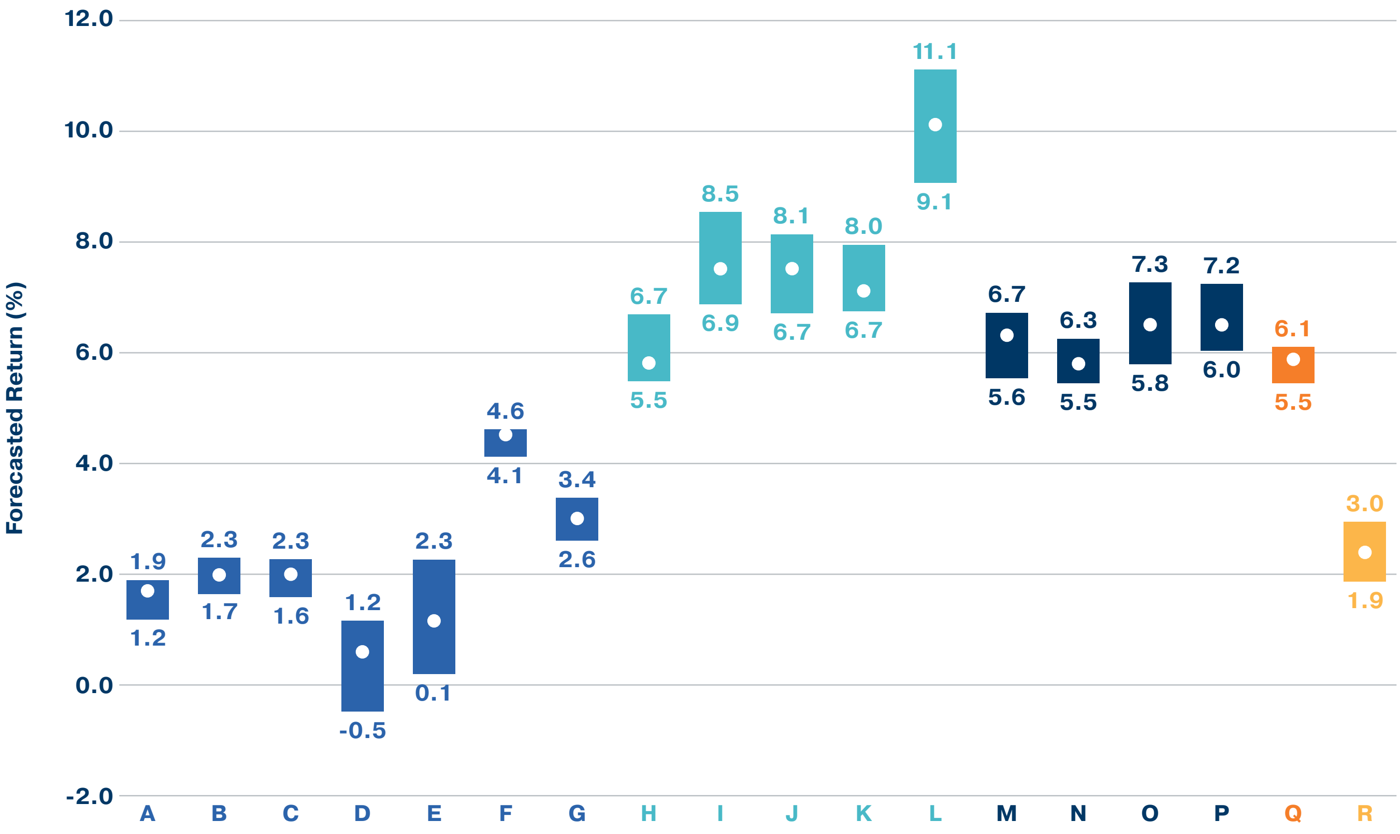
Source: AIMCo

Long-Term Forecasted Return Ranges

RANGE FORECAST

In recent editions, we have highlighted the need to better understand the degree of variation around our central asset class return and risk expectations. To that end, after having shown the distributions of the main macroeconomic variables in past years, we are introducing our first attempt at uncovering the range of uncertainty embedded in AIMCo's 10-year capital market assumptions. We have simulated scenarios around the major economic inputs to the various asset classes' building blocks to derive ranges for the expected returns. Results can be found later in this publication.

Chart 2: Forecasted Return Ranges



Fixed Income

A Money Market
B Short-Term Bonds
C Universe Bonds
D Long Bonds
E Real Return Bonds
F Private Debt and Loan
G Mortgages

Illiquid Markets

H Canadian Real Estate
I Foreign Real Estate
J Infrastructure
K Renewable Resources
L Private Equity

Public Equities

M Global Equities
N Canadian Equities
O Emerging Markets Equities
P Global Small Cap Equities

Q AIMCo Balanced Composite

R Inflation

Source: AIMCo

○ Baseline Return (Annualized %)

Global Economic Scenario

U.S.

The U.S. enters 2022 with, generally, strong cyclical conditions as leading economic indicators show positive momentum. Robust private spending will continue to be boosted by a mix of excess savings and falling unemployment. However, our baseline scenario implies that further supply chain disruptions and labour shortages due to the Omicron COVID-19 variant will only start abating in the second half of 2022. Furthermore, some watered-down version of President Biden's "Build Back Better" infrastructure bill is also included in our assumptions. Downside risk to this scenario exists. Despite such uncertainty, we project 2022 U.S. economic growth well above potential, reaching more than 4% once the demand for services and net exports rebound in the latter part of the year alongside a replenishment of inventories.

In the long term, however, certain themes contributing to lower U.S. potential growth remain: weaker demographics leading to a shrinking working-age population, deglobalization, increased regulation and the plight of elevated public debt. Moreover, it is not clear that the digitization of the economy induced by the pandemic will cause a permanent rise in productivity. In addition, in a post-pandemic world, we believe both the growth of the Federal Reserve balance sheet and the U.S. fiscal impulse will continue to reverse. Monetary policy is expected to become less accommodative, with benchmark policy interest rates rising gradually over time. Overall, as such, we forecast the U.S. economy to grow below the 2% level on an annual basis for most of the next decade.

Canada

Canada's economy is expected to grow faster than the trend in 2022, with healthy consumer spending on the back of excess accumulated savings and recovering labour markets. Trade activity is also anticipated to remain robust. This could lead to growth above 4% in 2022. Canadian inflation for 2022 will average at least 3.5%, with Omicron-related labour shortages to have an impact going into the second quarter and lingering global supply bottlenecks unlikely to start being resolved before the third quarter. This set of assumptions is also subject to downside risk.

With government supports diminishing as the pandemic effects recede, however, the structural lower trend in potential growth is likely to resume itself. On the one hand, Canada's ageing population and reduced working force are unlikely to be fully offset by immigration gains. On the other, challenges related to the energy infrastructure and demand dynamics could weigh on business investment growth. All factors combined, Canada's growth is forecasted to average below 2% annually, in the long term. Additionally, the supply and demand potential imbalances as the economy transitions towards more renewable energies, housing prices and the higher share of healthcare spending could lead to inflation sustainably above the mid-point (2%) of the Bank of Canada's target range. Consequently, we believe that interest rates will slowly increase over the forecast horizon.

China

We forecast China to grow at a slower pace in 2022 than in 2021, yet at a still enviable 5% clip. The zero-COVID domestic policy may continue to hamper economic activity while China's recalibration of the real estate sector contribution to its economic fabric also warrants such lower short-term growth expectations.

Looking over the forecast horizon, China's pivot to the theme of "common prosperity" to address rising inequality and reaching a high-income status nation by 2025 should lead to faster adoption of consumer-led growth policies and a regulatory framework aimed at moderating housing, education and healthcare inflation trends.

Economic growth is therefore likely to continue averaging more than 5% per year in the first half of the next decade before slowing towards 4% annually by the end of it as the unfavourable forces of an ageing population take hold. Monetary policy is expected to aim at macro-prudential measures to contain leverage and ensure balanced benefits for China's middle class.

Eurozone

Short-term economic growth in the euro area is likely to be strong in 2022, close to 4%, as we expect the output gap to close only in 2023 for the region. Elevated energy prices are likely to persist for a few quarters in the region and inflation should end 2022 above the 2% target of the European Central Bank.

The Eurozone is the world's most trade-oriented regional economic block and its long-term potential growth will be pressured as the pandemic-induced supply chain disruptions drive a process of global re-shoring manufacturing capacity. Furthermore, the shrinking working-age population is also expected to dominate the trend towards challenging outcomes for labour force expansion, growth and inflation long-term prospects. Some solace, however, could be found in increased green economy and digital investments boosting technological progress in the region as well as more emphasis on structural reforms. We expect the Eurozone to lag the U.S. and Canada in its policy interest rate normalization.

Emerging Markets

Emerging market countries, excluding China, enter 2022 with varied prospects. A lower share of the population is vaccinated, in aggregate, rendering the cyclical rebound more fragile. Some emerging countries have already raised policy interest rates to fight rising inflation, while others are reacting slowly to this trend. Consumer inflation should remain high in 2022 across emerging markets (more than 5% in annual terms), with economic growth decelerating below the 5% mark.

From a structural perspective, current account deficits amongst emerging markets have improved significantly in aggregate (i.e. those countries are less reliant on capital inflows). Emerging markets also continue to have their long-term economic growth prospects bolstered by an expanding middle class and, aside from China, a growing workforce relative to the major developed economies.

Japan

In the short term, the growth differential between Japan and other major developed countries should lessen as Japan's economy is expected to grow handsomely in 2022, around 3%, as it emerges from the pandemic. Japan is also forecasted to be the only major developed country in which inflation is unlikely to be above the domestic central bank target.

In the long term, however, its potential growth is expected to remain challenged due to an ageing population. This trend is anticipated to be somewhat countered by Japan's integration into Asian supply chains, leading the country to benefit from Asia's deepening regional trade integration over the next 10 years or so. Overall, sluggish growth and inflation should drive monetary policy to remain accommodative for an extended period.

Climate Change

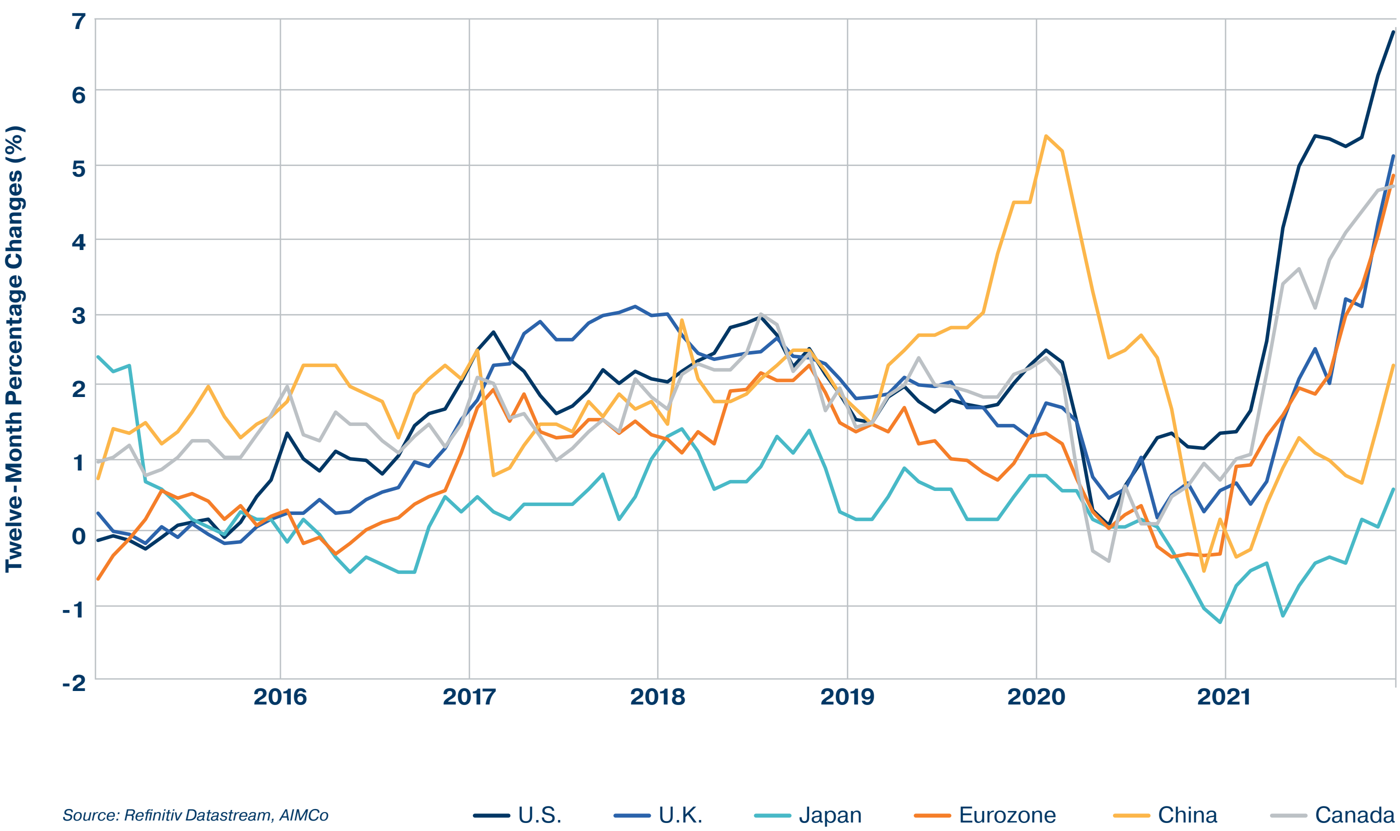
Climate change remains an important subject for AIMCo and our clients. We strive to identify and integrate environmental drivers into our long-term forecasting. Climate change was first introduced in our 2021 long-term forecast and the baseline economic scenario in our 2022 forecast continues to incorporate an assumption of one additional degree of warming to 2050, globally, from levels observed at year-end 2019.

Topic of the Year: Inflation

In most developed countries over the last 15 to 20 years, the inflation rate of services has been stable while the most important driver of disinflation has been imported, largely through goods produced in China and within emerging markets. The pandemic-mandated shutdowns, however, led to a sudden collapse in household income and consumer spending, amongst other effects. Governments came to the rescue by injecting massive amounts of fiscal stimulus to cover for lost income.

Household savings ballooned, with U.S. consumers sitting on about USD 2.4 trillion in excess savings and Canadian consumers holding approximately $300 billion worth of excess savings. Household demand fell initially, but soon picked up faster than supply could cope with as businesses slowly reopened, labour shortages abounded, logistical issues appeared in the limelight and consumers began spending their much higher income boosted by government aid. This led to an unprecedented level of imbalances between the supply of goods and services and their associated demand. With global supply chains facing severe bottlenecks and energy prices rising in some regions, all the ingredients are there for inflation to be sustained, at least in the near term. As of November 2021, inflation exceeded 2% in just about 90% of countries, globally.

Chart 3: Global CPI Inflation (as of November 2021)



Source: Refinitiv Datastream, AIMCo

The world is now grappling with the following question: to what extent will inflation abate over the next two to five years?

Currently, we are forecasting a mild, sustained increase in prices over the next business cycle. While the acyclical inflation categories (e.g. education, healthcare, etc.) also contributed to driving overall prices higher, we expect the main driver of higher inflation, the cyclical portion (e.g. goods, housing, etc.), to moderate in the second half of 2022 as the economy reopens in earnest.

Assuming that the Omicron variant is one of the last COVID-19 variants to which society must significantly adjust, price increases due to supply chain disruptions should then ease as the loosening of borders will improve the flow of goods and passenger traffic. Shipping costs would potentially fall and additional workers would return to the workforce with the end of government support programs.

Many large corporations are also now hinting at a coming resolution for the semiconductor supply chain challenge. Also noteworthy is that China might be on the verge of putting a cap on coal prices, which could take the sting out of energy shortages. Yet, the "pass-through" process in which producers suffering from higher input prices have passed their price increases to consumers and end-users will not be completed before much later in 2022, in our opinion ("cost-push" inflation).

The cyclical segment of inflation is the one most correlated with the business cycle. It is also what central banks can control, to a certain extent. In response to current inflation risk, the Bank of Canada, the Federal Reserve and other major central banks around the world, have either explicitly or indirectly acknowledged that inflation could remain higher for a while still and, accordingly, are accelerating plans for policy rate normalization. In both Canada and the U.S., this may mean between two and four rate hikes over the next year and a half. By doing so, the major central banks will also attempt to prevent a de-anchoring of long-term inflation expectations. Ensuring that long-term inflation expectations remain around the target is crucial for central banks to keep their credibility surrounding the mandate to keep inflation stable.

Looking past the next few years, the current bout of heightened inflation risk is unlikely to create economic conditions quite as dramatic as what was experienced in the 1970s. One of the main reasons is that while some wage acceleration is almost certain with relatively high job vacancies, the level of unionization is simply not as prevalent as it was then.

Therefore, wage inflation is unlikely to spiral out of control, in our minds. Still, the risk of "cost-push" inflation in the medium term has increased markedly. Above-target inflation could prove to be "sticky" in the long term relative to the consensus expectations of economists driven by three main factors:

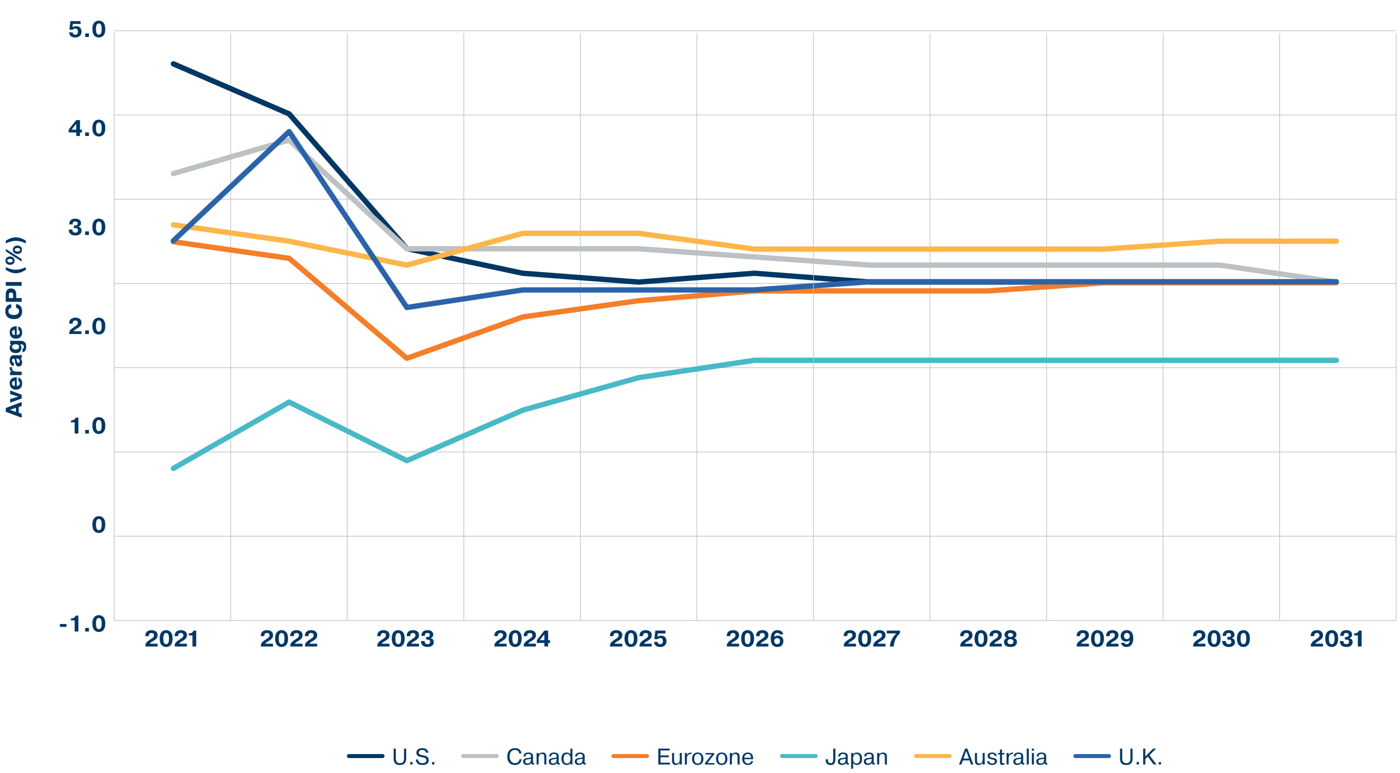
1. A continuation of zero-COVID policy in many countries, notably China, which has recently disrupted global supply chains and shipping trade with port terminal closures in response to efforts to control COVID outbreaks and emerging variants leading to goods being produced in higher wage locations;

2. Rising electricity costs as renewable power production gains a larger share of the energy mix swifter than the infrastructure can adjust to and;

3. Raw materials, such as steel, fertilizer and cement, experiencing significant price increases due to carbon pricing and production reduction to cut carbon emissions.

Overall, we believe that the current elevated inflation amongst developed countries, the type that worries market participants and pensioners when running above 3% in annual terms, will be mostly transitory in nature and ebb over the next year or so. Relatively higher inflation should, however, become somewhat "sticky", settling either sustainably around the traditional inflation targets from most Western world central banks or, in some cases, potentially more than these targets for some of the reasons noted above.

Chart 4: AIMCo's Long-Term Inflation Scenario



Forecast by Asset Class — Fixed Income

Overview

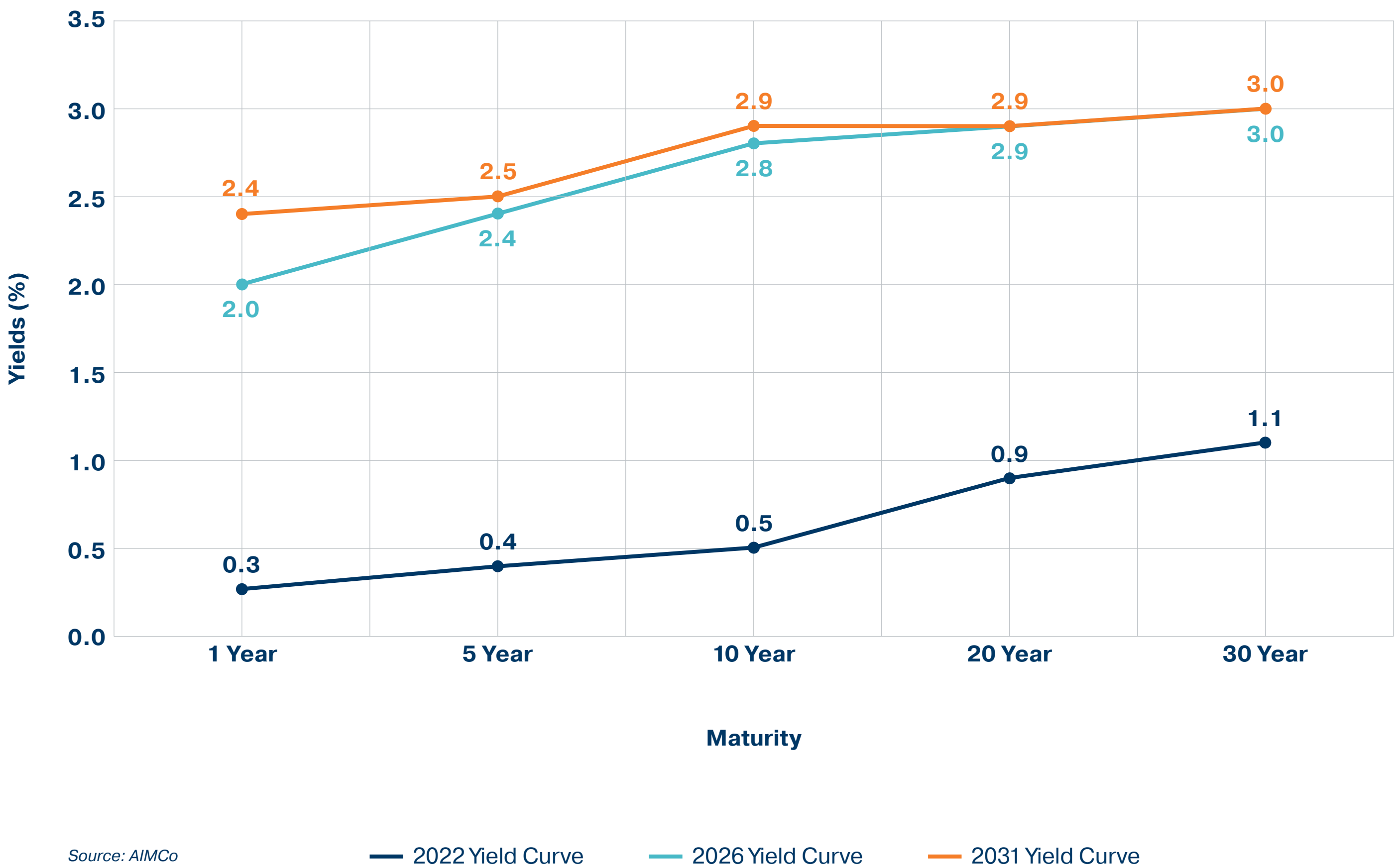
Globally, central banks are under pressure to respond to rising prices, and the Bank of Canada (BoC) is no different. In response, fixed income markets have begun pricing in a higher rate environment, a trend we believe will continue over the medium term. In addition to inflation pressures, the economy has recovered substantially since the onset of the COVID-19 pandemic. The combination of rising prices and a strong economic recovery fulfill the BoC's dual mandate. As a result, they are now highly incented to begin a rate liftoff sometime during 2022.

As the economy continues to recover and inflation edges higher, our expectation is for the yield curve to rise with a flattening bias, especially in the beginning part of the forecast horizon. Longer-duration assets will be particularly affected as a result.

While the economic data and BoC signals are in a state of flux at the start of 2022, we have pencilled in a minimum of two to three rate hikes by the BoC this year and gradually rising short-term interest rates over the next decade. We expect long-term rates will also move upwards, eventually reaching just shy of a 3.0% yield. Bonds will continue to be a great source of liquidity and will provide a degree of diversification in a balanced portfolio.

Credit spreads remained resilient during 2021. Our economic growth forecast implies credit spreads will be supported and trade within the lower end of their historical range over the next 10 years. Alternative credit asset classes, namely Private Debt and Loan and Private Mortgages, provide opportunities for AIMCo to selectively underwrite unique credit opportunities and are expected to generate a premium over their public market comparables.

Chart 5: Canadian Sovereign Yield Curves 2022 Economic View



Source: AIMCo

Building Blocks

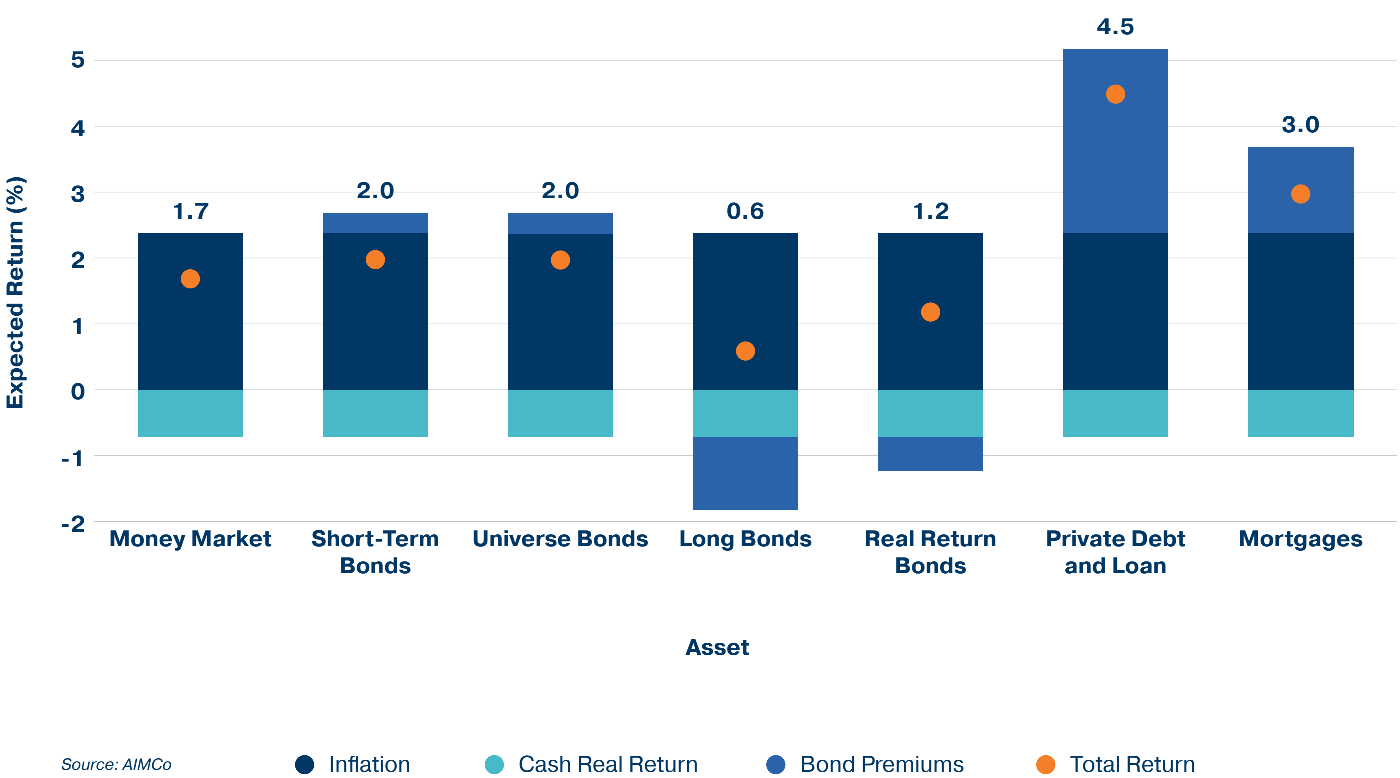
AIMCo's fixed income capital market assumptions are based on interest rate forecasts, term premiums, roll returns and credit spreads/expected default loss. These underlying components are consistent with our global, long-term economic scenario.

Chart 6: Building Blocks of Fixed Income Return Assumptions

Building Blocks	Definition	Output		Capital Market Assumption
Term Premiums	The compensation required for a longer investment horizon		Premiums for Longer-Duration Bonds/Credit	Total Return
Credit Spread	The compensation for a greater risk of default			
Roll Return	The impact of movement along the curve with time			=
Cash Real Return	Short-term real cash return	Nominal Return Forecast		
Long-Term Inflation Expectation	Average inflation expectation over the next decade			

Source: AIMCo

Chart 7: Building Blocks for Fixed Income Assets



Source: AIMCo

Sub Asset Classes

Money Market

Expected Return 1.7% | Expected Risk 0.1%

Benchmark Description

FTSE Canada 91-Day T-bill Index

Market Comments

After almost two years of interest rates near zero, we expect money market rates to begin increasing in 2022. Economies across the globe, including Canada, have reported rising inflation figures. As prices march higher, pressure mounts on central banks to begin raising rates. Without a series of increases in policy rates, the ability of central banks to keep inflation expectations grounded will be at risk.

Shifting the focus to the long-term view, a limiting factor to the upper bound of money market rates may be the economy's ability to absorb higher interest rates. While we do expect higher short-term interest rates, the nominal returns on cash over the next 10 years will continue to be low for an extended period. When coupled with our view on inflation, real returns are expected to remain negative in the short term before returning to more modest levels in the long term.

Short-Term Bonds

ST.

Expected Return 2.0% | Expected Risk 1.8%

Benchmark Description

FTSE Canada Short-Term All Government Bond Total Return Index

Market Comments

The market has already begun testing the tolerance of central banks of an inflation overshoot by pricing in interest rate hikes over the 2022 and 2023 periods. While this move resulted in a difficult environment for 2021, the starting point for 2022 is a market well on its way to pricing in a return to pre-pandemic policy rates. Accordingly, if policy rates have limited room to rise above pre-pandemic levels, then short-term bonds are better positioned to provide positive, albeit low, returns for the decade to come.

Universe Bonds

Expected Return 2.0% | Expected Risk 4.2%

Benchmark Description

FTSE Canada Universe Bond Total Return Index

Market Comments

The persistence of high inflation readings across most developed markets resulted in a repricing of bond yields higher, earlier than what was generally expected in the first part of 2021. As a result, most points on the yield curve have returned to levels generally prevailing before the onset of the pandemic. This implies that the market expects inflation to decline back towards the pre-pandemic comfort level of 2%. If this transpires then universe returns are poised to return to positive levels for 2022. Over the long-term horizon, a gradual rise in the yield curve will lead to softer returns. The primary risk to this outlook is that inflation expectations reset materially higher, and for longer than the 2% level and bring bond yields higher along the way.

Long Bonds

LT.

Expected Return 0.6% | Expected Risk 7.3%

Benchmark Description

FTSE Canada Long-Term All Government Bond Total Return Index

Market Comments

Given the global increase in bond yields over 2021, long bond returns were poor. Under the surface, however, the rise in yields for long bonds was generally less than what was experienced by shorter maturity bonds. This reflected confidence by the market that the current boost to inflation will prove temporary as central banks are believed to be up to the challenge of containing inflation. With long bond yields returning to levels prevailing prior to the pandemic, there is a reasonable prospect of positive returns over the next decade. At longer horizons, our projected rise and steepening of the yield curve, particularly for longer-duration securities will hinder long bonds returns. This benign outlook for long bonds is predicated on a continued muted outlook for long-term inflation. If long-term inflation expectations ratchet higher, further poor performance from long bonds will be expected.

Real Return Bonds

Expected Return **1.2%** | Expected Risk **7.5%**

Benchmark Description

FTSE Canada Real Return Bond Total Return Index

Market Comments

The emergence of inflation as a central market theme led to the outperformance of real return bonds over nominal bonds in 2021. Driving the outperformance was the fact that realized inflation turned out to be much higher than the expectations priced by the market to start the year. Demand for inflation protection, combined with fears of financial repression if policymakers stealthily inflate their way out of high public debt levels, has resulted in low to negative real yields across the maturity spectrum. As a result, a return to the pre-pandemic yield and inflation environment would likely result in a reversal of the outperformance of real versus nominal bonds. For the coming decade, a transition to a persistently higher inflation regime would provide a tailwind for further real return bond outperformance over nominal bonds.

Private Debt and Loan

Expected Return **4.5%** | Expected Risk **4.8%**

Benchmark Description

40% S&P/LSTA Leveraged Loan Index
+ 40% S&P European Leveraged Loan Index + 90 bps

Market Comments

The size of the global private debt market is expected to continuously grow year over year, benefiting from the increase of financing demand for private transactions across various segments of the private debt market globally, including Asian markets. We view returns from this asset class as consisting of two fundamental factors, the base rate and a credit spread. In the near term, we expect inflationary pressures will drive the base rate higher. In the longer term, however, we believe the base rate will stabilize before declining as the economic cycle matures and inflation steadies. Credit spreads tend to widen during or after a recession as the economy recovers, and subsequently tighten as the credit cycle matures. Over 10 years, we forecast the credit spread, on average, to be consistent with the level observed across historical credit cycles.

Mortgages

Expected Return **3.0%** | Expected Risk **2.5%**

Benchmark Description

60% FTSE Short-Term Overall Bond Index and 40% FTSE Canada Mid-Term Overall Bond Index + 50 bps

Market Comments

Lenders continue to have a robust appetite for loans secured by industrial, logistics and multifamily properties. Ample liquidity from Canadian lending peers is expected to keep commercial mortgage spreads at or below long-term averages for the foreseeable future.

Higher inflation in 2021 and the associated rise in government bond yields have put downward pressure on mortgage returns in the existing portfolio. However, mortgage performance has been buoyed by declining mortgage spreads resulting in near-zero absolute returns. Looking ahead, mortgage returns are expected to trend positive if inflation expectations are correctly priced into the yield curve. Higher than expected inflation and rising bond yields could result in negative mortgage returns, subject to changes in commercial mortgage spreads over the forecast horizon. Even with rising bond yields, all-in costs for real estate borrowing remain historically low. Further increases in bond yields and substantial liquidity in the mortgage market could result in mortgage spread compression as lenders seek to maintain their all-in return.

Forecast by Asset Class — Illiquid Assets

Overview

Illiquid assets are crucial in constructing a well-diversified portfolio. These asset classes exhibit low correlations to traditional fixed income and public equity markets. Investment opportunities in private asset markets are unique, even within the same asset class category, which helps diversify the risk across the portfolio. One commonality between these asset classes is the longer investment lifespan, which is suitable for long-term investors. Furthermore, the illiquid nature of these investments generally means a higher premium and therefore a higher expected return. Over time, investors' appetites for illiquid assets have increased, and our clients have also begun to allocate more to illiquid asset classes to take advantage of the attractive return-risk characteristics. This trend shows no sign of slowing down.

Our 2022 forecast paints a favourable picture for all private assets with strong earnings growth potential. Currently, on behalf of our clients, AIMCo invests in private Canadian real estate, foreign real estate and private equity, infrastructure and renewable resources globally. The building blocks, explaining the sources of return for each private asset class are discussed in their respective sections.

Sub Asset Classes

Real Estate — Canadian and Foreign

Canadian Real Estate

Expected Return
5.8%

Expected Risk
7.8%

Benchmark Description

REALpac/IPD Canadian All Property Index
– Large Institutional Subset

Foreign Real Estate

Expected Return
7.5%

Expected Risk
8.9%

Benchmark Description

MSCI Global Region Property Index

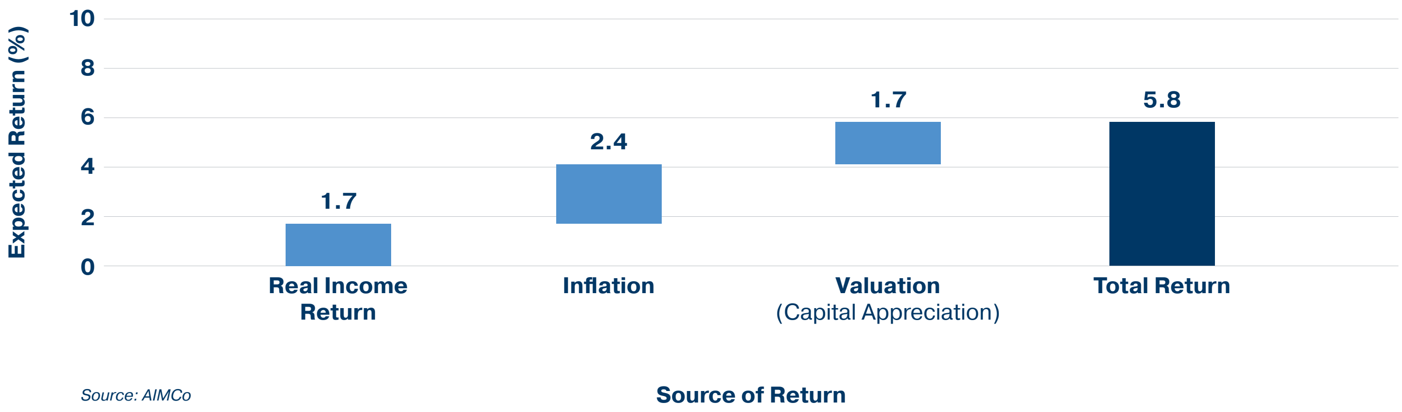
Building Blocks

For real estate, current income yield, expected inflation and yield curve assumptions are amongst the variables used to determine long-term return forecasts. We model the asset class using a capitalization rate (cap rate) approach. The beginning real estate yield is used as one of the primary inputs. Real estate yields are forecasted using a pass-through rate of Canadian CPI inflation.

Forward real estate cap rates are derived from a combination of the current cap rate, the duration-matched nominal government bond rate scenario and real GDP growth of the respective countries which are parts of the foreign real estate benchmark. The cap rate path is used to determine the valuation change.

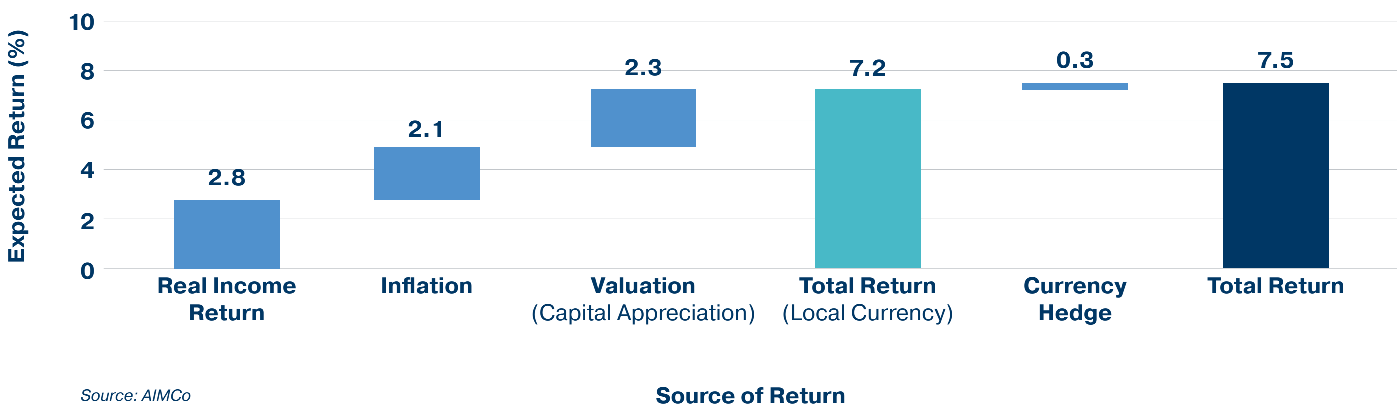
Detailed values for Canadian and Foreign real estate building blocks are shown in the following exhibits. We continue to expect foreign real estate to provide a higher return environment for investments compared to Canadian market. Given our economic view on a higher inflation rate in Canada, the foreign currency exposure will help add to the gains for this asset class.

Chart 8: Building Blocks for Canadian Real Estate



Source: AIMCo

Chart 9: Building Blocks for Foreign Real Estate



Source: AIMCo

Market Comments

With vaccination rates increasing in most G8 nations and work-from-home orders being relaxed there has been promising growth in economic activity. In some sectors, the rapid increase in demand has caused shortages and price increases for some goods and commodities. In particular, construction costs for the delivery of new properties, have been significantly impacted. Investors are exhibiting a strong appetite to own real estate resulting in high transaction volumes. Two factors, the weight of buyer capital in the market and an accelerated focus on ESG investing have seen core assets and recently certified sustainable assets being bid to low initial rates of return. A bifurcation by sustainability scoring could see lower or not-rated assets trading with higher returns and require major capital investment to remain viable versus top-quality assets. The pace of the development or refurbishment of assets could determine the range of this return difference.

Supply and demand fundamentals of property markets are returning to a more regular pattern providing a stabilizing effect on return levels. Employees have begun returning to dense urban markets as most large office employers reopen offices and mandate workers to return to the office for a minimum number of days each week. Lifted restrictions benefitted enclosed retail centres, as shoppers returned with increased savings to spend. Valuations trended flat to marginally higher in 2021, with an expectation of bottoming out in 2022 and rebounding in the years beyond. The long-term return projections reflect this levelling of values in 2022, with growth to emerge in 2023.

Secular trends, including increasing online retail sales penetration, will continue to impact real estate investment trends with continued demand for logistics and last-mile distribution facilities. In addition, renewed interest and return to urban centres are reinforcing urbanization trends driving demand for real estate in dense urban areas, with multi-family apartments being a primary beneficiary of these trends.

Infrastructure

Expected Return
7.5%

Expected Risk
10.4%

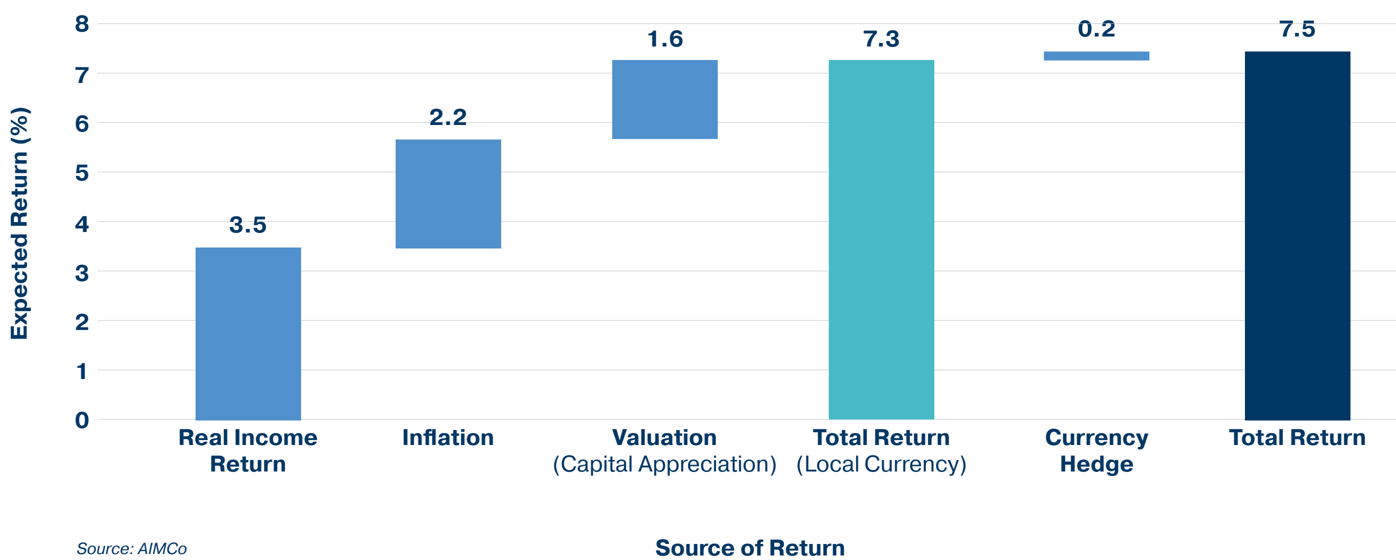
Benchmark Description

Total CPI 1 Month Lagged + 450 bps (5-year rolling average)

Building Blocks

Many real assets, including infrastructure, provide both inflation protection and an income stream to investors. While the degree to which a pass-through inflation rate impacts infrastructure return can vary based on specific investments, overall, we expect infrastructure as an asset class will benefit from the higher expected inflation rate over the forecast horizon in this year's economic forecast. The detailed building block values contributing to our return forecast are shown in the following exhibit.

Chart 10: Building Blocks for Infrastructure



Source: AIMCo

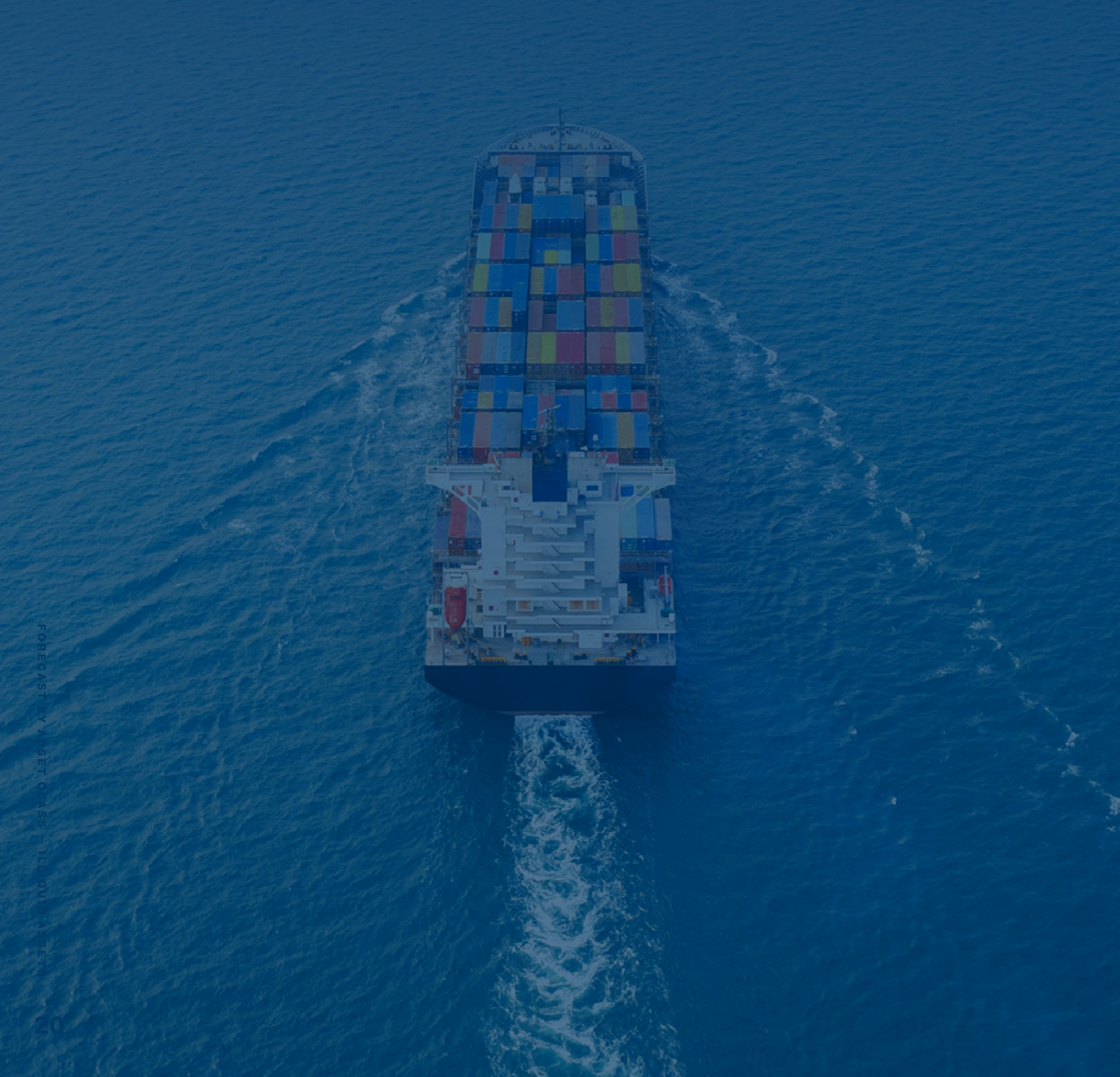
Market Comments

In the previous year, the COVID-19 pandemic and its effects on various asset classes were front and centre on return expectations and individual sub-sector trajectories. This year, this is still a consideration but much of what was expected to evolve has come to bear — most infrastructure assets have continued to hold up well given their essential service nature, with many rebounding from temporary pandemic-induced demand depressions or slumps. Some specific areas continue to be held back with follow-on waves of COVID pushing out more normalized demand levels (e.g. airports). Others have realized strong, above-trend demand (e.g. ports), induced by the pandemic stimulus. Our expectation over the medium term is for continued normalization in demand levels from the post-pandemic response.

The fiscal and monetary stimulus that has been put forth by both government and central banks to help bridge the pandemic appears to have worked as intended, thus far. Now the focus is shifting towards its reversal and navigating unintended policy errors — namely removing stimulus too quickly and risking a renewed downturn slump in demand, or not quickly enough and causing fundamental shifts to inflation expectations. As for infrastructure, the asset class can be somewhat resilient to deal with longer-term inflation risks. Many assets have certain pass-throughs for inflation and/or costs via contracts or regulatory mechanisms, albeit they are often trailing with lags. The hard asset nature and high operating margins also can provide relative protection in longer-run, cost-rising environments. That said, it is not a perfect linkage, and it varies among the individual sub-sectors. Further, it typically does not offer significant protection to temporary spikes.

Other notable medium-term themes for the class include ESG, energy transition, digitalization and continued robust demand for investment within the asset class. On ESG, decarbonization and further integrating ESG factors into the investment process continue to be of heavy focus. Digitalization trends also continue with strong growth for additional assets, including data centres, communication towers and fiber route miles. Last, the historical imbalances between investment supply and capital demand to the asset class remains. While there is a huge need for new and improved infrastructure in many areas globally, there remains a gap as far as what is actually "investible" to private capital, which continues to push up valuations given continued robust funding and allocations to the asset class.

Forward returns for the asset class are expected to normalize after material volatility from the pandemic. New opportunities are likely to emerge over the next years from the energy transition and be broader than just growth in renewable energy. Some progress on de-risking is needed before material opportunities open up and become mainstream. Returns should revert toward recent historical trajectories with competing factors somewhat balancing out (inflation pass-throughs, rising costs, continued supply/demand imbalance and rising long-term discount rates).



Renewable Resources

Expected Return **7.1%**

Expected Risk **10.0%**

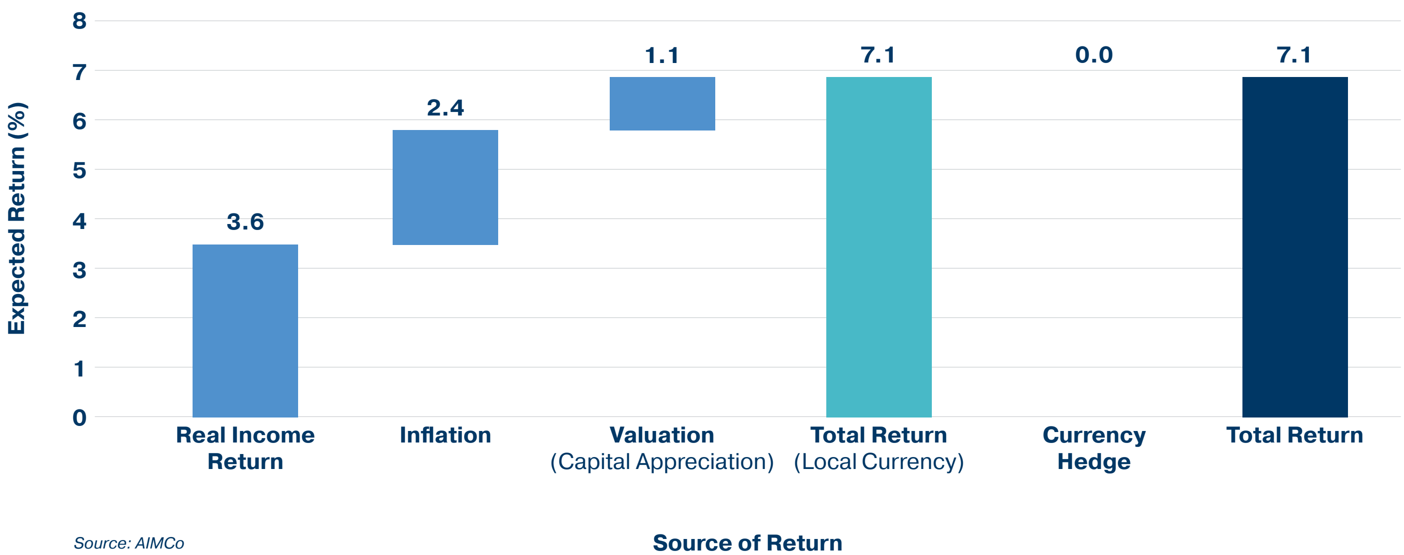
Benchmark Description

Total CPI 1 Month Lagged + 450 bps (5-year rolling average)

Building Blocks

Renewable resources is another asset class which provides a degree of inflation protection for AIMCo clients. We utilized a similar model to last year, incorporating both income generation capacity and valuation growth for this asset class. Our building blocks are highlighted in the following exhibit.

Chart 11: Building Blocks for Renewable Resources



Source: AIMCo

Market Comments

The primary underlying assets within renewable resources are timberland and farmland. Land investments provide capital preservation via underlying land investments, income from lease revenues and/or selling commodity products, and upside through land price appreciation.

The medium to long-term prospects for both timberland and farmland remain positive. Growing middle-class populations globally will intensify the demand for forest and agricultural products. At the same time, the supply of arable land to grow trees and crops is finite and decreasing due to competing land uses and climate change.

The demand for timberland and agriculture investments has increased as investors seek low correlations to conventional asset classes, inflation protection and positive sustainability attributes.

Underlying land values are generally correlated with inflation, whereas the impact on the income component of returns depends on the extent to which inflation impacts commodity prices/ revenues and costs. Additional competition has driven valuations higher and compressed expected returns. The recent acceleration of the ESG movement has highlighted the positive sustainability characteristics of timberland and agriculture investments. Expected return sources have evolved beyond traditional income as more value is being placed on carbon sequestration, conservation and biodiversity.

Key risks to renewable resources returns include rising interest rates, decreased production due to natural disasters or climate change and lower commodity prices.

Private Equity

Expected Return
10.1%

Expected Risk
12.1%

Benchmark Description

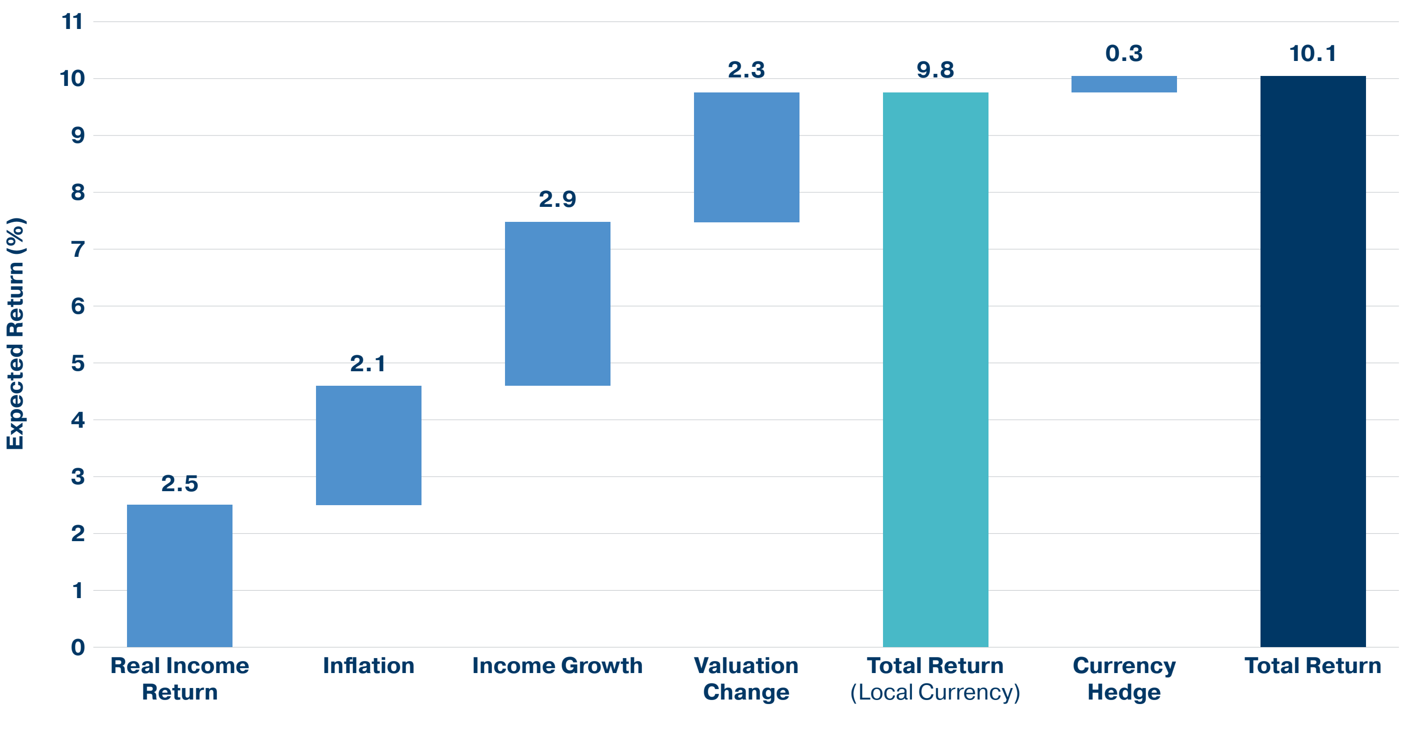
Total CPI 1 Month Lagged + 650 bps (5-year rolling average)

Building Blocks

Our private equity model, based on an AQR paper2 we introduced in previous editions of our forecast, has similarities to the building blocks we use for public equities. Unlike public equities, however, we provide an earnings yield estimate that combines considerations for both dividends and buybacks. Our modelling framework uses a public equity comparable, namely MSCI World Index, to estimate the starting earnings yield and its long-term average, translating to an expected earnings yield of 2.5%. Based on our global GDP growth estimate we assume real growth to be 2.9% for the decade.

Similarly, global inflation is expected to land at 2.1% over the next 10 years, boosting total returns. Valuation is the most challenging parameter to estimate over the long term. We use two metrics from data provider Preqin, “weighted net multiple” and “residual value to paid-in” ratio. By combining the effect of the convergence of the metrics from their current value to their long-term average, we expect a return from valuation gains to be 2.3%. The aggregate effect of all factors produces an expected return of 10.1% over the coming decade.

Chart 12: Building Blocks for Private Equity



Source: AIMCo

2. Source: Demystifying Illiquid Assets: Expected Returns for Private Equity, AQR Whitepaper 1Q19, by Antti Ilmanen, Swati Chandra, Nicholas McQuinn

Market Comments

Private equity continues to be an attractive asset class. The combination of substantial dry powder from a robust fundraising market and an abundant supply of debt has created plenty of scope to execute transactions, which is reflected in deal volumes. According to Pitchbook, the total deal value of U.S. private equity transactions through the first 9 months of 2021 was USD 790 billion, exceeding the previous high of USD 750 billion in 2019. In Europe, the pace of private equity transactions has been similarly strong, representing EUR 550 billion in transactions, exceeding the previous high of EUR 490 billion in 2018. The rapid recovery in transactions stands in sharp contrast with the start of the previous expansion post-GFC, which saw a significant decline in deal activity during GFC, and a much slower recovery after the GFC.

In terms of sectors, tech and software have been an important focus in this recovery. But this also extends beyond simply the tech sector directly and into deploying technology in other sectors, so-called “tech beyond tech”. This can be seen in the rise in the share of tech deals in U.S. private equity deals, a continuation of its rise in recent years, as well as an increase in both business and consumer products and services deals that likely have a significant technology element.

Of large deals (greater than USD 1 billion), these three categories account for nearly 90% of deal activity in value terms. It is also reflected in the fact that software private equity deal activity in the first 9 months of 2021 was USD 110 billion compared to a previous record in 2019 of just under USD 100 billion. Similarly, European private equity deals have seen an increase in the share of tech deals.

We expect private equity to continue to be an attractive asset class. Although valuations are high, the backdrop for exits is positive. Exits, whether through public listings or sales to either another private equity fund or a corporate entity, free up capital for reinvestment and allow for the realization of a “paper” return. Moreover, we expect digital expertise and ESG capabilities to continue to emerge as sources of competitive advantage for investors. The best private equity firms can drive value through EBITDA growth and strategic repositioning by enhancing a portfolio company’s operations, digital capabilities and ESG governance.

Forecast by Asset Class — Public Equities

Overview

Compared to recent historical public equities market returns, our projections are more modest. Earnings growth is expected to be bound at the upper end by our GDP forecasts for each market. Corporate profit margins may come under pressure in the short term. Rising input prices and cost of debt may manifest as a double-headed risk, should we see persistent inflation. Equity markets are, however, real assets and their cash flows are expected to keep pace with inflation over the longer term.

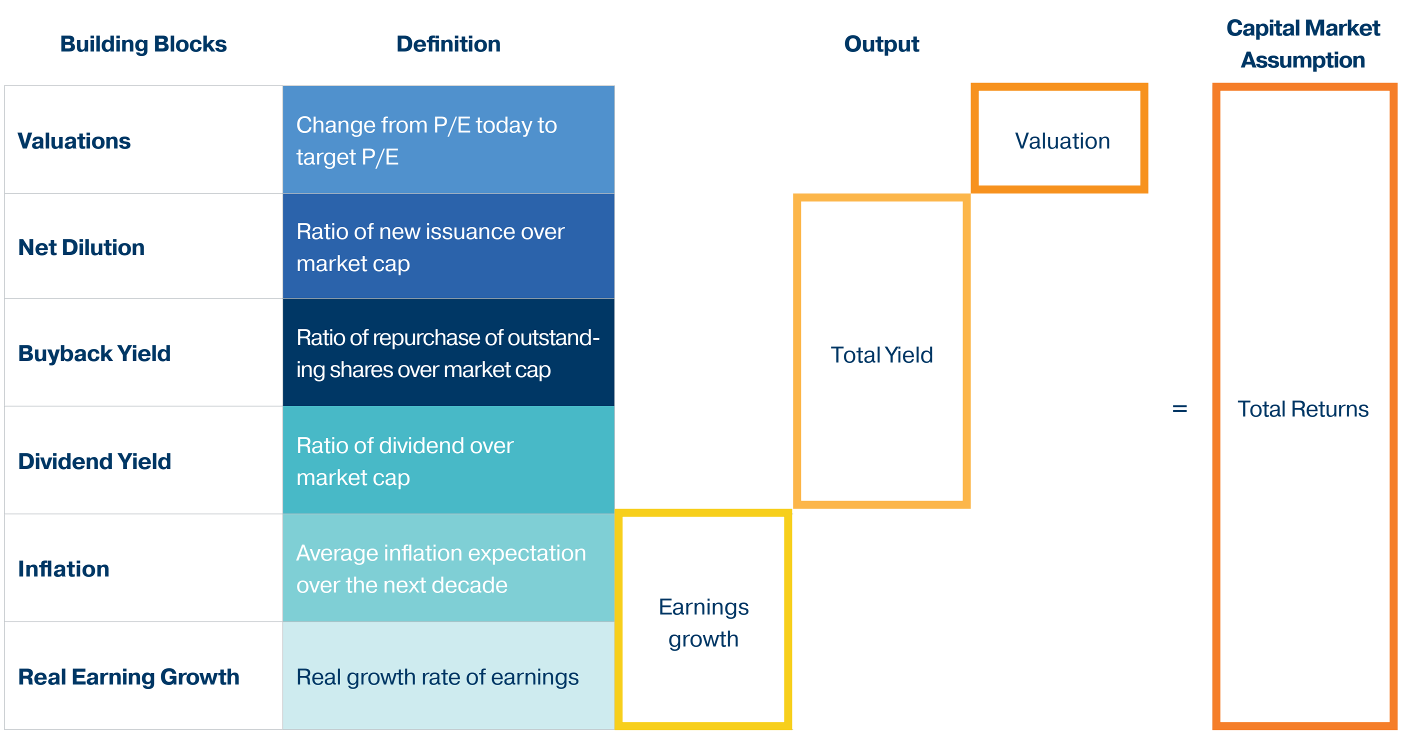
Dividends and buybacks are reliable sources of return in equity markets. Our models assume both will persist based on current trends. Except for certain emerging markets, such as China, and small-cap equities, valuations are expected to detract from equity returns over the next 10 years. Trailing 12-month Price-to-Earnings (P/E) ratios have improved since our last forecast, primarily due to strong earnings growth. Despite decreasing, P/E ratios remain elevated and above the long-term average. We assume valuations will revert to the mean over the forecast horizon.

Building Blocks

AIMCo's public equity capital market assumptions are based on forecasts in inflation, real earning growth, dividend yield, buyback yield, net dilution and valuations for the respective index. AIMCo incorporates a currency view through conversion to the Canadian dollar.

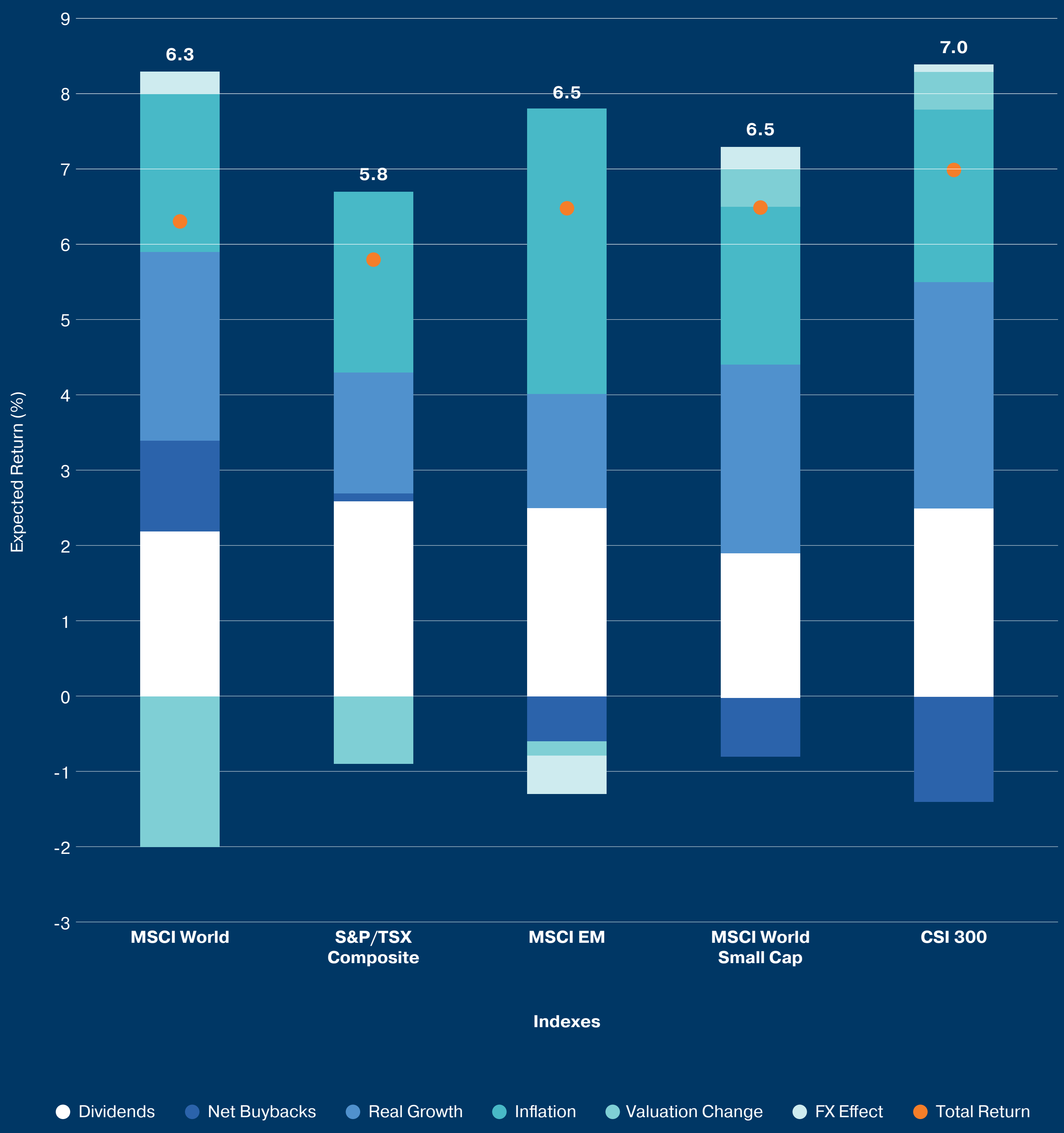
For public equity benchmarks, we define the expected return as being the combination of total yield (dividend yield and net buyback yield), expected trend growth (g) in earnings per share EPS, and expected change in valuations (Δv). That is: $E(r) \approx DY+g+\Delta v$

Chart 13: Building Blocks of Public Equities Return Assumptions



Source: AIMCo

Chart 14: Building Blocks for Public Equities Indices



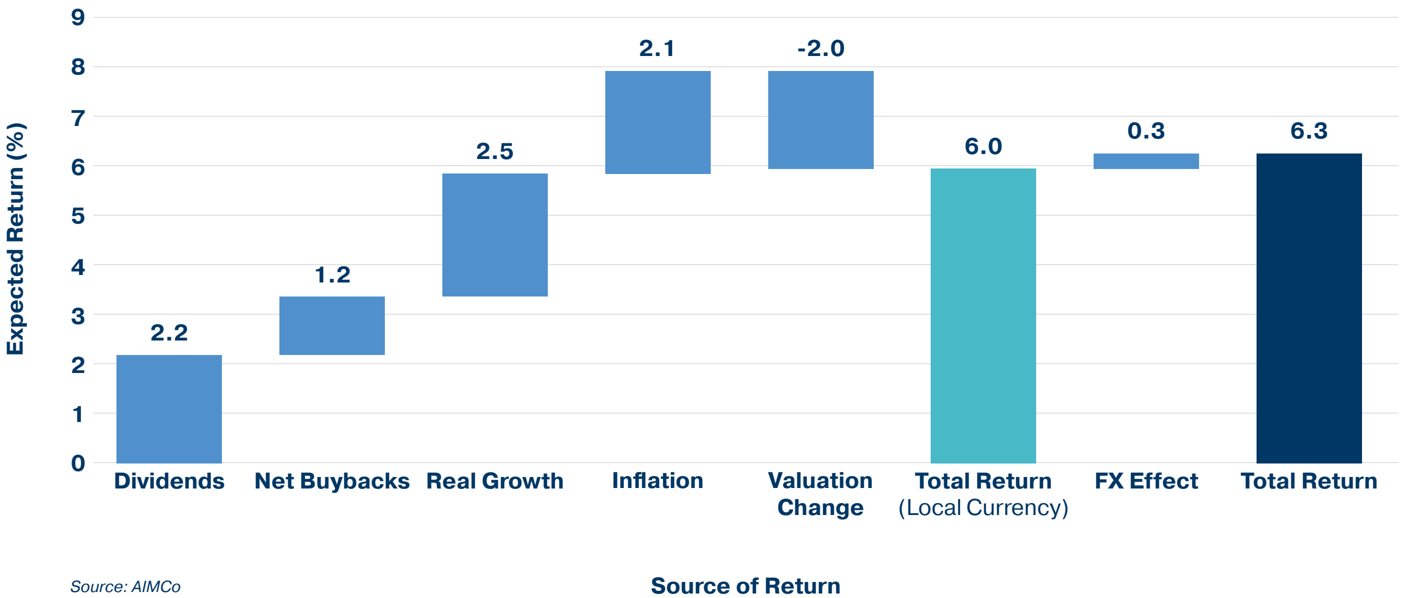
Source: AIMCo

Sub Asset Classes

Global Equities

Expected Return	Expected Risk	Benchmark Description
6.3%	11.8%	MSCI World Net Total Return Index

Chart 15: Building Blocks for MSCI World



Source: AIMCo

Market Comments

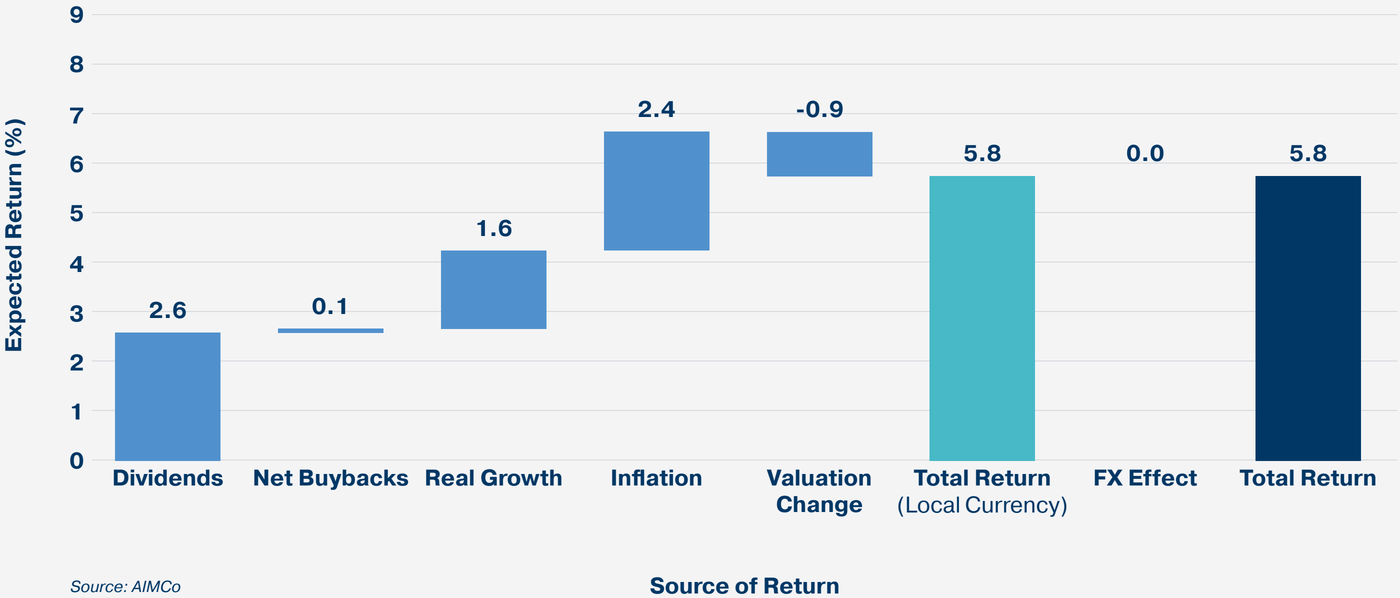
Although the U.S. continues to be a leader in equity market performance there was broad participation by virtually all developed markets. This was a result of the unprecedented and coordinated monetary and fiscal stimulus that more than encouraged an economic recovery and translated into healthy earnings growth touching most industries. While the prior year saw a very narrow portion of the economy benefiting from the pandemic-induced shutdown, this year was a period of true recovery where the economic accommodation translated into increased labour participation, wage gains and support for the consumer in general. The magnitude and duration of stimulus have been so great we continue to see negative real interest rates despite the underlying strength of labour markets and economic activity.

Our projections are supported by a global economy that will continue to expand while tapering of stimulus and central bank rate normalization occurs. In this environment, the growth outlook becomes even more important to overall valuations. While the pandemic's periodic lockdowns have no doubt played a temporal role in supply-chain-related inflation, developed markets have looked beyond these disruptions as being transitory. The primary contributors to our forecast are steady net dividend yields and strong earnings growth, both real and nominal. Should shipping delays and supply chain bottlenecks become the norm and begin to cloud forward earnings visibility, global developed markets could reassess their demands on equity risk premia and pressure valuation levels We believe valuations will return to more historical norms over the next 10 years, which is the primary detractor of our forecast.

Canadian Equities

Expected Return **5.8%**	Expected Risk **15.0%**	**Benchmark Description** S&P/TSX Composite Total Return Index

Chart 16: Building Blocks for S&P/TSX



Source: AIMCo

Market Comments

For Canadian equities, tremendous earnings growth in the past year encouraged a pro-cyclical rotation in the market following a trough in the economy and earnings in 2020. As mobility and economic activity recovered, so did earnings led by a strong resumption of growth in the commodity cyclical, financial and industrial sectors. The positive performance of the Canadian market was broad-based with all but two sectors generating a positive return.

This was reflective of the growing confidence in the improving prospects for the underlying companies. Canadian equities continue to trade at lower valuation levels relative to the U.S. market which is most likely due to the greater cyclicality in its earnings base and its persistently lower profitability.

Emerging Market Equities

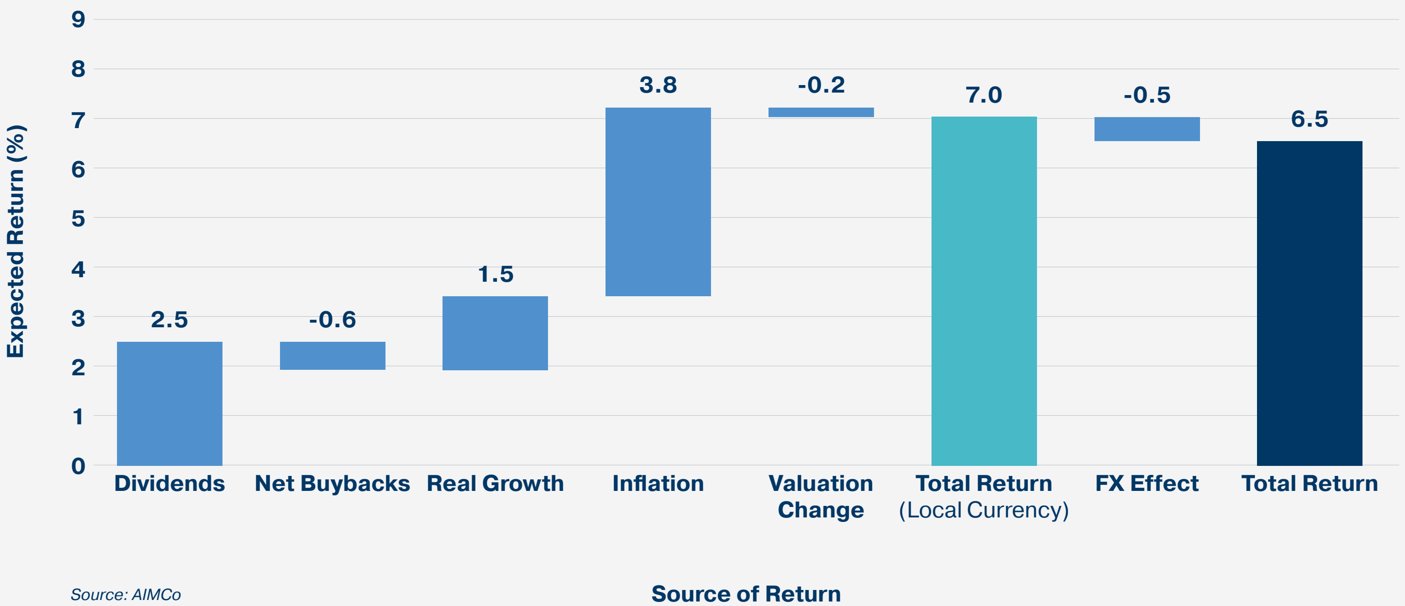
Expected Return **6.5%**

Expected Risk **16.6%**

Benchmark Description

MSCI Emerging Markets Net Total Return Index

Chart 17: Building Blocks for MSCI Emerging Markets



Source: AIMCo

Market Comments

After a challenging 2021 in emerging markets equities driven largely by currency weakness, pandemic-related shocks and inflation concerns, we see reasons for cautious optimism in 2022 and beyond. Valuation support is evident, and rate-tightening cycles have already begun in key emerging markets. Nonetheless, U.S. tapering and probable Fed rate hikes would imply some degree of emerging market capital flight as in prior cycles, and rising food costs and energy prices will test the resolve of emerging markets' central banks.

All eyes will remain on Brazil's ability to combat double-digit headline inflation and any potential contagion impact from Turkey's ongoing currency crisis. Emerging markets have the unique benefit of being one of the only equity markets globally with valuation levels that we expect to increase over the coming decade.

Global Small Cap Equities

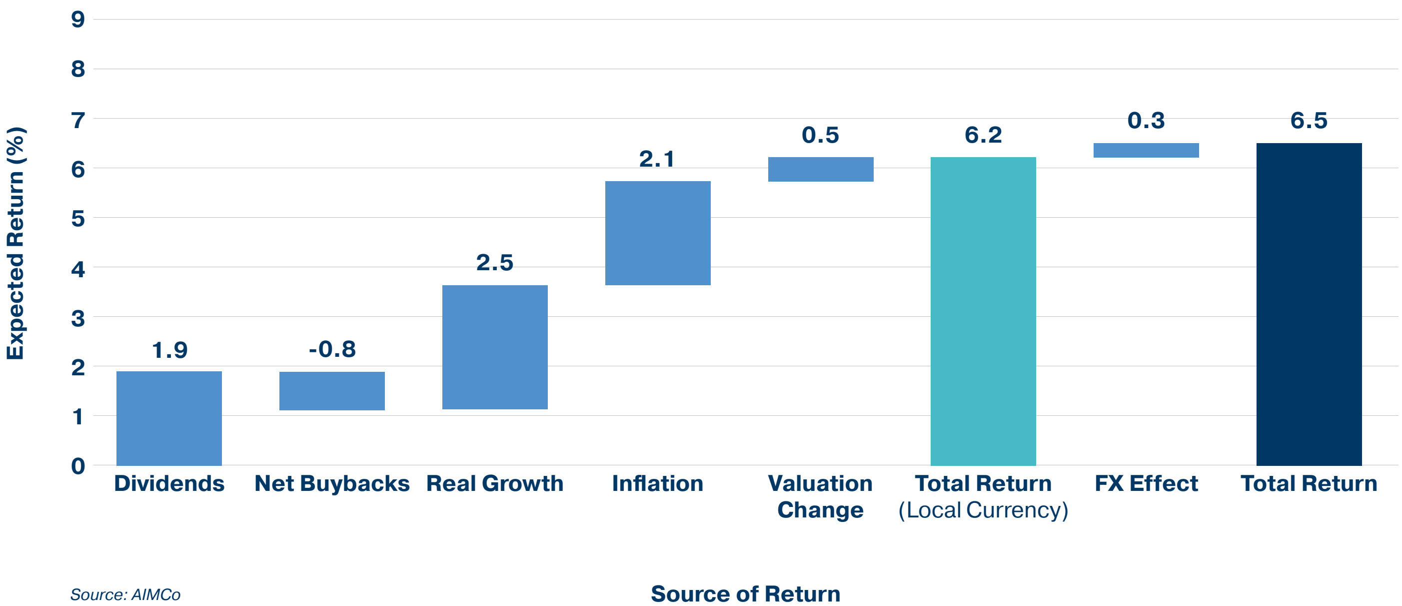
Expected Return
6.5%

Expected Risk
13.5%

Benchmark Description

MSCI World Small Cap Net Total Return Index

Chart 18: Building Blocks for MSCI World Small Cap



Source: AIMCo

Market Comments

As is typical of small caps, performance was very strong during the initial recovery following the onset of the global pandemic. Small caps have, however, gone sideways since the spring of 2021 while the larger cap companies continued to move higher. As earnings and profitability continue to grow, there continues to be an opportunity in small caps particularly as the economic reopening continues to unfold, a greater portion of the labour force returns to work and as earnings growth continues to outpace its larger cap peers.

In addition, valuation levels support small-cap equities and are expected to deliver a positive contribution to small-cap returns over our forecast horizon.

Chinese Equities

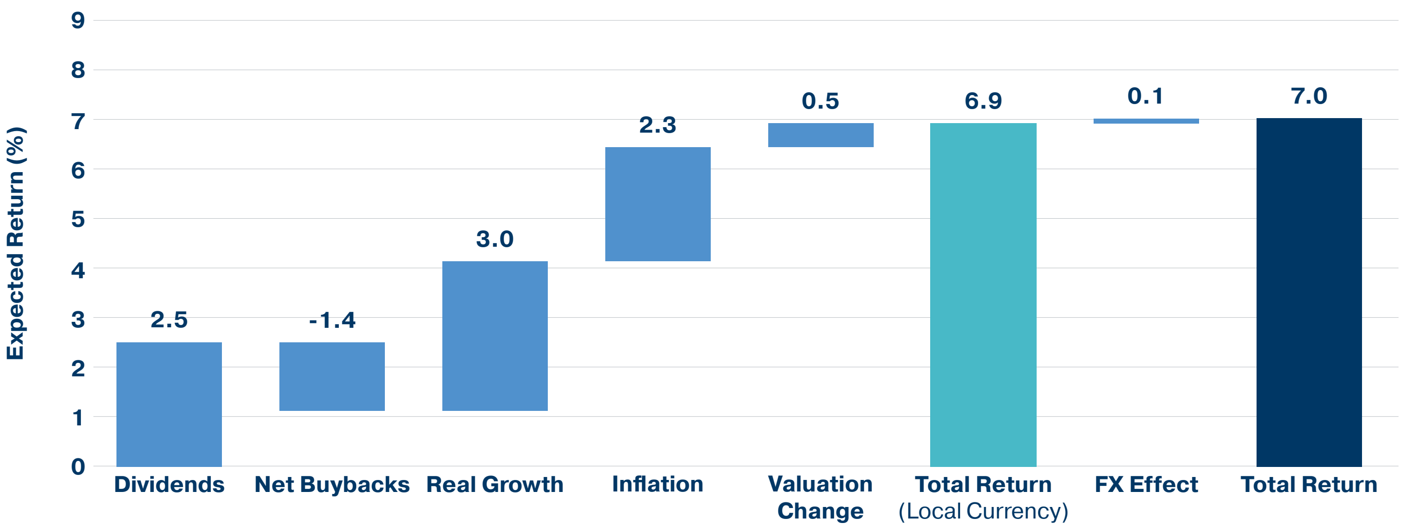
Expected Return **7.0%**

Expected Risk **26.9%**

Index Description

Shanghai Shenzhen CSI 300 Index

Chart 19: Building Blocks for Shanghai Shenzhen CSI 300



Source: AIMCo

Source of Return

Market Comments

In China, the world's second-largest equity market continues to provide a broad array of long-term investment opportunities. Nonetheless, 2021 provided the first significant performance differential between China and its regional neighbours in several years. The Chinese central government's rolling crackdowns on the media and technology sectors have dampened investor sentiment, yet no more so than an escalating trade war with the U.S. In addition, the broader impact of the Evergrande property collapse has led some observers to label the event as China's sub-prime crisis.

With this backdrop, we are anticipating further volatility in Chinese equities for the foreseeable future. Mainland Chinese equities continue to be dominated by retail investors rather than institutional investors, so remain susceptible to market shocks. Over the coming years, this should be an ideal environment for stock pickers prepared to capitalize on market inefficiencies yet prepared to withstand oscillations in investor sentiment.

Risk Forecast Methodology

The AIMCo 2022 long-term risk forecasts are volatility estimates, which are useful for building portfolios based on a mean-variance optimization analysis. However, investors should also consider the broader concept of risk, including tail risks, which can be measured by Value at Risk (VaR) and Expected Tail Loss (ETL). In addition, some assets (e.g. real return bonds) may exhibit high volatility, but they help diminish inflation risk, which is important to investors sensitive to inflation. Although we will not cover the details of alternative risk measures, we would like to highlight the importance of understanding these dynamics, which can become particularly relevant in investment decisions.

This year, we are incorporating the results of a collaboration with our strategic partner AlphaLayer, to enhance the robustness of our risk forecast. AlphaLayer, a joint venture between AIMCo and AltaML, applies deep understanding and experience in machine learning techniques to deliver solutions specific to the investment management industry. The project focused on improving the reliability of the returns of illiquid asset classes our risk forecast relies on. Illiquid asset classes are valued infrequently and may not be marketable securities. As a result, illiquid assets can suffer from various biases and are difficult to compare to higher frequency data available for publicly traded assets. Adjusting the data for these shortcomings can improve the statistical nature of the dataset and produce more robust and realistic estimates of risk. A few of the specific adjustments made as part of this project were:

1. Seasonal effects of time series data were removed; for example, accounting effects that are noticeable at year-end.

2. Monthly data was imputed based on the adjusted quarterly data using machine learning techniques. The imputation considered not only an individual asset's return time series but also the appropriate statistical relationship with other assets.

AIMCo has implemented a VAR-GARCH-DCC[3] statistical model for risk forecasting. This model was proposed by Nobel laureate Robert Engle and Kevin Sheppard to estimate time-varying covariance matrices through the concept of Dynamic Conditional Correlation (DCC) estimators in 2001. The DCC estimators are combined with a multivariate VAR-GARCH in a parsimonious manner to estimate correlation matrices. The following considerations are given during the modelling process:

1. We employed a multivariate time series model, which is a suitable choice when both volatility and correlation vary over time. The use of time series with varying volatilities across time to model asset return data is also supported by extensive academic literature.

2. We used an asymmetric Student's t-distribution to incorporate skewness and kurtosis exhibited by most asset class historical statistical distributions.

3. We ensured the benchmarks would be provided at a high frequency with the requirement of trying to capture the true, underlying volatility properties of the respective asset classes.

4. We extended the benchmark historical data for modelling purposes.

5. We selected the risk benchmarks either following the AIMCo official asset class benchmarks or researched representative benchmarks for the underlying asset class.

Finally, an ensemble approach was used to combine the newly adjusted illiquid assets' return data from our AlphaLayer collaboration with our existing methods. The ensemble model limits the risk of a single model's assumptions and predictions dominating the results.

The long-term expected risks and correlations have also been reviewed by AIMCo's Chief Investment Officer and the Risk Management group.

Currency Forecast Methodology

To convert non-Canadian market returns to Canadian dollar terms, we adjust the expected return for a portion of the differential in expected inflation between other economies and Canada. The rationale is to somewhat equalize countries with relatively high inflation, which could reasonably be expected to have depreciating currencies, and countries with low inflation which could have appreciating currencies. Since the inflation pass-through mechanism is different between developed markets and emerging markets, we use different assumptions.

3. Vector Autoregressive - Generalized Autoregressive Conditional Heteroscedasticity - Dynamic Conditional Correlation

Disclaimer

Forecasted returns and risk estimates were developed by Alberta Investment Management Corporation and are for general information only. This information is not intended to provide specific advice to any individual. We make no representations or warranties with respect to the timeliness, accuracy, or completeness, and bear no liability for any loss arising from its use. All forward-looking information and forecasts contained herein, unless otherwise noted, are the opinion of Alberta Investment Management Corporation, and future market movements may differ significantly from our expectations. Index performance or any index related data is given for illustrative purposes only and is not indicative of the performance of any particular portfolio. Any performance data shown herein represents returns and is no guarantee of future results. Investment returns will fluctuate such that the value of holdings may be worth more or less than their original cost.

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