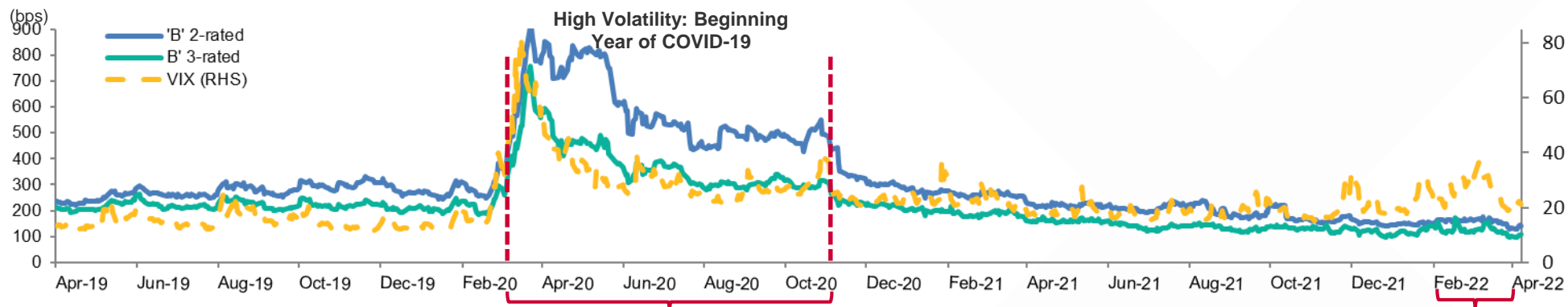


Volatility Focus: Evidence of Greater Stability Amid Market Uncertainty with a Fitch Rating

In stable market conditions and during moments of higher market volatility, three rated bonds continuously trade tighter than two rated bonds

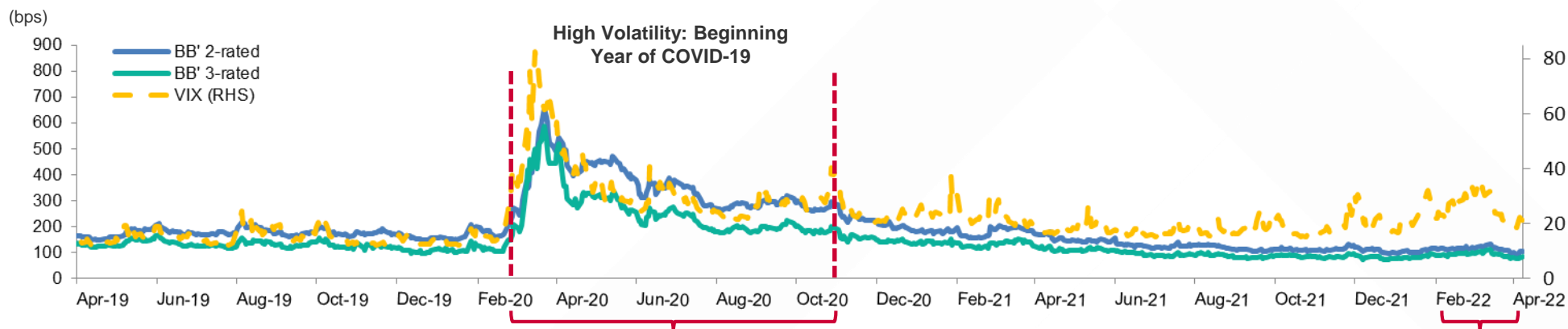
‘B’ Composite Daily Time Series (4/1/2019 – 4/11/2022)¹



**Three versus two rated differentials jump
~4x in periods of high volatility compared to before COVID-19**

**Russia-Ukraine War
Avg Savings: 35 bps**

‘BB’ Composite Daily Time Series (4/1/2019 – 4/11/2022)¹



**Three versus two rated differentials jump
~2x in periods of high volatility compared to before COVID-19**

**Russia-Ukraine War
Avg Savings: 21 bps**

¹ OAS data from ICE BAML HY Index (energy sector bonds have been excluded as they are trading more erratically due to COVID-19 and low oil prices/supply dynamics)
Source: FactSet as of 4/11/2022

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Key Data Points

- The VIX study⁽¹⁾ tested the theory that 3-rated bonds consistently trade tighter than 2-rated bonds, even during periods of high volatility, as measured by a lower Option Adjusted Spread (OAS)⁽²⁾. The population of 3-rated and 2-rated bonds are all pulled from the same HY index, which logs market cap, industry, rating from whom, etc. which makes the study possible/comparable⁽³⁾
- The results indicate that 3-rated bonds consistently trade tighter than 2-rated bonds, and that this is most pronounced during periods of high volatility. During the COVID-19 crisis, we found that for the 2- versus 3-rated population, the spread differential jumps 2 – 4x, compared to periods of low volatility – another indication of the market’s preference for more opinions, not only in stable times, but especially when faced with uncertainty and heightened volatility

Spread Differential for Two vs. Three ‘BB’ Rated Bonds

- 1/2/2019 – 2/26/2020: **42 bps**
- 2/27/2020 – 11/11/2020: **95 bps**
- 2/23/2022 – 4/11/2022: **21 bps**

Spread Differential for Two vs. Three ‘B’ Rated Bonds

- 1/2/2019 – 2/26/2020: **50 bps**
- 2/27/2020 – 11/11/2020: **204 bps**
- 2/23/2022 – 4/11/2022: **35 bps**

Methodology

- The analysis compares the secondary OAS trading levels of HY 3-rated versus 2-rated bonds from January 2, 2019 through April 11, 2022
- The bonds were based off of deals in the BAML HY Master II Index as of December 31, 2019⁽⁴⁾
 - 2021 analysis includes the BAML HY Master II Index as of December 31, 2021⁽⁴⁾
- OAS considers how an embedded option can change a bond’s future CFs and overall value to differentiate among similar products (i.e. bonds in this case) that have embedded options. A larger OAS means that the prepayment rate is greater so the return should likely be greater (think interest rate too)
- The BAML HY Master II Index contains 1,775 securities totaling \$1.2 trillion of par amount
- For the VIX study, ‘BB’ and ‘B’ Rated Bonds each accounted for ~33% of the HY Index
- To help normalize the data, we applied a standard deviation range of 2. As a result, 86% of ‘BB’ rated bonds and 91% of ‘B’ rated bonds were captured
 - 2-rated ‘BB’ Bonds: 283 deals
 - 2-rated ‘B’ Bonds: 323 deals
 - 3-rated ‘BB’ Bonds: 165 deals
 - 3-rated ‘B’ Bonds: 113 deals
- **In 2020, the following bonds priced and were added to our analysis:**
 - 2-rated ‘BB’ Bonds: 152 deals
 - 2-rated ‘B’ Bonds: 148 deals
 - 3-rated ‘BB’ Bonds: 99 deals
 - 3-rated ‘B’ Bonds: 45 deals

⁽¹⁾ The CBOE Volatility Index (VIX) is one of the most recognized measures of volatility and is widely known in the market as the “fear gauge”

⁽²⁾ Ratings are based on issue level. Three rated bonds are defined as having a Fitch, Moody’s and S&P rating at issuance, and two rated bonds have only a Moody’s and S&P rating at issuance. OAS spreads are from FactSet

⁽³⁾ We applied a numeric value to each rating notch. The composite rating to divide the deal into its bucket is the average of Moody’s and S&P rating at the security level, at issuance: BB+ to BB- (11 to 13) and B+ to B- (14 to 16)

⁽⁴⁾ Energy sector bonds have been excluded as they had been trading more erratically due to COVID-19 and low oil prices/supply dynamics

Source: FactSet