



## The Limits of Duration Risk: An Argument for Diversification in Fixed Income

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### IN BRIEF

- Some 72% of the securities in the Bloomberg Barclays U.S. Aggregate Bond Index are 'AAA' rated or government guaranteed. So, from a credit perspective, the index appears "safe."
- But duration risk has increased, and the market today is not rewarding investors with any premium to extend duration risk. In fact, investors are paying for the privilege of taking that risk.
- Many traditional risk premiums are compressed, and investors likely will need diversifiers beyond duration and equity beta to achieve their risk and return goals.
- Because short-term credit, by definition, limits duration risk and earns extra yield from credit exposure, it is, in a way, purpose-built to diversify from duration risk.

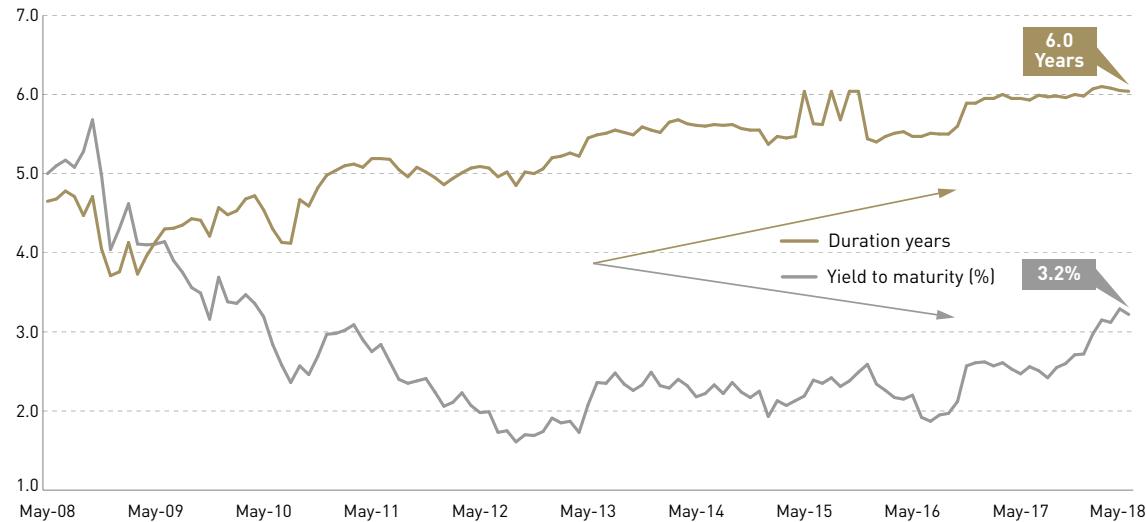
### THE RISK IN CORE

The risk migration of core fixed-income portfolios has been well documented by us and many others. Because the construction methodology of the core benchmark is issuance-based, the deluge of long-dated sovereign issuance in the era of quantitative easing (QE) has caused the representative benchmark, the Bloomberg Barclays Aggregate Bond Index ("Aggregate Index"), to become dominated by U.S. Treasuries and pass-through mortgages. On the surface, this isn't bothersome to many investors, since they look to their core bond portfolios for relative "safety" in terms of credit risk: 63% of the Aggregate Index is comprised of government securities or mortgage pass-throughs, while 72% of the securities are 'AAA' rated or government guaranteed. So, from a credit perspective, the Aggregate Index appears "safe."

However, the addition of all those Treasuries and mortgages has resulted in a substantial increase in duration without a commensurate increase in yield over the past few years. As shown in Chart 1, with the Aggregate Index yield only at 3.2% and a duration of six years, a 100 basis-point increase in the five-year rate can now negate up to two years of the index's returns.

### CHART 1. DURATION RISK IN THE AGGREGATE INDEX HAS INCREASED

Bloomberg Barclays U.S. Aggregate Bond Index duration and average yield, February 2005–May 31, 2018



## CHART 1. DURATION RISK IN THE AGGREGATE INDEX HAS INCREASED (CONTINUED)

Hypothetical Returns for Six-Year Duration Fixed Income in Rising Rates					
Rate Increase	No Change	+50bps	+100bps	+150bps	+200bps
Price Return	0.0%	-3.0%	-6.0%	-9.0%	-12.0%
Yield	3.2%	3.2%	3.2%	3.2%	3.2%
Total Return	3.2%	0.2%	-2.8%	-5.8%	-8.8%

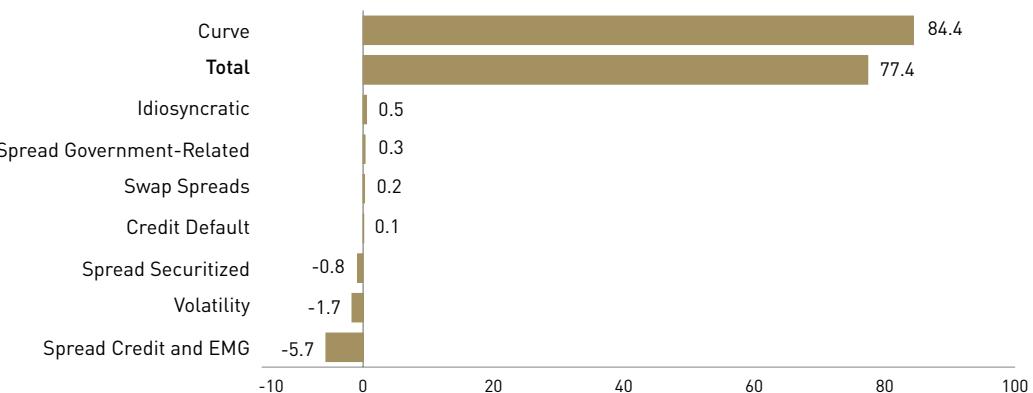
Source: Bloomberg Barclays.

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What's even more dramatic than those sensitivities is the magnitude of the concentration of risk. While examining the relative contribution of credit and interest rates to variance in index returns, we found that (as of June 30, 2018) more than all of the projected variance in the returns (relative to cash) of the Aggregate Index is due to movements in the interest-rate curve, with other risks such as credit or idiosyncratic movements acting as diversifiers. (See Chart 2.)

## CHART 2. SOURCES OF VARIATION IN RETURNS FOR CORE FIXED INCOME\*

Variance in returns relative to cash, as of June 30, 2018



Source: Bloomberg and Barclays. \*Core fixed income represented by the Bloomberg Barclays U.S. Aggregate Bond Index. Past performance is not a reliable indicator or guarantee of future results. For illustrative purposes only and does not represent any specific portfolio managed by Lord Abbett or any particular investment. Indexes are unmanaged, do not reflect the deduction of fees or expenses, and are not available for direct investment.

## THE PRICING OF DURATION RISK

Risk in itself isn't a bad thing. Balanced and properly targeted risk can be the foundation for good returns. But investors need to be paid a premium for the risks they take. Recently, yield-curve flattening, for example, has prompted investors to consider whether they are getting paid for interest-rate risk. Any flattening of the yield curve at the long end can be composed of one or both of two things: a decline in the expectations for future short-term interest rates and/or the decline in uncertainty around those future short-term interest rates. By most models (and there are varied approaches to estimating this), the latest flattening has been due almost entirely to a decline in *uncertainty* around future short-term interest rates, called *term premium*, and plotted in Chart 3.

While this source of flattening leads to a more sanguine expectation for equity-beta returns than a decline in the expectation for forward rates, it is an ominous sign that the dominant risk in most fixed-income portfolios—duration—may be distorted in a significant way. Fluctuations to the risk premium to term likely will be a meaningful driver of total fixed-income risk and future return. Today, according to the ACM model shown in Chart 3, the term premium is negative, and any amount of mean reversion or normalization will mean an increase in the premium to term risk and, likely, a steepening of the yield curve. For now, the market is not rewarding investors with any premium to extend duration risk. In fact, investors are *paying* for the privilege of taking that risk.

### CHART 3. ACM\* TREASURY TERM PREMIUM

Data as of May 31, 2018



Source: Federal Reserve Bank of New York. As represented by ACMTP<sub>10</sub>. \*Named after New York Fed economists Tobias Adrian, Richard Crump, and Emanuel Moench (or "ACM"), which present Treasury term premia estimates for maturities from 1–10 years, from 1961–2017.

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### DURATION AS A DIVERSIFIER

A curious reader might ask: why would investors pay to take duration risk? Like most aggregate market moves, the inversion of term risk premium likely has several causes. Central bank buying of bonds, for example, has been limiting supply, which could lead to higher prices and suppressed risk premiums among intermediate- and long-term bonds. A pronounced multiyear flight from credit- to liability-driven investing among pensions is another likely culprit.

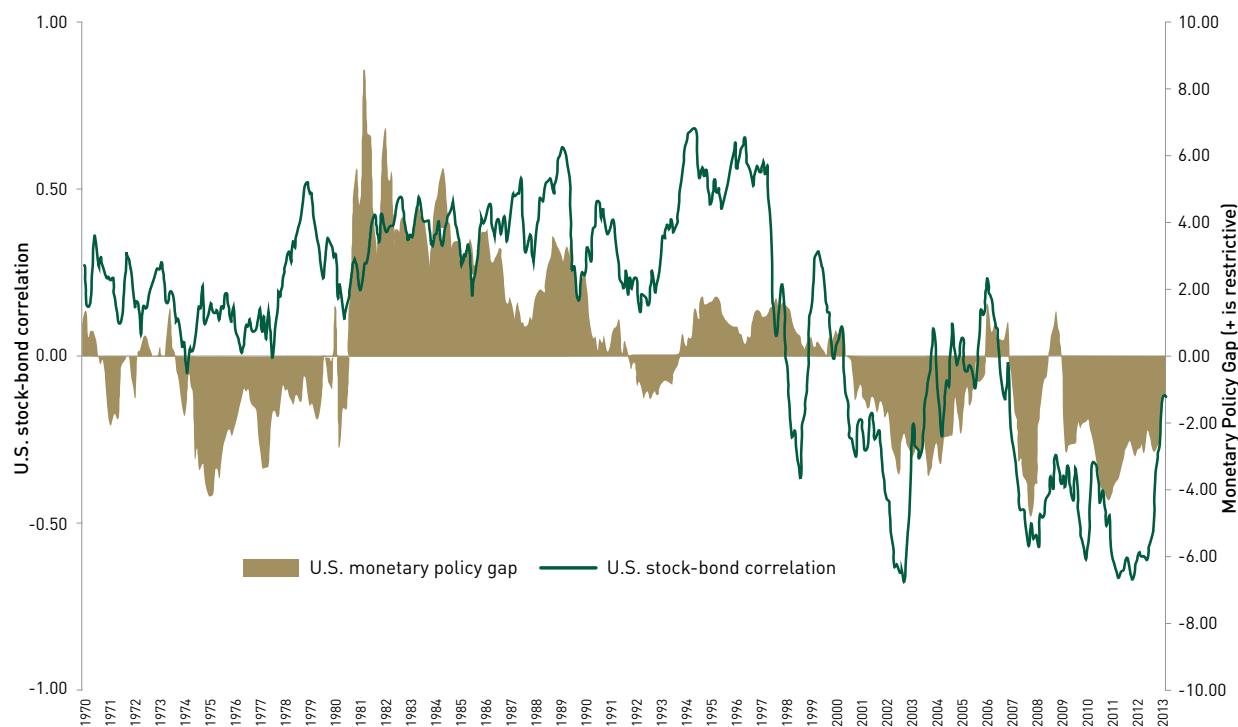
Investors can justify a negative expected return on incremental term risk because that risk, and the consequent duration exposure, has worked so well as a diversifier for the other major portfolio risk: equity beta. Chart 4 shows the negative correlation between bond returns and stock returns over the last two decades. The diversification enabled by this negative relationship, combined with reasonable returns from both asset classes, has led a portfolio of 60% stocks and 40% bonds (or anything resembling that combination) to be an almost unbeatable portfolio in terms of risk-adjusted returns.

Note the time period before 2000, however, when rates were persistently positively correlated with stock returns. With this extended history, we see it is much more common for stocks and bonds to move together than it is for them to move asynchronously.

Chart 4 is extracted from a recent paper, “Stock-Bond Correlations, Macroeconomic Regimes, and Monetary Policy: An International Perspective.” Authors Lieven Baele and Frederiek Van Holle studied the extended history of stock-market correlations to rates across developed markets, including those of the United States, Canada, Japan, the United Kingdom, Germany, France, the Netherlands, Belgium, Italy, and Spain, in order to help explain under what circumstances the relationships may shift. The authors found that negative stock-bond correlations are found in environments characterized by low inflation and accommodative monetary policy (when the shaded region in Chart 4 is below zero)—in other words, environments that look like the last two decades in the United States. Further, the authors found that stock-bond correlations consistently flip positive when monetary policy becomes restrictive (when the shaded region of the chart is above zero), through varied inflation and growth environments.

The last two events that led to a shift in the market’s monetary regime expectations are 1) the “taper tantrum” in 2013, when the U.S. Federal Reserve (Fed) first signaled that it may slow its accommodative bond buying, and 2) the

#### CHART 4. U.S. STOCK-BOND CORRELATION VERSUS U.S. MONETARY POLICY GAP



Source: Lieven Baele and Frederiek Van Holle, "Stock-Bond Correlations, Macroeconomic Regimes, and Monetary Policy," October 1, 2017.

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#### CHART 5. ROLLING ONE-MONTH CORRELATIONS OF THE BLOOMBERG BARCLAYS AGGREGATE BOND INDEX AND THE S&P 500® INDEX



Source: Bloomberg Barclays. **Past performance is not a reliable indicator or guarantee of future results.** For illustrative purposes only and does not represent any specific portfolio managed by Lord Abbett or any particular investment. Indexes are unmanaged, do not reflect the deduction of fees and expenses and are not available for direct investment.

first elevated wage inflation in February 2018. In both cases, the rolling one-month correlations of the Bloomberg Barclays Aggregate Bond Index and the S&P 500® Index flipped to positive, as stocks and bonds sold off at the same time (see Chart 5). The pattern is clear: when the Fed indicates a more restrictive monetary policy to battle inflation, the market recouples stock and bond returns—the relationship that has held for many decades in the past.

## NEW DIVERSIFIERS

What, then, does this mean for portfolio builders? It means the warnings made by Cliff Asness, in *The 5% Solution* (2011), although undoubtedly too early, are even more relevant today. Many traditional risk premiums are compressed, and *investors likely will need diversifiers beyond duration and equity beta to achieve their risk and return goals.*

In Table 1, we see some asset classes with the potential for diversification when duration becomes problematic and the Fed switches to a restrictive monetary stance. Not surprisingly, credit is a common theme among the asset classes that provide diversification during rising rates. Credit does well when the economy is growing, of course, but it also can thrive as the real value of debt erodes in inflationary environments.

**TABLE 1. ASSET CLASS PERFORMANCE DURING PERIODS OF RISING RATES**

*Index returns during periods of greater than 100 basis-point rise in the 10-year U.S. Treasury yield; month-end annualized returns*

Period	10-Year U.S. Treasury <sup>1</sup>	Bloomberg Barclays Aggregate <sup>2</sup>	IG Corp. Floating Rate Notes <sup>3</sup>	Short-Term Corporates <sup>4</sup>	Floating Rate Loans <sup>5</sup>	High Yield Bonds <sup>6</sup>	Global High Yield <sup>7</sup>	Convertibles <sup>8</sup>	S&P 500 <sup>9</sup>
09/30/1993 – 11/30/1994	-8.9%	-3.0%	-	2.1%	11.3%	1.2%	-	-2.7%	1.8%
01/31/1996 – 08/31/1996	-6.0%	-1.8%	-	1.7%	4.8%	3.1%	-	5.4%	3.9%
09/30/1998 – 01/31/2000	-7.7%	-0.6%	-	4.2%	4.9%	3.7%	5.2%	41.4%	28.3%
06/30/2005 – 06/30/2006	-5.8%	-0.8%	4.6%	2.3%	6.7%	4.7%	5.9%	9.4%	8.6%
12/31/2008 – 12/31/2009	-9.9%	5.9%	8.8%	21.3%	44.9%	57.5%	62.0%	49.1%	26.5%
08/31/2010 – 03/31/2011	-6.1%	-0.8%	1.6%	2.3%	7.4%	10.3%	11.6%	19.2%	27.8%
07/31/2012 – 12/31/2013	-6.2%	-1.1%	1.8%	3.2%	7.0%	9.5%	17.5%	22.9%	25.7%
06/30/2016 – 12/31/2016	-7.5%	-2.5%	1.2%	0.6%	5.4%	7.5%	5.7%	8.3%	8.1%
08/31/2017 – 04/30/2018	-5.5%	-2.3%	1.6%	-0.2%	3.7%	1.1%	1.4%	5.2%	8.4%

Source: Morningstar. <sup>1</sup>Citigroup 10-Year Treasury Bond Index. <sup>2</sup>Bloomberg Barclays U.S. Aggregate Bond Index. <sup>3</sup>Bloomberg Barclays U.S. Floating Rate Note Index. <sup>4</sup>ICE BofA Merrill Lynch U.S. Corporate BBB-Rated 1-3 Year Index. <sup>5</sup>Credit Suisse Leveraged Loan Index. <sup>6</sup>ICE BofA Merrill Lynch U.S. High Yield Constrained Index. <sup>7</sup>ICE BofA Merrill Lynch Global High Yield Index. <sup>8</sup>ICE BofA Merrill Lynch All Convertibles All Qualities Index. <sup>9</sup>S&P 500 Index.

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Because short-term credit, by definition, limits duration risk and earns extra yield from credit exposure, it is, in a way, purpose-built to diversify from duration risk. Active management also can be a powerful means of diversification. Relative-value decisions among sectors have the potential to add returns, while reducing volatility and correlation to traditional risk factors. Portfolio construction with an emphasis on themes and relative value within sectors can be even more helpful for diversification. Well-constructed, diversified, credit-oriented portfolios can require a tremendous amount of analytical and fundamental work. But the result is a portfolio that has better diversification potential and, ultimately, the potential for better risk-adjusted returns.

## IMPORTANT INFORMATION

A Note about Risk: The value of investments in fixed-income securities will change as interest rates fluctuate and in response to market movements. Generally, when interest rates rise, the prices of debt securities fall, and when interest rates fall, prices generally rise. Bonds may also be subject to other types of risk, such as call, credit, liquidity, interest-rate, and general market risks. High-yield securities, sometimes called junk bonds, carry increased risks of price volatility, illiquidity, and the possibility of default in the timely payment of interest and principal. Moreover, the specific collateral used to secure a loan may decline in value or become illiquid, which would adversely affect the loan's value. Longer-term debt securities are usually more sensitive to interest-rate changes; the longer the maturity of a security, the greater the effect a change in interest rates is likely to have on its price. Lower-rated bonds may be subject to greater risk than higher-rated bonds. No investing strategy can overcome all market volatility or guarantee future results. Statements concerning financial market trends are based on current market conditions, which will fluctuate. There is no guarantee that markets will perform in a similar manner under similar conditions in the future.

Diversification does not guarantee a profit or protect against loss in declining markets.

## Glossary

**Duration** is a measure of the sensitivity of the price of a fixed-income asset to a change in interest rates and is expressed in years.

**Yield to maturity** is the rate of return anticipated on a bond if held until it matures. Yield to maturity assumes all the coupon payments are reinvested at an interest rate that equals the yield-to-maturity. The yield to maturity is the long-term yield expressed as an annual rate.

**Yield** is the annual interest received from a bond and is typically expressed as a percentage of the bond's market price.

The **Bloomberg Barclays U.S. Aggregate Bond Index** represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. Total return comprises price appreciation/depreciation and income as a percentage of the original investment.

The **Bloomberg Barclays U.S. Floating Rate Note Index** is designed to measure the performance of U.S. dollar-denominated, investment grade floating rate notes.

The **Citigroup 10 Year Treasury Bond Index** is a broad measure of the performance of medium-term U.S. Treasury securities.

The **Credit Suisse Leveraged Loan Index** is designed to mirror the investable universe of the U.S. dollar-denominated leveraged loan market.

The **ICE BofAML 1-3 Year BBB US Corporate Index** is an unmanaged index comprised of U.S. dollar denominated investment grade corporate debt securities publicly issued in the U.S. domestic market with between one and three year remaining to final maturity.

The **ICE BofAML All Convertibles, All Qualities Index** contains issues that have a greater than \$50 million aggregate market value. The issues are U.S. dollar-denominated, sold into the U.S. market and publicly traded in the United States.

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