October 4, 2017

50 YEARS OF INVESTMENT MANAGEMENT & RESEARCH

IMPROVING FIXED-INCOME OUTCOMES WITHIN DC PLANS

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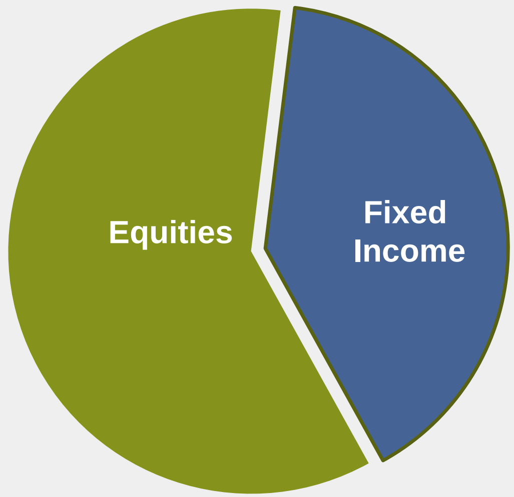
Typical DC Plan Asset Allocation:
In Contrast to Equities, the Bond Line Up Lacks Diversification

Typical Equity Line Up – 8 Funds

- Large-Cap Active
- Mid-Cap Active
- Small-Cap Active

- Large-Cap Passive
- Mid-Cap Passive
- Small-Cap Passive

- Active International
- Passive International



Typical Bond Line Up – 2 Funds

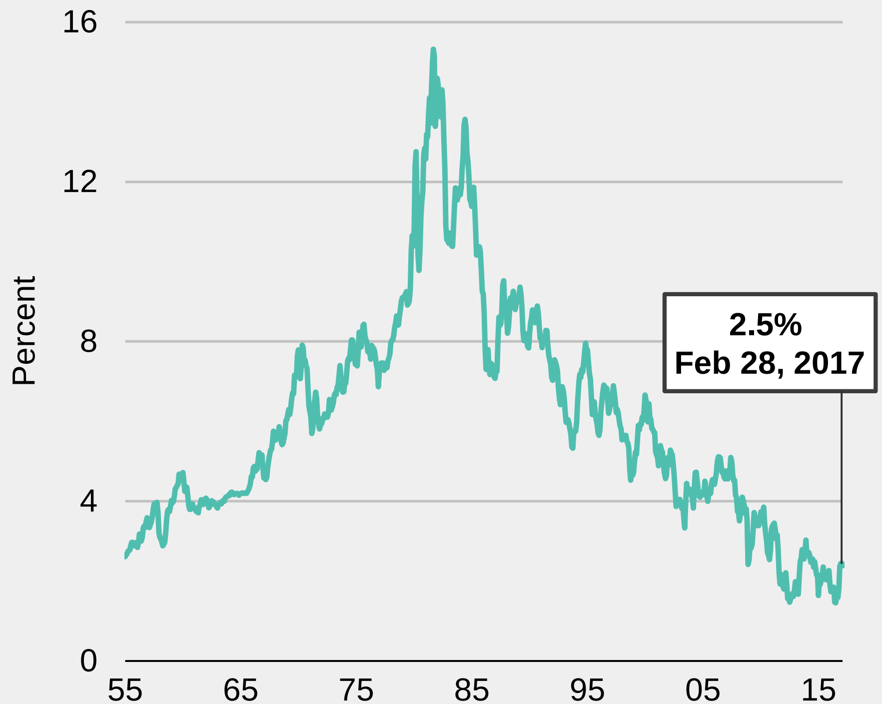
- Stable Value
- US Aggregate

For informational purposes only.

US Bonds at a Turning Point?

Is There a Better Alternative?

10-Year US Treasury Yields



Challenges of US Core Bonds

- Yields at historic lows…and rising
- Duration has extended

US Aggregate

	2006	September 2016	December 2016
Duration (Years)	4.5	5.5	5.9
Yield	5.3%	2.0%	2.6%

Past performance does not guarantee future results.
Left display as of February 28, 2017
Treasury bonds provide fixed rates of return as well as principal guarantees if held to maturity.
Source: Bloomberg Barclays, the US Bureau of Economics Analysis

Building A Better Fixed-Income Allocation

Objective

+ Better diversification
+ Less US interest rate risk
+ Higher potential return
+ Maintain offset to equity volatility

Recommendation

+ Globalize rate risk
+ Add high-yield bonds
+ Introduce inflation protection

For informational purposes only. There can be no assurance that any investment objectives will be achieved.

Diversifying the Fixed-Income Line Up: Recommended Allocation

US Aggregate Bonds

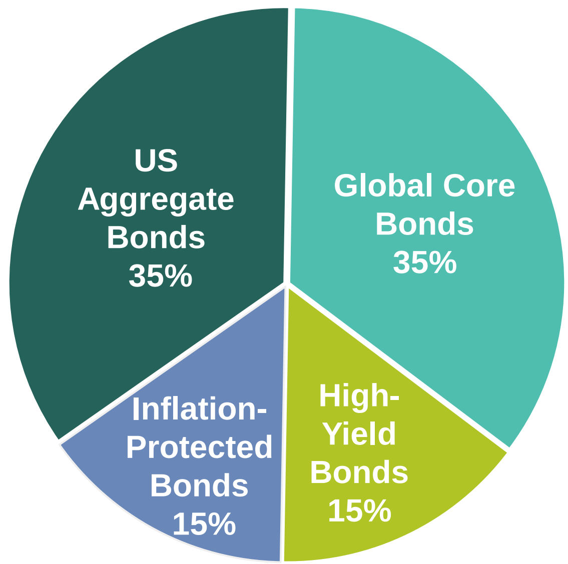
- Maintain US bond anchor
- Passive approach could reduce fees

Yield: 2.6% Duration: 5.9 years

Global Core Bonds

- Provide downside protection vs. US bonds
- Hedge currency to keep volatility low

Yield: 2.4% Duration: 6.9 years



Inflation-Protected Bonds

- Preserve purchasing power
- Focus on intermediate bonds to reduce interest-rate risk

Yield: 2.0% Duration: 3.6 years

High-Yield Bonds

Increase return potential

- Lower interest-rate sensitivity

Yield: 6.1% Duration: 4.1 years

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As of December 31, 2016
Source: AB

An Allocation that Seeks to Improve Outcomes, Yet Remains an "Anchor to Windward"

	US Aggregate	Recommended DC Bonds	S&P 500
Yield	2.6%	3.0%	—
Duration	5.9 years	5.6 years	—
2008 (financial crisis)	5.2%	–0.5%	–37.0%
2013 (taper tantrum)	–2.0%	–0.5%	32.4%
4Q2016	–3.0%	–1.8%	3.82%
US Exposure	91%	73%	—
Non-US Exposure	9%	27%	—
Correlation to S&P500	0.02	0.38	1.00

+ Boosts yield, lowers duration
+ Manageable drawdowns
+ Diversifies away from US
+ Maintains low correlation to equity

35% US Aggregate Bonds	35% Global Core Bonds	15% High-Yield Bonds	15% Inflation-Protected Bonds

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As of December 31, 2016

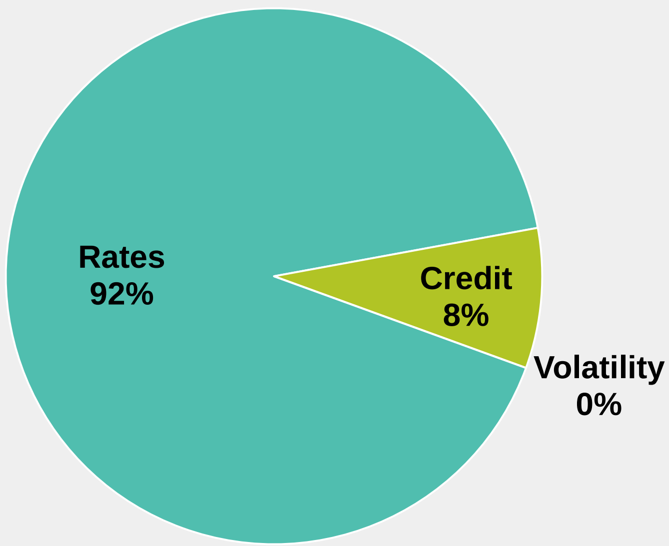
Yield is Yield to Worst

Source: Bloomberg Barclays, S&P and AB

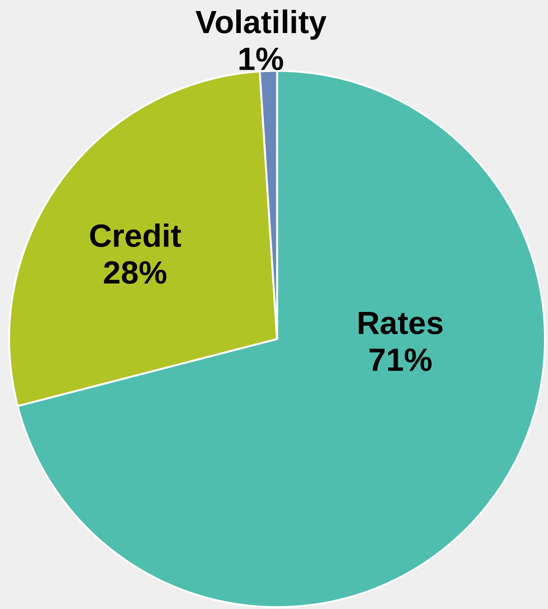
Moving to Better Balance Between Rates and Credit

Factor Analysis

US Aggregate
Exposure to Key Risk Factors*



Recommended DC Bonds
Exposure to Key Risk Factors*

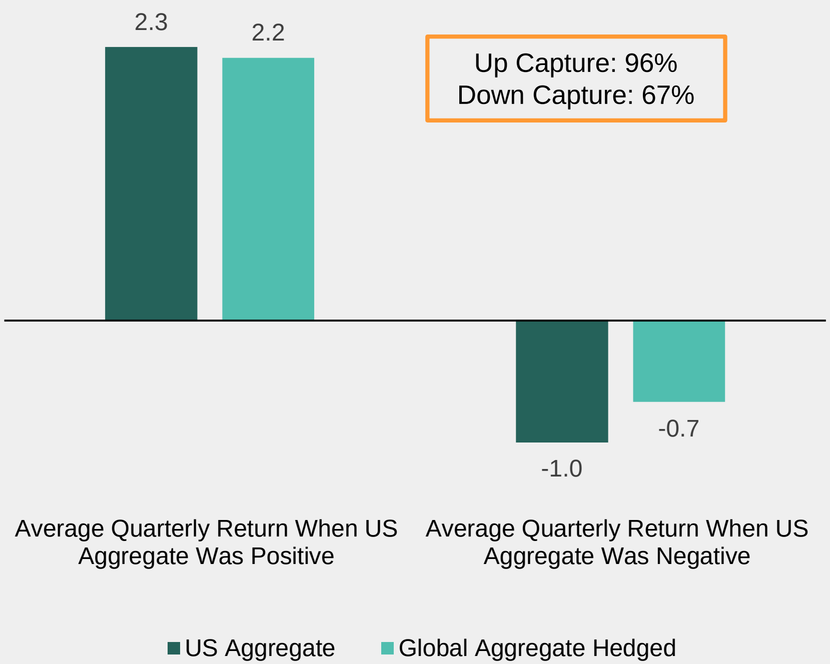


Current analysis does not guarantee future results. For illustrative purposes only.
As of February 28, 2017
*Represents factor regression analyses of the Bloomberg Barclays US Aggregate Portfolio and a Recommended DC Bond portfolio (35% Bloomberg Barclays US Aggregate, 35% Bloomberg Barclays Global Aggregate, 15% Bloomberg Barclays US High Yield and 15% Bloomberg Barclays US TIPS 1-10 year indices). over the period from March 1, 2012, to February 28, 2017. The rates factor is proxied by the Bloomberg Barclays 10-Year Treasury Index; the credit factor is proxied by 50% Bloomberg Barclays US HY excess returns and 50% MSCI World monthly returns, rebalanced monthly; and the volatility factor is proxied by month-over-month change in the VIX. Numbers may not sum due to rounding.
Source: Bloomberg Barclays, Morningstar, MSCI and AB

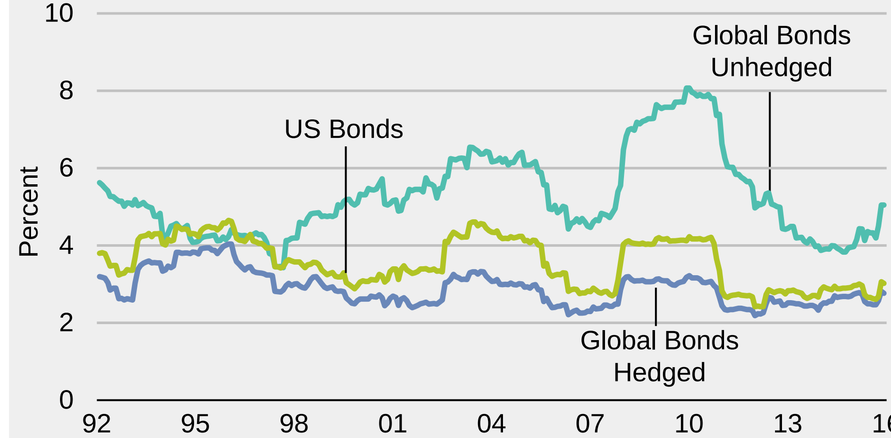
Why Global (Hedged)?

Diversify Away From US Interest Rates While Maintaining Low Volatility

Global Bonds Offer Attractive Up/Down Capture
March 1990 – December 2016



Rolling Volatility
Three Years Ending December 31, 2016



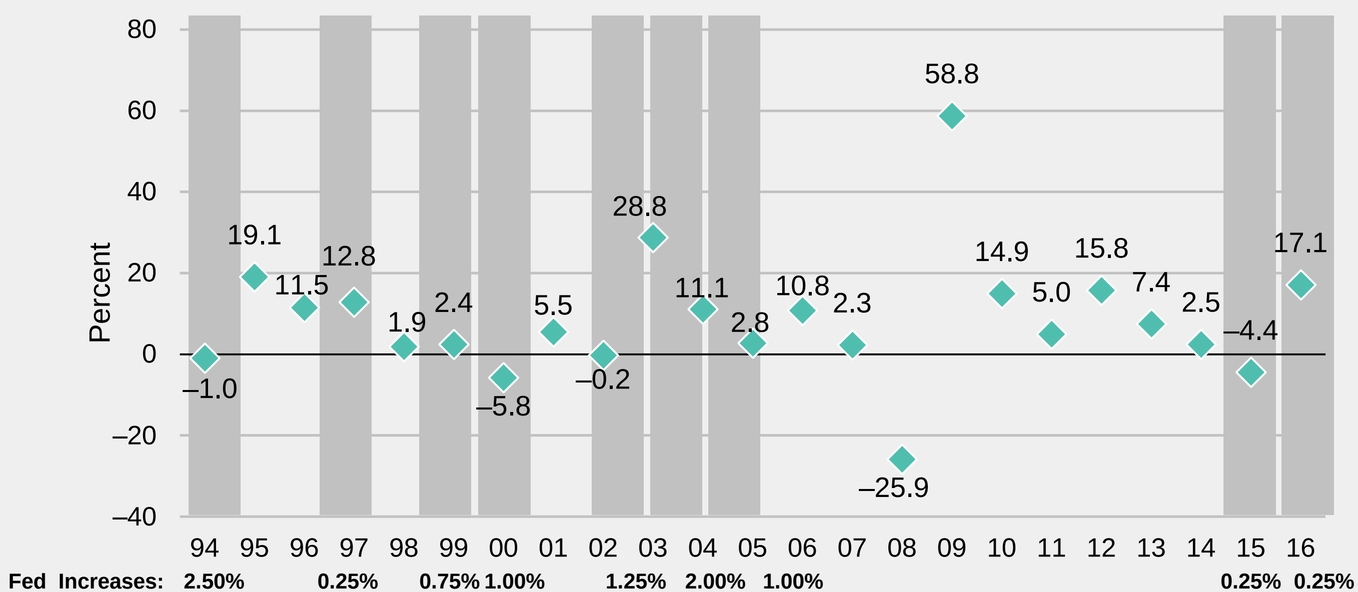
	Global Bonds Hedged	US Bonds	Global Bonds Unhedged
Annual Return	5.3	5.3	4.4
Ann. Volatility	2.8	3.4	5.7
Sharpe Ratio	1.1	0.9	0.4

Current analysis does not guarantee future results.
As of December 31, 2016
Left display: US Aggregate is represented by the Bloomberg Barclays US Aggregate Index. Global Aggregate Hedged is represented by the Bloomberg Barclays Global Aggregate Hedged to USD.
Right display: Global bonds unhedged are represented by Bloomberg Barclays Global Aggregate USD Unhedged Index. US bonds are represented by Bloomberg Barclays US Aggregate Index. Global bonds hedged are represented by Bloomberg Barclays Global Aggregate Hedged to USD Index. An investor cannot invest directly in an index, and its performance does not reflect the performance of any AB portfolio. The unmanaged index does not reflect fees and expenses associated with the active management of a portfolio.
Source: Bloomberg Barclays and AB

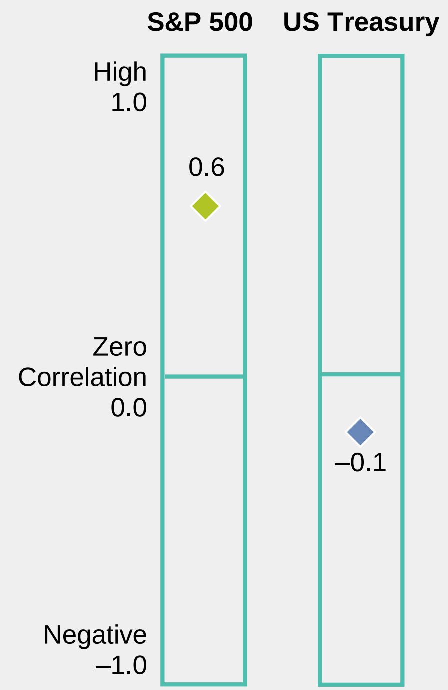
Why High Yield?

Historically Strong When Rates Rise

Bloomberg Barclays US High-Yield 2% Issuer Capped Index
Performance in Rising-Rate Environments — 1994–2016



US High-Yield Correlations
January 1994–December 2016

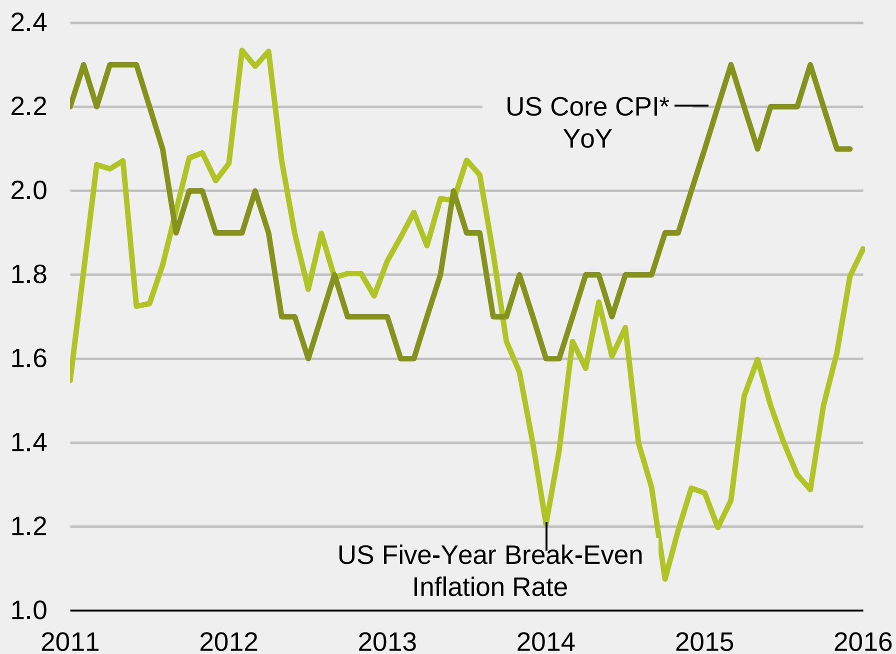


Past performance does not guarantee future results. Historical information provided for illustrative purpose only.
As of December 31, 2016
US Treasury represented by Bloomberg Barclays US Treasury; US high yield represented by Bloomberg Barclays US High Yield 2% Issuer Capped. An investor cannot invest directly in an index and its performance does not reflect the performance of any AB portfolio. The unmanaged index does not reflect fees and expenses associated with the active management of a portfolio.
Source: Bloomberg Barclays, JPMorgan Chase, S&P and AB

Why Inflation-Protected Bonds?

US Inflation is Rising, But Watch TIPS' Duration

Inflation Protection Is Still Cheap to Actual Core Inflation



Benchmark Comparison: December 31, 2016

Benchmark	Duration	Average Maturity
US Treasury Index	6.08	7.47
US Aggregate Index	5.89	8.19
US TIPS Index**	7.75	8.25
US TIPS 1–10 Year Index**	5.24	5.33

+ All TIPS maturities have the same inflation accruals, but price and yield vary depending on the duration of the bond
+ The US TIPS benchmark has significantly more interest rate risk than either the US Treasury Index or the US Aggregate Index. The US TIPS 1–10 Year Index is more similar

Through December 31, 2016
*Consumer price index. **Represented by real duration
Source: Bloomberg Barclays and AB

Potential Fee Scenarios

Starting Point — Active US Bonds* 45 bps

Scenario 1

- » Active US Bonds: 45 bps
- » Global Bonds: 65 bps
- » High Yield Bonds: 64 bps
- » Inflation-Protected Bonds: 42 bps
- » **Total Estimated Fee: 54 bps**

Scenario 2

- » Passive US Bonds: 6 bps
- » Global Bonds: 65 bps
- » High Yield Bonds: 64 bps
- » Inflation-Protected Bonds: 42 bps
- » **Total Estimated Fee: 41 bps**

+ Other considerations – rebalancing and operating costs

As of January 31, 2017
*Fees based on Morningstar R6 Share Class Averages for Intermediate Bond, World Bond, High Yield Bond and Inflation-Protected Bond categories. Passive US Bonds represented by Vanguard Total Bond Market Fund Admiral Shares (VBTLX) expense ratio, as of April 26, 2016.
Source: Morningstar, Vanguard and AB

Next Steps to Improved Fixed-Income Outcomes Within DC Plans

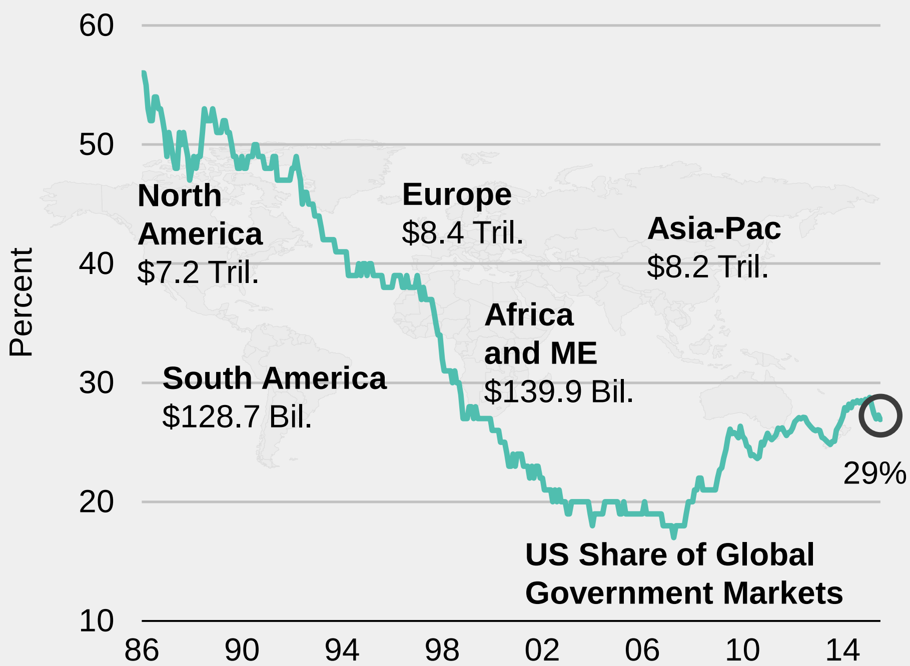
- Diversify the fixed income line up
  - Globalize
  - Add yield
  - Provide inflation protection
- Implement through white label option or
- Add as standalone option(s) to compliment existing menu

For informational purposes only. There can be no assurance that any investment objectives will be achieved.

CASE FOR GLOBAL AS A CORE FIXED-INCOME OPTION

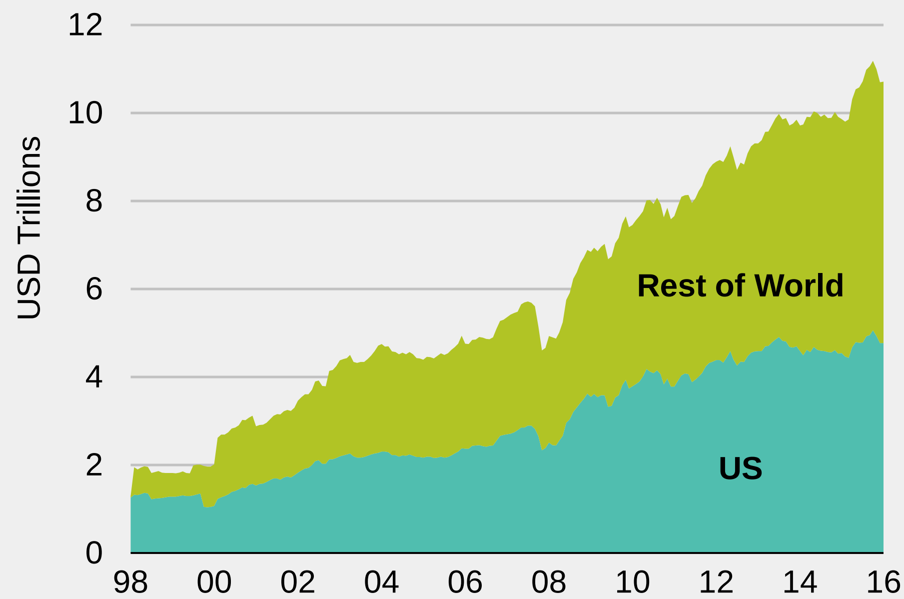
The Non-US Bond Markets Are Sizeable

The US No Longer Dominates World Bond Markets*



Non-US Corporate Bonds Are a Growing Presence†

Historical Growth of Investment Grade and High Yield Sector: Outstanding Debt



Historical analysis does not guarantee future results.

As of December 31, 2016

*US Share of Global Government Bonds and regional weightings are represented by the Bloomberg Barclays Global Treasury Index.

†US is represented by the Bloomberg Barclays Global Aggregate: Corporates—United States Index and the Bloomberg Barclays US High Yield Corporate Index. Rest of World is represented by the Bloomberg Barclays Global Aggregate Index and the Bloomberg Barclays Global High Yield Index. An investor cannot invest directly in an index and its performance does not reflect the performance of any AB portfolio. The unmanaged index does not reflect fees and expenses associated with the active management of a portfolio.

Source: Bloomberg Barclays, JPMorgan Chase and AB

Global Portfolios Diversify Economic and Interest-Rate Risk

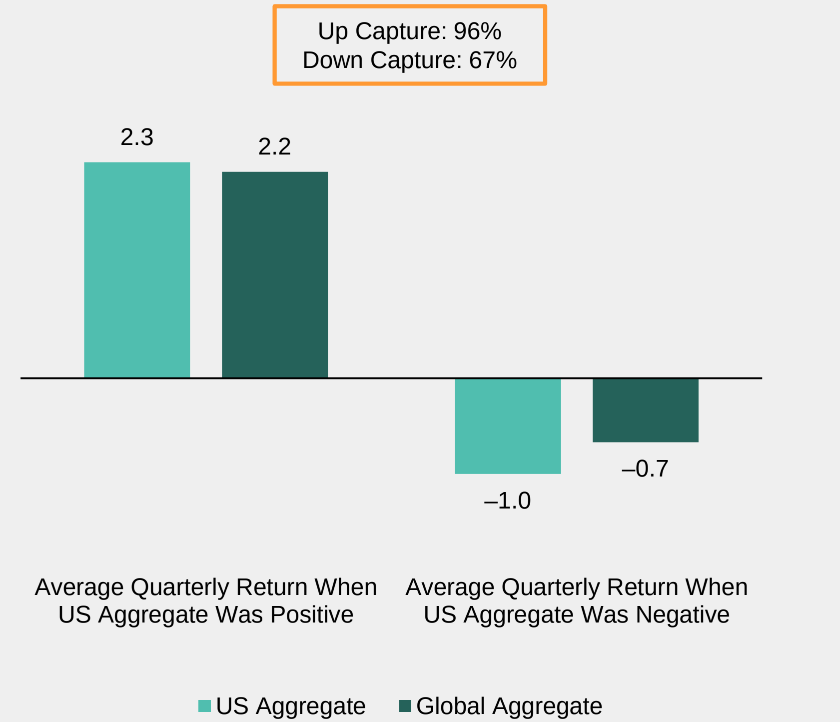
Country Returns Have Varied Significantly Across Cycles

Global Bond Returns, Hedged to USD (Percent)

	2012	2013	2014	2015	2016
Best Performer	Euro Area 11.2	Euro Area 2.5	UK 14.2	Canada 2.8	UK 10.7
	UK 2.4	Japan 2.3	Euro Area 13.1	Euro Area 1.8	Japan 4.9
	Japan 2.2	Australia –2.4	Australia 8.3	Japan 1.7	Euro Area 4.7
	US 2.0	US –2.7	Canada 6.5	US 0.8	Australia 1.1
	Canada 1.4	Canada –3.1	US 5.1	Australia 0.1	US 1.0
Worst Performer	Australia 1.4	UK –4.4	Japan 4.7	UK –0.3	Canada –0.3
Gap between best and worst	9.8	6.9	9.5	3.1	11.0

Global Bonds Offer Attractive Up/Down Capture

March 1990–December 2016



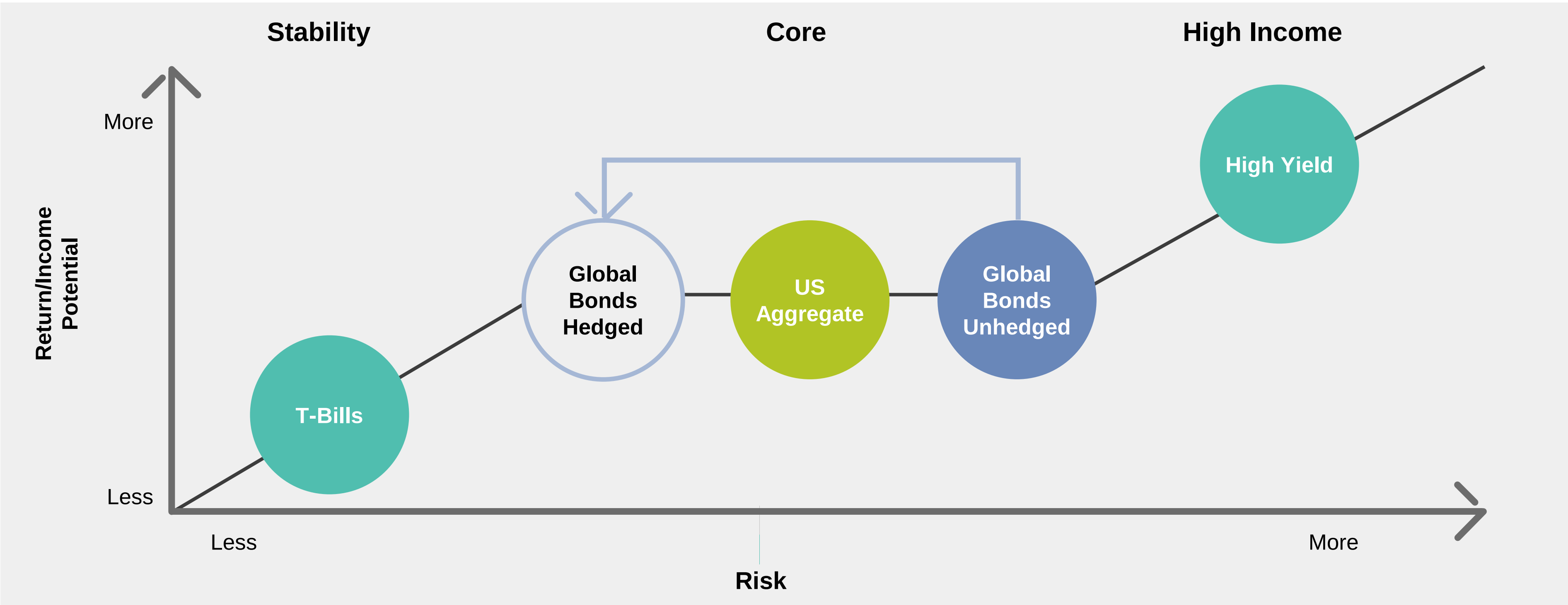
Past performance does not guarantee future results.

As of December 31, 2016

These returns are for illustrative purposes only and do not reflect the performance of any fund. Diversification does not eliminate the risk of loss. Global bond returns represented by their respective Bloomberg Barclays government bond indices. US Aggregate is represented by the Bloomberg Barclays US Aggregate Index. Global Aggregate Hedged is represented by the Bloomberg Barclays Global Aggregate Hedged to USD. An investor cannot invest directly in an index and they do not include sales charges or operating expenses associated with an investment in a mutual fund, which would reduce total returns.

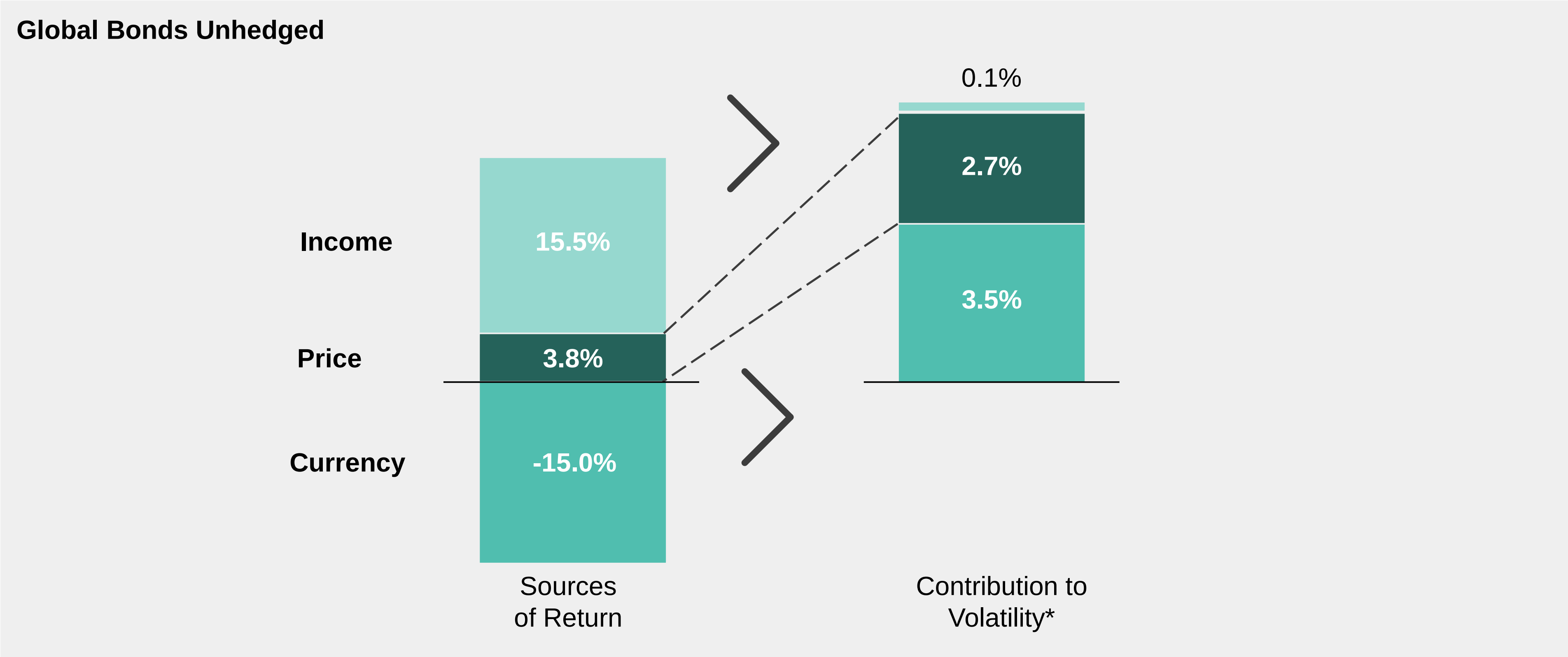
Source: Bloomberg Barclays and AB

Re-Thinking Global



For illustrative purposes only. Historical analysis does not guarantee future results.
As of December 31, 2016
Source: AB

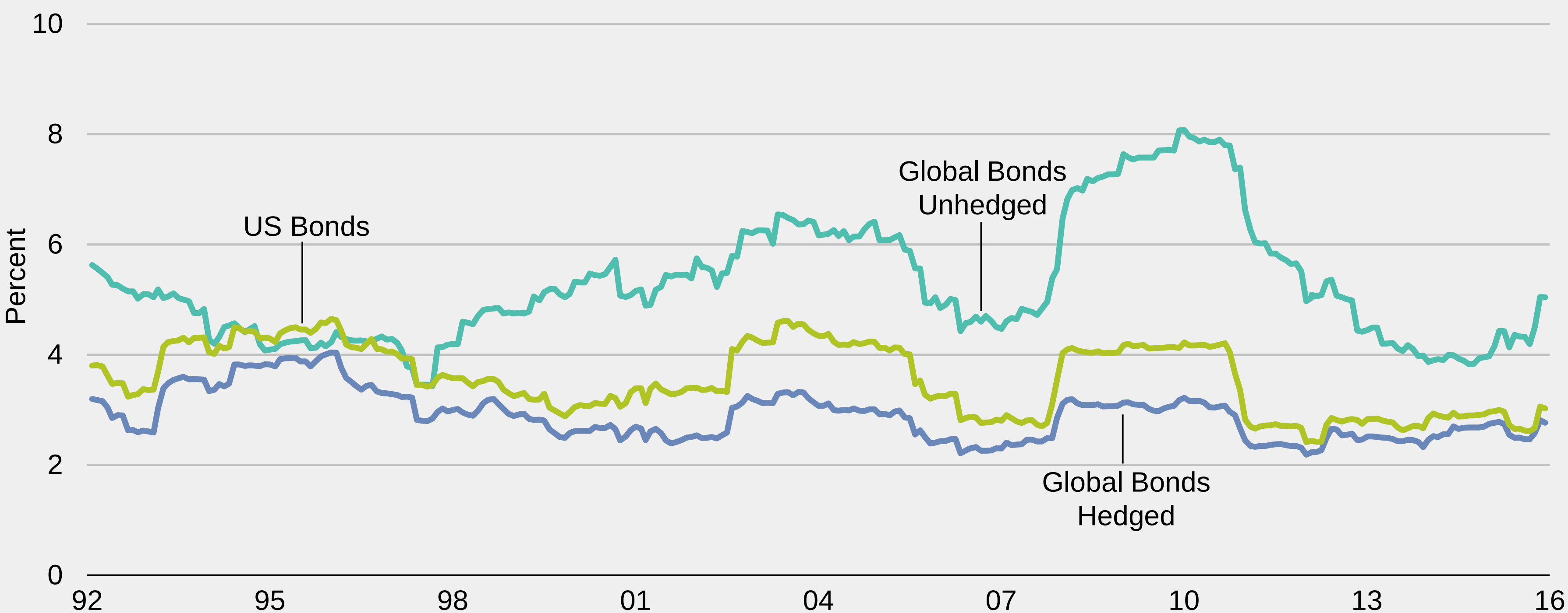
Currency Is a Much More Volatile Factor Than Income



For illustrative purposes only. Past performance does not guarantee future results.
As of December 31, 2016
*Five-year volatility as represented by the annualized standard deviation for January 2012 through December 2016 for the Bloomberg Barclays Global Aggregate Bond Index
An investor cannot invest directly in an index and its performance does not reflect the performance of any AB portfolio. The unmanaged index does not reflect fees and expenses associated with the active management of a portfolio.
Source: Bloomberg Barclays and AB

Hedged Bonds Have Been Significantly Less Volatile…

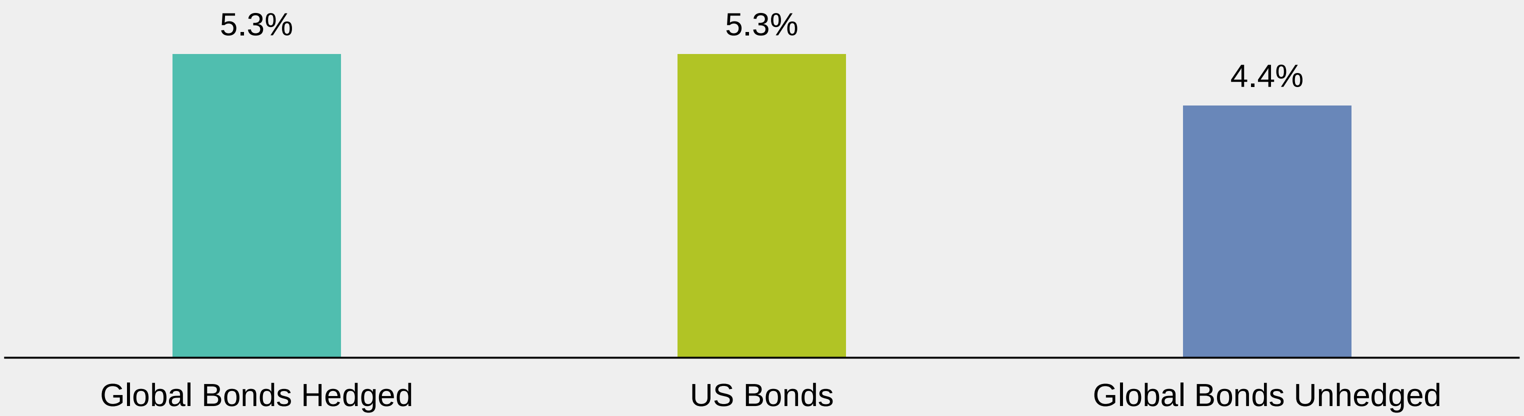
Rolling Volatility
Three Years Ending December 31, 2016



Historical analysis does not guarantee future results.
As of December 31, 2016
Global bonds unhedged are represented by Bloomberg Barclays Global Aggregate USD Unhedged. US bonds are represented by Bloomberg Barclays US Aggregate. Global bonds hedged are represented by Bloomberg Barclays Global Aggregate Hedged to USD. An investor cannot invest directly in an index and its performance does not reflect the performance of any AB portfolio. The unmanaged index does not reflect fees and expenses associated with the active management of a portfolio.
Source: Bloomberg Barclays and AB

…with Better Risk-Adjusted Returns

Annualized Return
20 Years Ending December 31, 2016

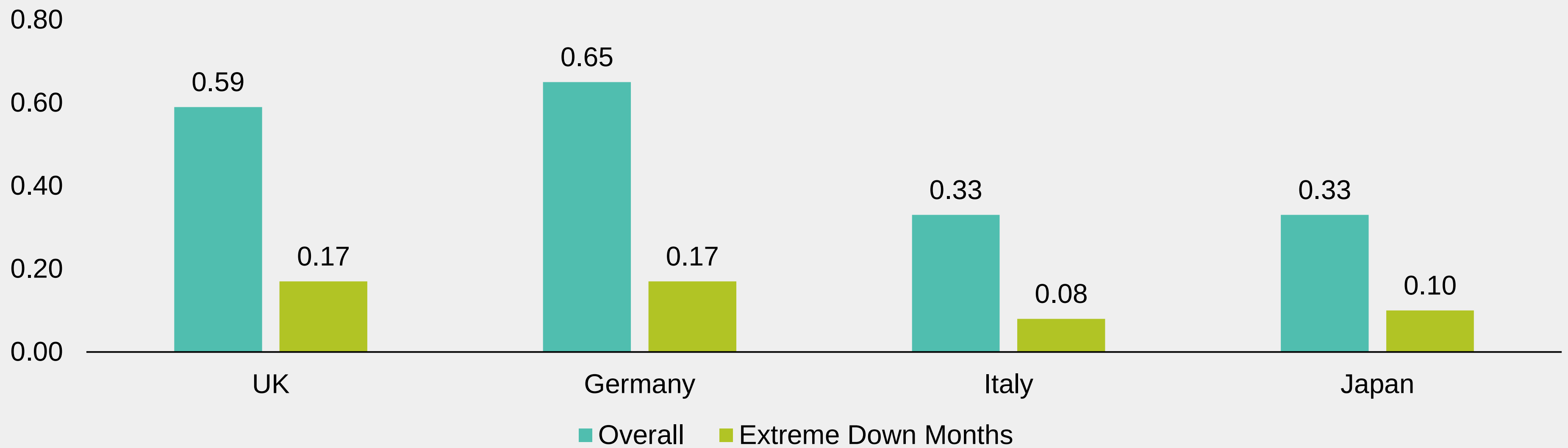


	Global Bonds Hedged	US Bonds	Global Bonds Unhedged
Annual Volatility	2.8	3.4	5.8
Sharpe Ratio	1.1	0.9	0.4

Historical analysis does not guarantee future results.
As of December 31, 2016
Global bonds unhedged are represented by Bloomberg Barclays Global Aggregate USD Unhedged. US bonds are represented by Bloomberg Barclays US Aggregate. Global bonds hedged are represented by Bloomberg Barclays Global Aggregate Hedged to USD. An investor cannot invest directly in an index and its performance does not reflect the performance of any AB portfolio. The unmanaged index does not reflect fees and expenses associated with the active management of a portfolio.
Source: Bloomberg Barclays and AB

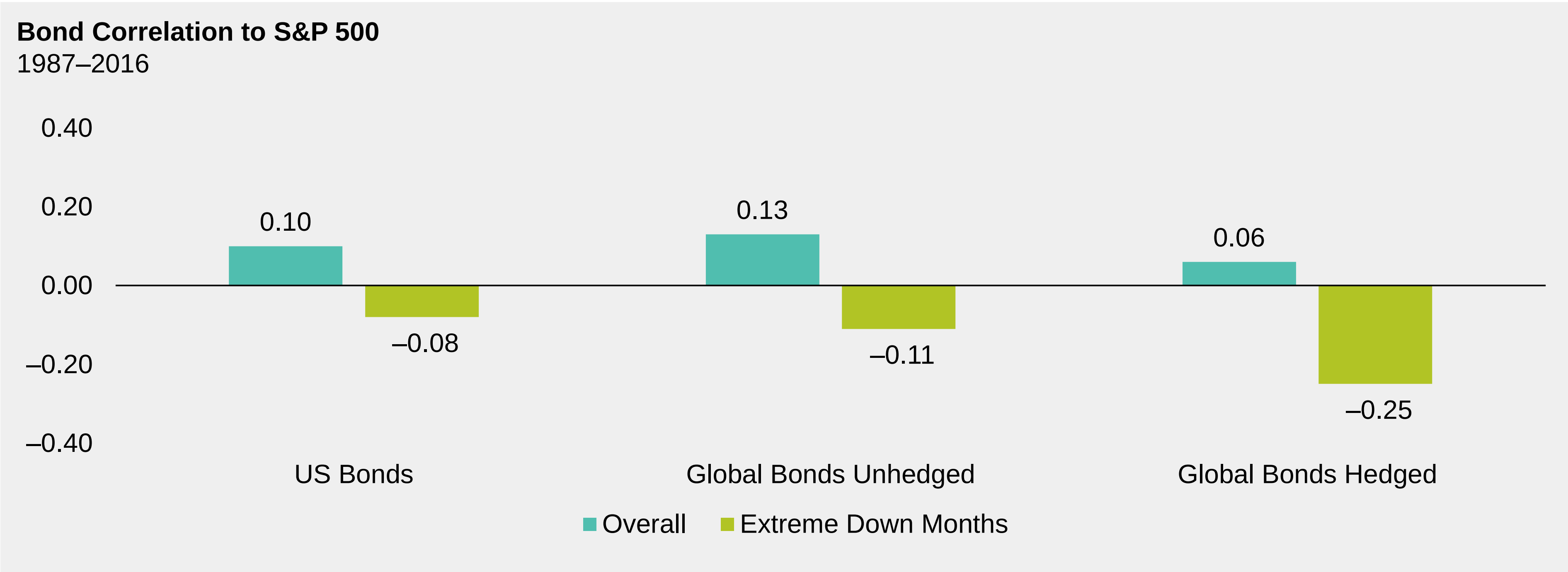
Global Bonds Have Diversified, Especially When Needed

Correlation to US Treasuries
Using Returns Hedged to USD



Past performance does not guarantee future results.
Through December 31, 2016
Correlations are based on monthly returns for the full period for the "overall" case. Extreme down months are months when the Bloomberg Barclays US Treasury Index return was more than one standard deviation below its sample mean. US Treasury and treasury indices for UK, Germany, Italy and Japan since January 1, 1987 are from Bloomberg Barclays.
An investor cannot invest directly in an index and its performance does not reflect the performance of any AB portfolio. The unmanaged index does not reflect fees and expenses associated with the active management of a portfolio.
Diversification does not eliminate the risk of loss
Source: Bloomberg Barclays and AB

Hedged Global Bonds Have Been a Better Stock Diversifier, Even During Crises



Past performance and historical analysis does not guarantee future results. Diversification does not eliminate the risk of loss.

As of December 31, 2016

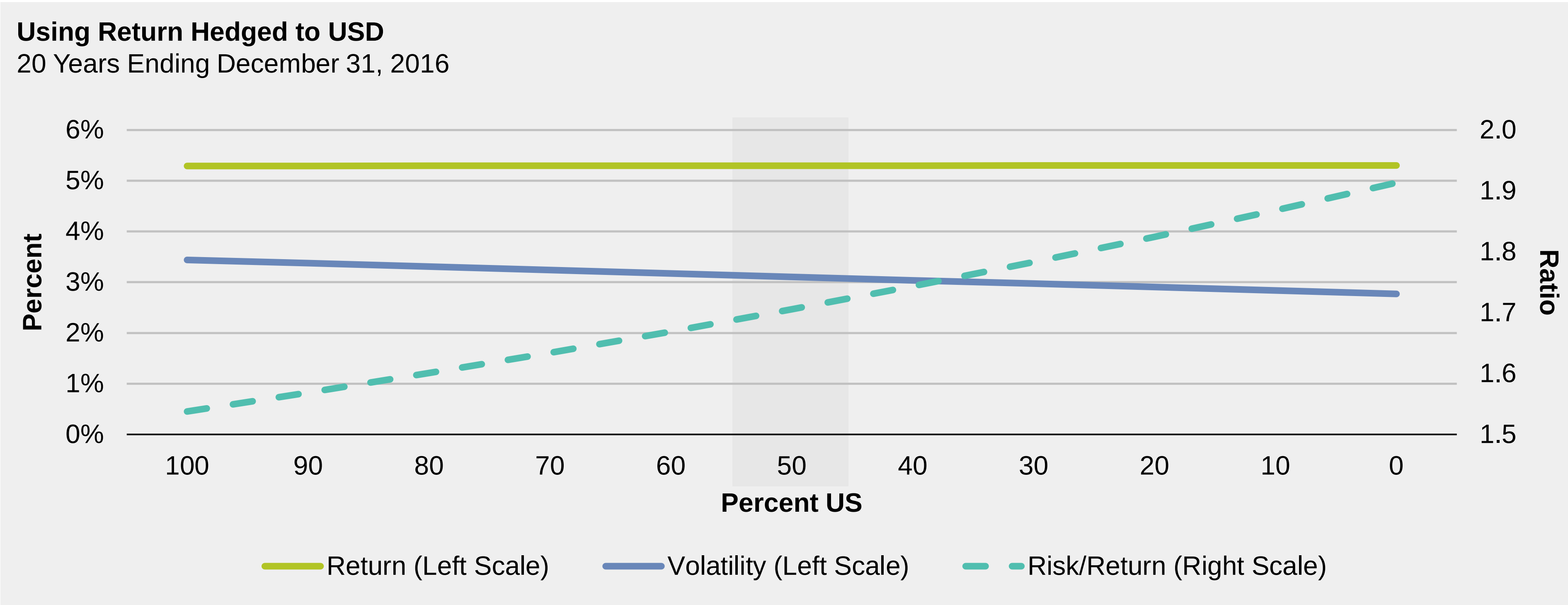
US Bonds is represented by the Bloomberg Barclays US Aggregate. Global Bonds is represented by the Bloomberg Barclays Global Aggregate Index (unhedged or hedged in USD). Extreme down months are months when the S&P 500 return was more than one standard deviation below its sample mean. Correlations are based on monthly returns for the full period for the "overall" case and returns in the extreme down months for the "extreme down months" case. The sample mean and standard deviation are estimated based on monthly S&P 500 returns.

Global country returns are hedged to USD.

An investor cannot invest directly in an index and its performance does not reflect the performance of any AB portfolio. The unmanaged index does not reflect fees and expenses associated with the active management of a portfolio.

Source: Bloomberg Barclays, S&P and AB

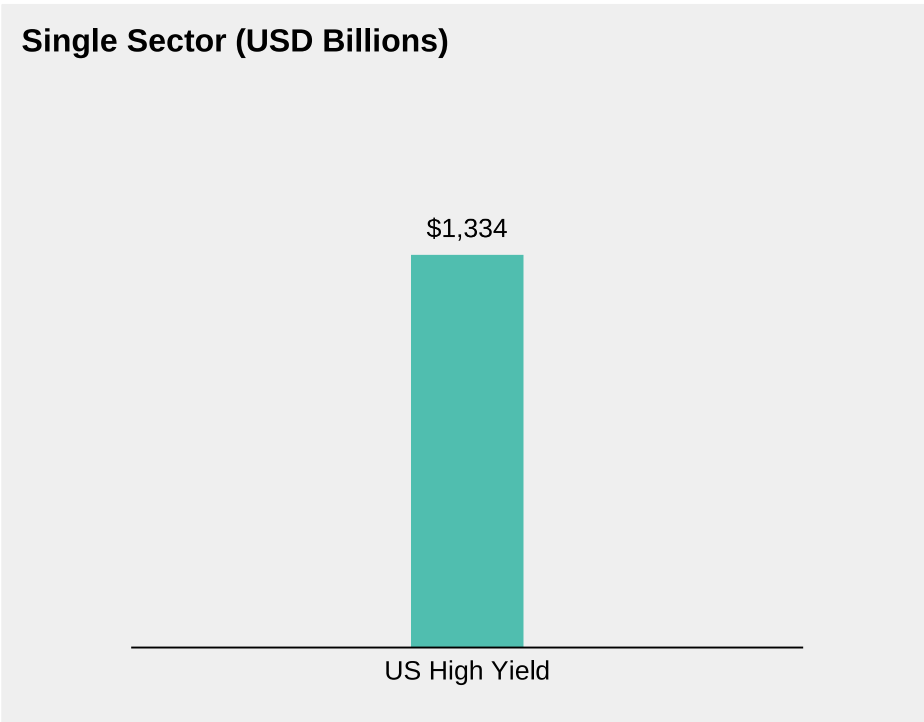
How Much Global?

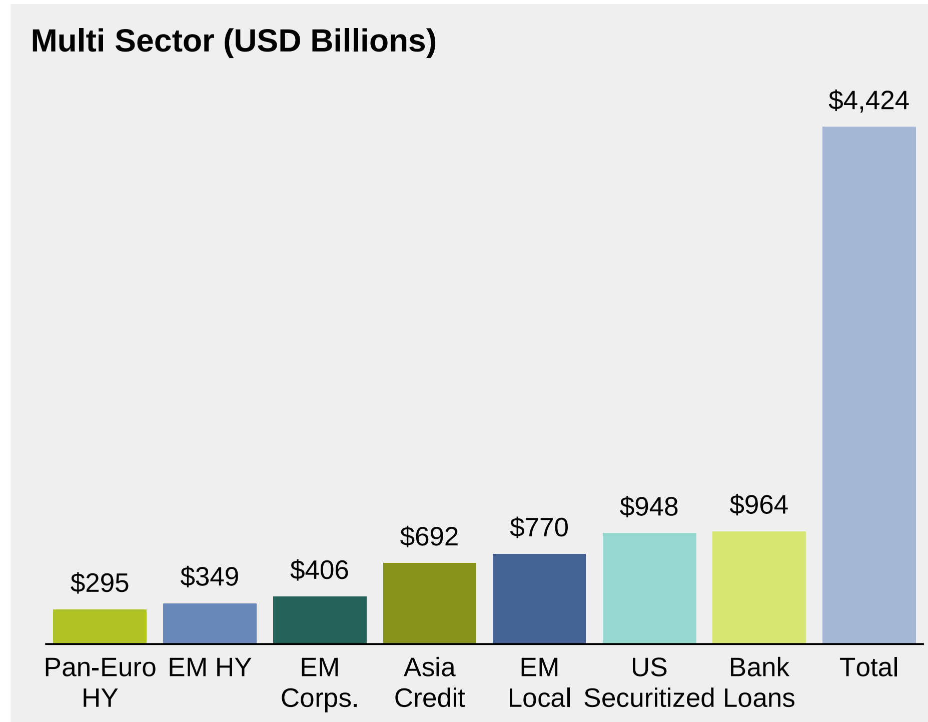


For illustrative purposes only. Past performance and historical analysis do not guarantee future results.
As of December 31, 2016
Represented indices: Bloomberg Barclays US Aggregate and the Bloomberg Barclays Global Aggregate (Hedged to USD)
An investor cannot invest directly in an index and its performance does not reflect the performance of any AB portfolio. The unmanaged index does not reflect fees and expenses associated with the active management of a portfolio.
Source: Bloomberg Barclays and AB

APPENDIX

Globalize the High Yield Allocation to Increase Potential Opportunity Set





Historical information provided for illustrative purposes only.

As of December 31, 2016

US high yield is represented by Bloomberg Barclays US Corporate High-Yield; emerging-market high yield by J.P. Morgan EMBI Global Non-Investment Grade; emerging-market corporates by J.P. Morgan CEMBI Broad Diversified; Pan-European high yield by Bloomberg Barclays Pan-European High-Yield (EUR); Asia credit by J.P. Morgan Asia Credit; bank loans by Credit Suisse Leveraged Loan; emerging-market local by J.P. Morgan GBI-EM (since 2002) and J.P. Morgan ELMI+ (prior to 2002); and US Securitized by a summation of CMBS, agency risk-sharing transactions, and non-agency securities. An investor cannot invest directly in an index or average and neither includes sales charges or operating expenses associated with an investment in a mutual fund, which would reduce total returns.

Source: Bloomberg Barclays, CoreLogic, Credit Suisse, Fannie Mae, Freddie Mac, J.P. Morgan and AB

A Word About Risk

Market Risk: The market values of the investments may rise and fall from day to day, so investments may lose value.
Interest-Rate Risk: Bonds may lose value if interest rates rise or fall—long-duration bonds tend to rise and fall more than short-duration bonds.
Credit Risk: A bond's credit rating reflects the issuer's ability to make timely payments of interest or capital—the lower the rating, the higher the risk of default. If the issuer's financial strength deteriorates, the issuer's rating may be lowered and the bond's value may decline.
Allocation Risk: Allocating to different types of assets may have a large impact on returns if one of these asset classes significantly underperforms the others.
Foreign Risk: Investing in overseas assets may be more volatile because of political, regulatory, market and economic uncertainties associated with them. These risks are magnified in assets of emerging or developing markets.
Currency Risk: Currency fluctuations may have a large impact on returns and the value of an investment may be negatively affected when translated into the currency in which the initial investment was made.
Capitalization Size Risk: Holdings in smaller companies are often more volatile than holdings in larger ones.

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