Fixed Income Asset Class Review

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Executive Summary

- Low current interest rates reflect low inflationary expectations and extraordinary central bank accommodation around the globe, aka “financial repression”
- Future fixed income returns are likely to be muted, starting with such low yields
- 2019 Performance was very good across the fixed income spectrum
- Credit exposure has been helpful, with a generalized belief we are late in cycle
- The Board is encouraged to reconsider Fixed Income benchmarks and weights, as part of its overall asset allocation discussion

(Special thanks to JP Morgan for the selective use of slides from their 1Q/2020 Guide to the Market)
https://am.jpmorgan.com/blob-gim/1383407651970/83456/MI-GTM_1Q20.pdf

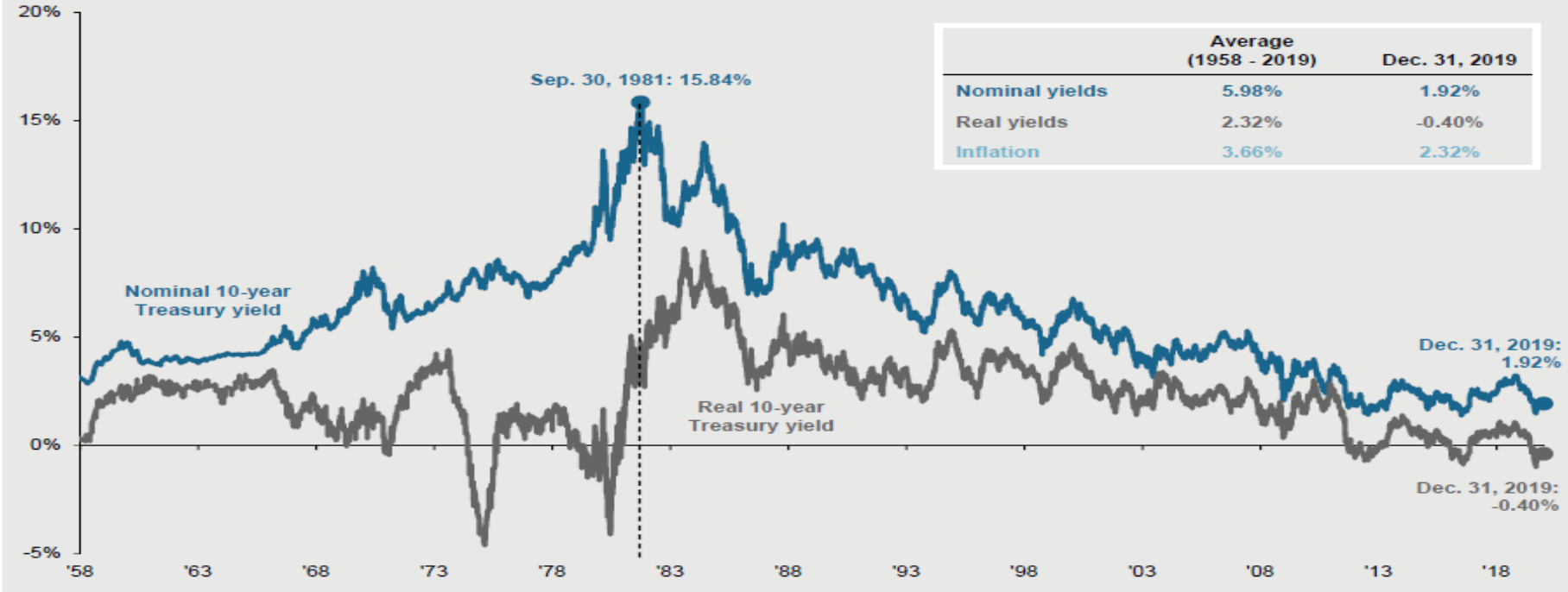
Yields over Time

Interest Rates and Investors have enjoyed a 40 year secular decline

Interest rates and inflation

Fixed income

Nominal and real 10-year Treasury yields



	Average (1958 - 2019)	Dec. 31, 2019
Nominal yields	5.98%	1.92%
Real yields	2.32%	-0.40%
Inflation	3.66%	2.32%

Source: BLS, FactSet, Federal Reserve, J.P. Morgan Asset Management.
Real 10-year Treasury yields are calculated as the daily Treasury yield less year-over-year core CPI inflation for that month except for December 2019, where real yields are calculated by subtracting out November 2019 year-over-year core inflation.
Guide to the Markets – U.S. Data are as of December 31, 2019.

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Global Fixed Income Yields

rates are historically low everywhere

Falling rates led to good returns

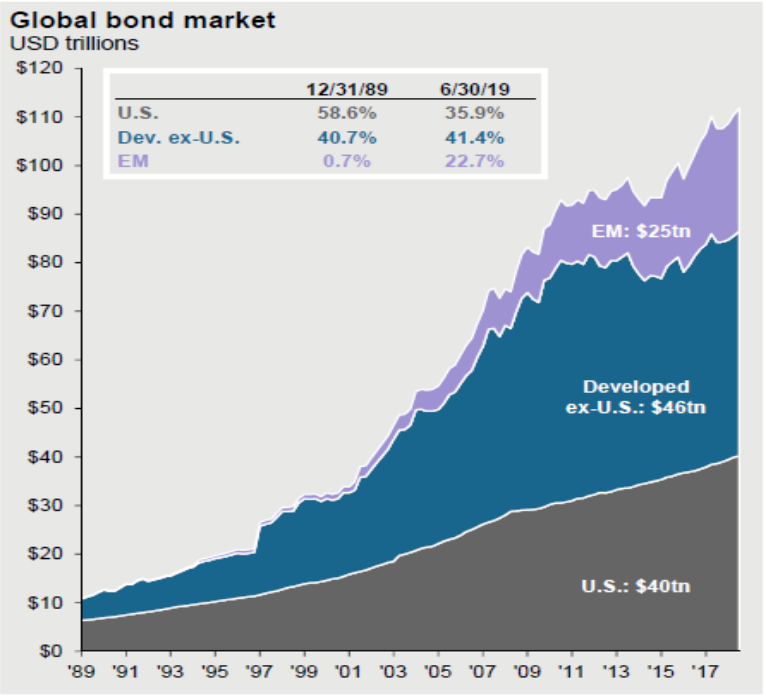
Rates are low everywhere

Fixed income

Global fixed income

GTM - U.S. | 40

Aggregates	Yield 12/31/2019	Yield 12/31/2018	2019 Return Local	2019 Return USD	Duration	Correl. to 10-year
U.S.	2.31%	3.28%	8.72%	8.72%	5.9 years	0.92
Gbl. ex-U.S.	0.94%	1.26%	-	5.77%	7.9	0.27
Japan	0.08%	0.18%	1.78%	2.76%	9.6	0.52
Germany	0.20%	0.62%	4.49%	2.61%	6.6	0.03
UK	1.30%	1.92%	7.15%	11.45%	10.6	0.21
Italy	0.97%	2.00%	10.50%	8.51%	6.8	-0.11
Spain	0.35%	0.98%	8.06%	6.11%	7.4	-0.10
Sector						
Euro Corp.	0.51%	1.30%	6.24%	4.32%	5.2 years	0.27
Euro HY	3.46%	5.33%	12.29%	10.27%	4.2	-0.22
EMD ($)	4.91%	6.86%	-	15.04%	7.5	0.26
EMD (LCL)	5.22%	6.46%	12.34%	13.47%	5.4	0.02
EM Corp.	4.51%	6.14%	-	13.09%	5.7	0.09



Source: J.P. Morgan Asset Management; (Left) Barclays, Bloomberg, FactSet; (Right) BIS.
Fixed income sectors shown above are provided by Bloomberg and are represented by the global aggregate for each country except where noted. EMD sectors are represented by the J.P. Morgan EMBIG Diversified Index (USD), the J.P. Morgan GBI EM Global Diversified Index (LCL) and the J.P. Morgan CEMBI Broad Diversified Index (Corp). European Corporates are represented by the Bloomberg Barclays Euro Aggregate Corporate Index and the Bloomberg Barclays Pan-European High Yield Index. Sector yields reflect yield to worst. Correlations are based on 10 years of monthly returns for all sectors. Past performance is not indicative of future results. Global bond market regional breakdown may not sum to 100% due to rounding.
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Inflation and inflationary expectations affect interest rates, currently muted

Inflation

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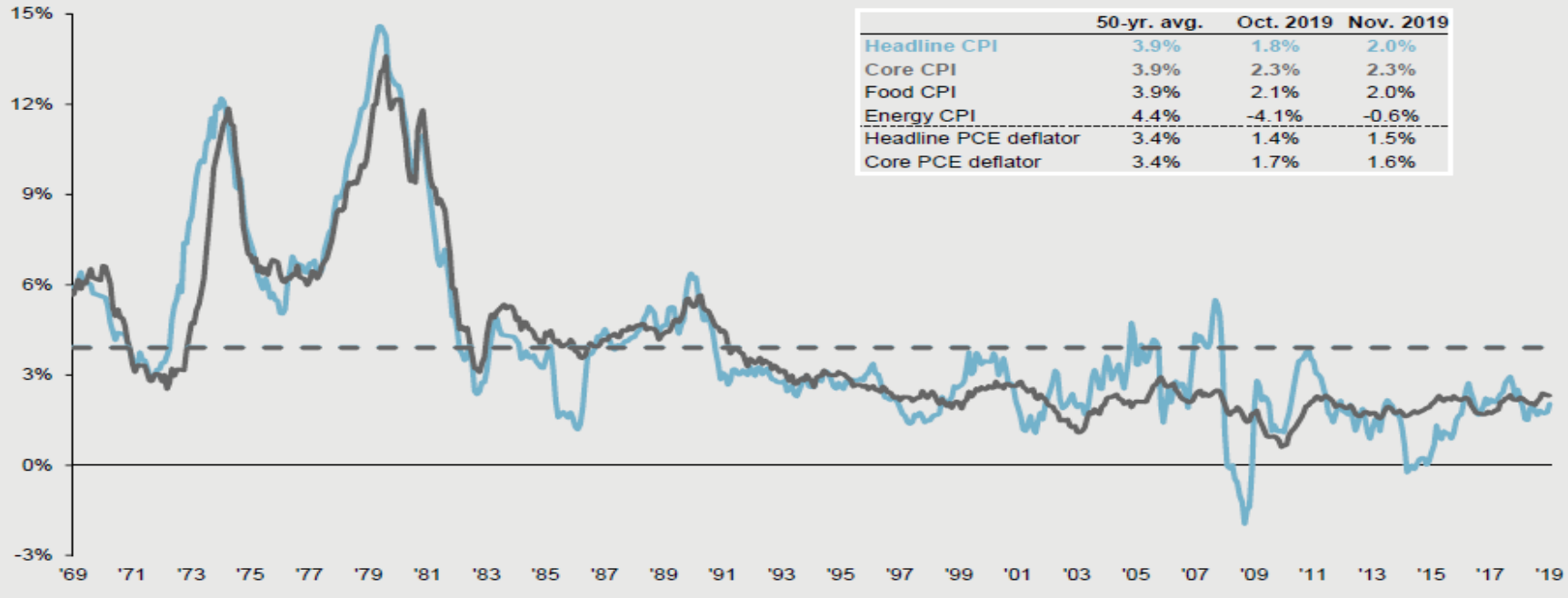
Economy

CPI and core CPI

% change vs. prior year, seasonally adjusted



	50-yr. avg.	Oct. 2019	Nov. 2019
Headline CPI	3.9%	1.8%	2.0%
Core CPI	3.9%	2.3%	2.3%
Food CPI	3.9%	2.1%	2.0%
Energy CPI	4.4%	-4.1%	-0.6%
Headline PCE deflator	3.4%	1.4%	1.5%
Core PCE deflator	3.4%	1.7%	1.6%

Source: BLS, FactSet, J.P. Morgan Asset Management.
CPI used is CPI-U and values shown are % change vs. one year ago. Core CPI is defined as CPI excluding food and energy prices. The Personal Consumption Expenditure (PCE) deflator employs an evolving chain-weighted basket of consumer expenditures instead of the fixed-weight basket used in CPI calculations.
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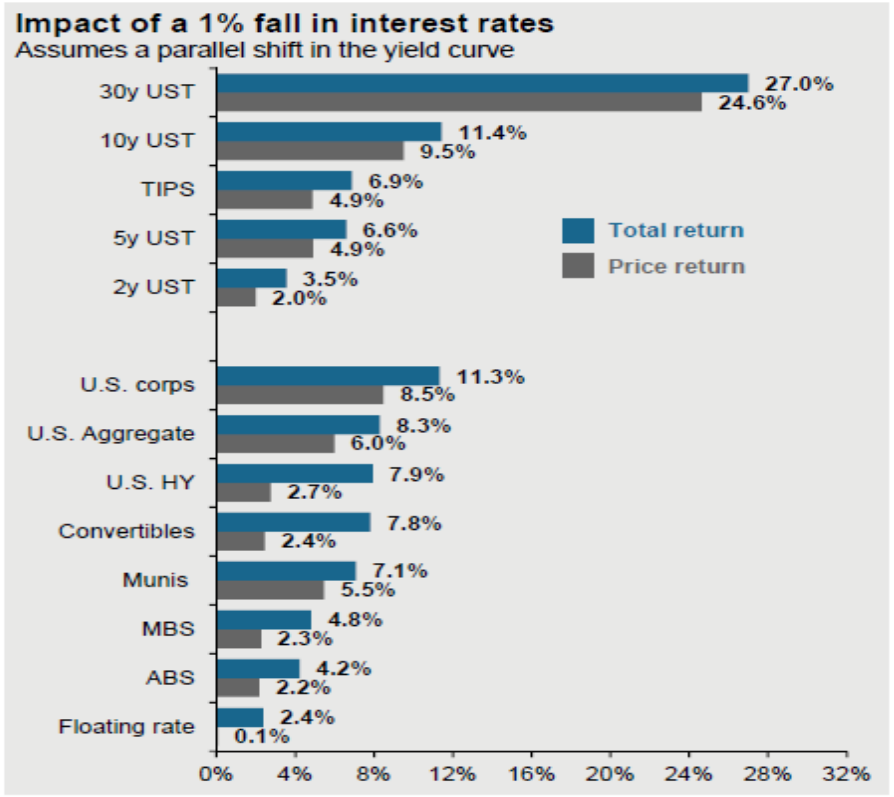
US Fixed Income Yields and Returns

Fixed income yields and returns

Fixed income

2019 Treasury Returns were very good, especially at the long end

U.S. Treasuries	Yield 12/31/2019	Yield 9/30/2019	Return 2019	Avg. Maturity	Correlation to 10-year	Correlation to S&P 500
2-Year	1.58%	1.63%	3.31%	2 years	0.67	-0.34
5-Year	1.69%	1.55%	5.82%	5	0.92	-0.32
TIPS	0.15%	0.15%	8.43%	10	0.62	0.13
10-Year	1.92%	1.68%	8.90%	10	1.00	-0.31
30-Year	2.39%	2.12%	16.43%	30	0.93	-0.32
Sector						
Corporates	2.84%	2.91%	14.54%	11.5	0.52	0.31
U.S. Aggregate	2.31%	2.26%	8.72%	8.1	0.88	-0.01
Convertibles	5.36%	5.28%	23.02%	-	-0.29	0.89
High Yield	5.19%	5.65%	14.32%	5.9	-0.22	0.71
Municipals	1.63%	1.70%	7.70%	10.0	0.54	-0.02
MBS	2.54%	2.45%	6.35%	5.1	0.82	-0.13
ABS	2.87%	2.83%	3.77%	2.3	0.06	0.20
Floating Rate	2.30%	2.56%	4.28%	1.9	-0.20	0.38



Source: Barclays, Bloomberg, FactSet, Standard & Poor's, U.S. Treasury, J.P. Morgan Asset Management. Sectors shown above are provided by Bloomberg unless otherwise noted and are represented by – U.S. Aggregate; MBS: U.S. Aggregate Securitized - MBS; ABS: J.P. Morgan ABS Index; Corporates: U.S. Corporates; Municipals: Muni Bond 10-year; High Yield: Corporate High Yield; TIPS: Treasury Inflation-Protected Securities (TIPS); U.S. Floating rate index; Convertibles: U.S. Convertibles Composite. Yield and return information based on bellwethers for Treasury securities. Sector yields reflect yield to worst. Convertibles yield is based on U.S. portion of Bloomberg Barclays Global Convertibles. Correlations are based on 15-years of monthly returns for all sectors. Change in bond price is calculated using both duration and convexity according to the following formula: New Price = (Price + (Price * -Duration * Change in Interest Rates))+(0.5 * Price * Convexity * (Change in Interest Rates)^2). Chart is for illustrative purposes only. Past performance is not indicative of future results.
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US 2 year yields ended the year well below where they started

US 10 Year Yields dropped sharply through Q3, then drifted back up

Consequently, the yield curve “inverted” for a time due to recessionary fears, but has since steepened again

The chart represents 10yr yield less 2 yr yield

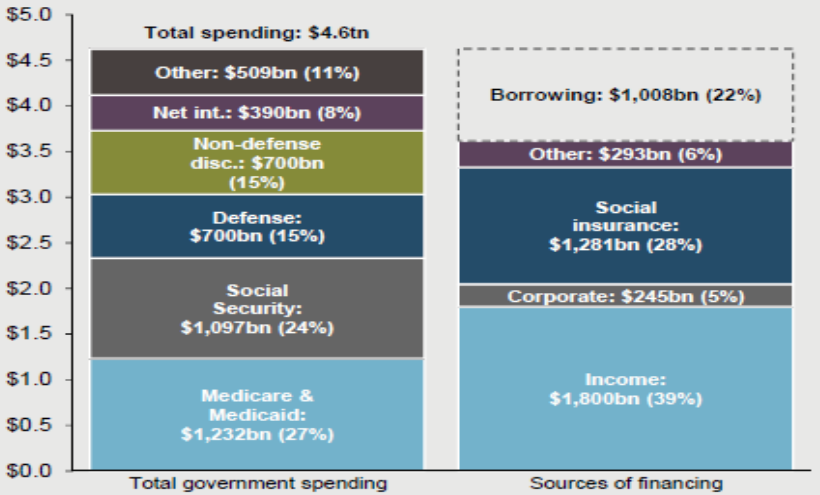
As the budget deficit widens, US Treasury issuance will continue to increase, and large supply may put upward pressure on rates

Federal finances

Economy

The 2020 federal budget

CBO Baseline forecast, USD trillions

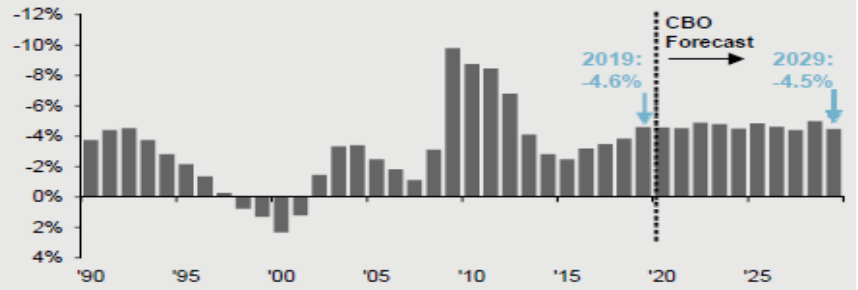


CBO's Baseline economic assumptions

	2020	'21-'22	'23-'24	'25-'29
Real GDP growth	2.2%	1.8%	1.7%	1.8%
10-year Treasury	2.2%	2.6%	3.0%	3.2%
Headline inflation (CPI)	2.3%	2.5%	2.4%	2.3%
Unemployment	3.7%	4.0%	4.5%	4.7%

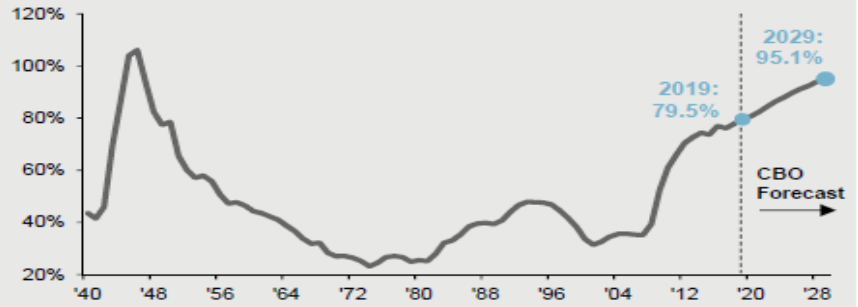
Federal budget surplus/deficit

% of GDP, 1990 – 2029, 2019 CBO Baseline



Federal net debt (accumulated deficits)

% of GDP, 1940 – 2029, 2019 CBO Baseline, end of fiscal year



Source: CBO, J.P. Morgan Asset Management; (Top and bottom right) BEA, Treasury Department.
2020 Federal Budget is based on the Congressional Budget Office (CBO) August 2019 Baseline Budget Forecast. CBO Baseline is based on the Congressional Budget Office (CBO) August 2019 Update to Economic Outlook. Other spending includes, but is not limited to, health insurance subsidies, income security and federal civilian and military retirement. Note: Years shown are fiscal years (Oct. 1 through Sep. 30). Economic projections as of August 2019.
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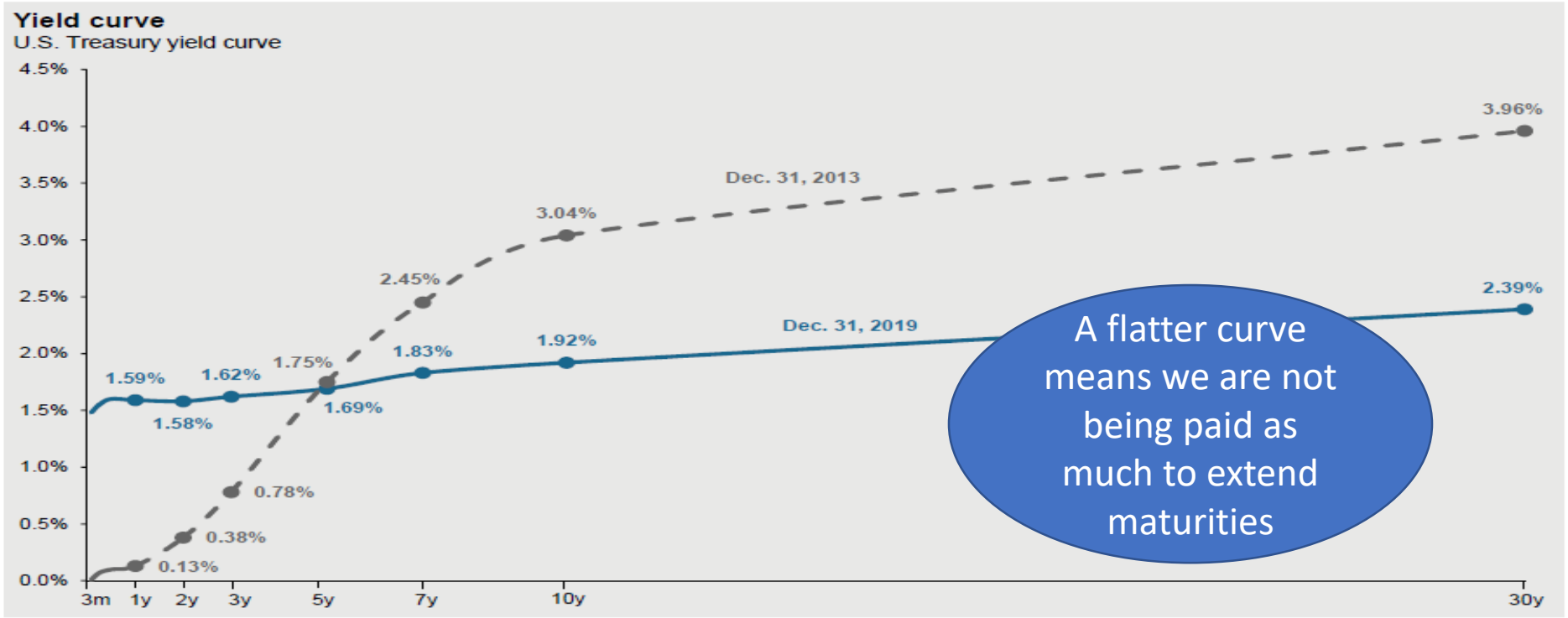
Yield Curves: then and now

a low and flat yield curve represents interest rate risk

Yield curve

Fixed income



Source: FactSet, Federal Reserve, J.P. Morgan Asset Management.
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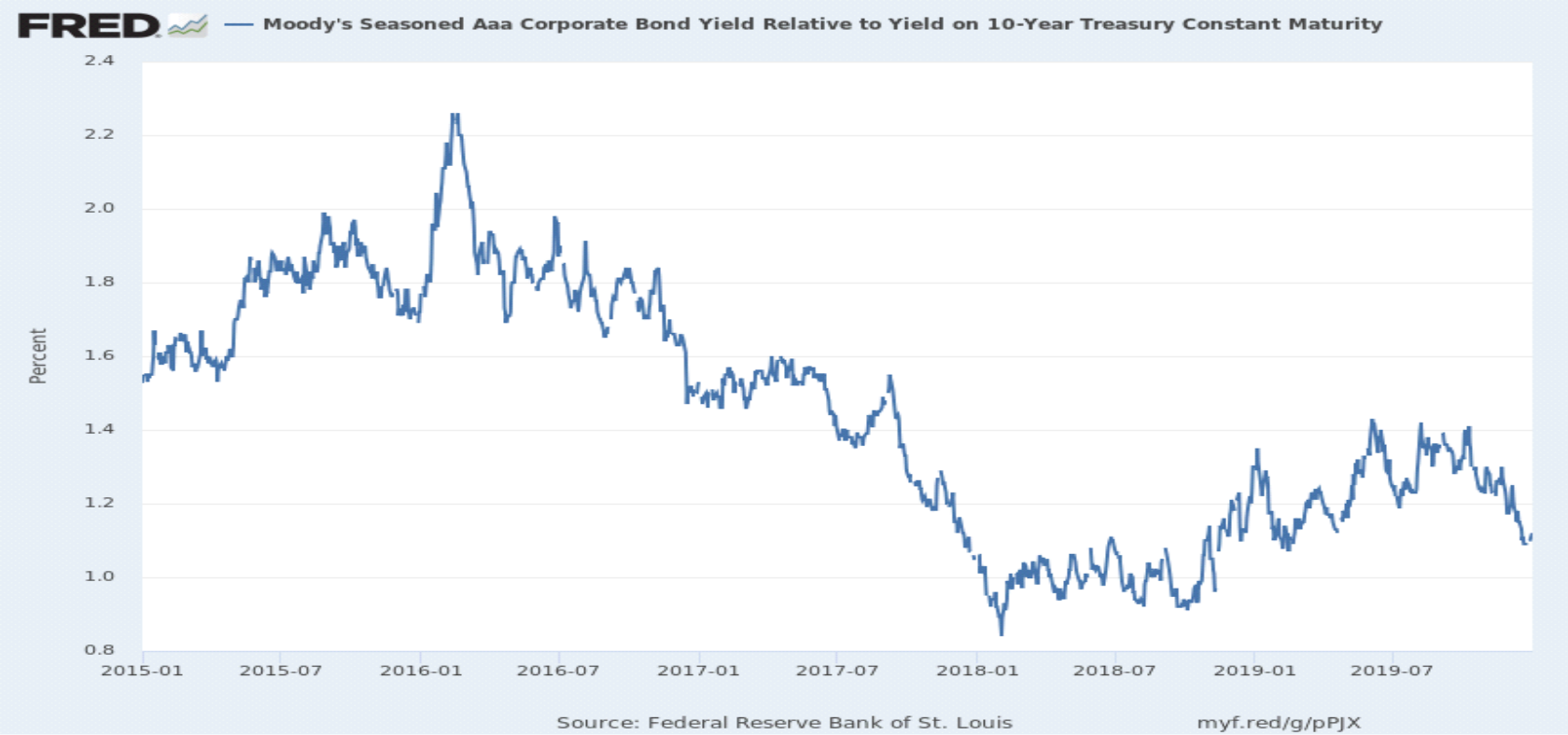
Credit Spreads

smaller numbers mean being paid less to take the risk,
investors are willing to take more credit risk at lower returns



The Baa issue, aka “Covenant Lite”

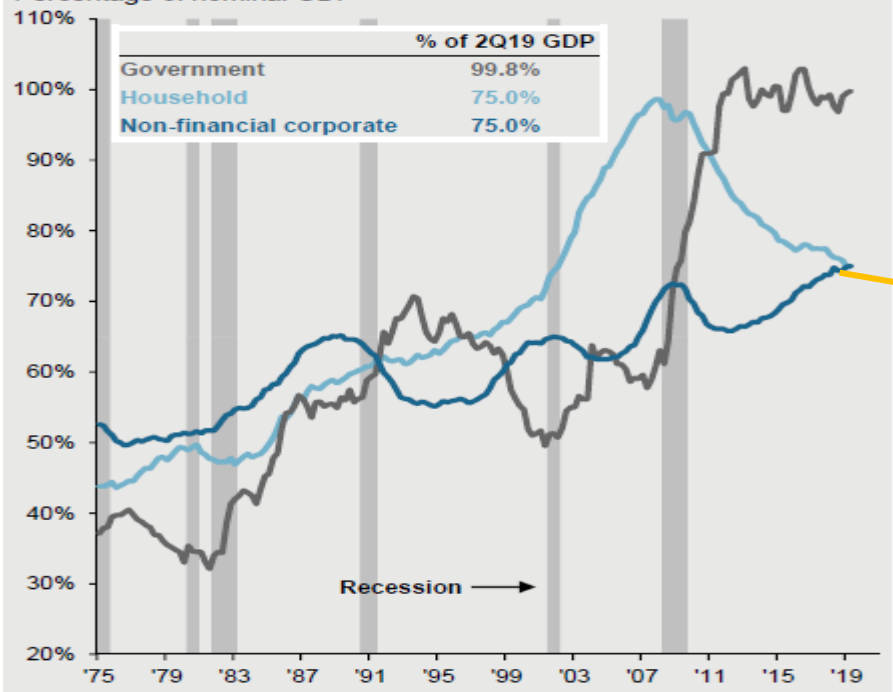
issuance of lower grade corporates predominates, and issuers have pushed out maturities, adding to interest rate and credit risk

Fixed income

Corporate debt

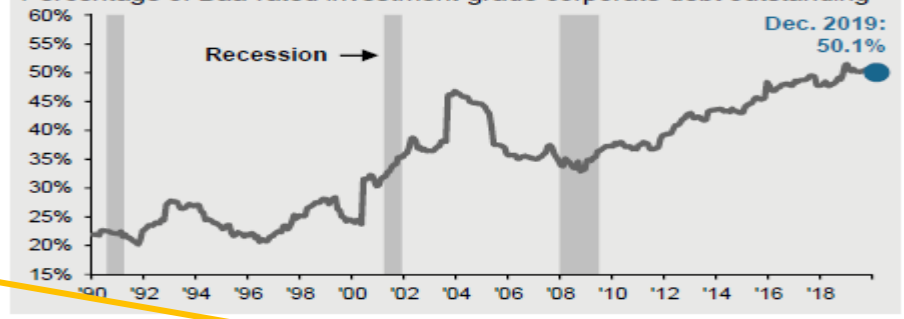
U.S. debt to GDP ratios

Percentage of nominal GDP



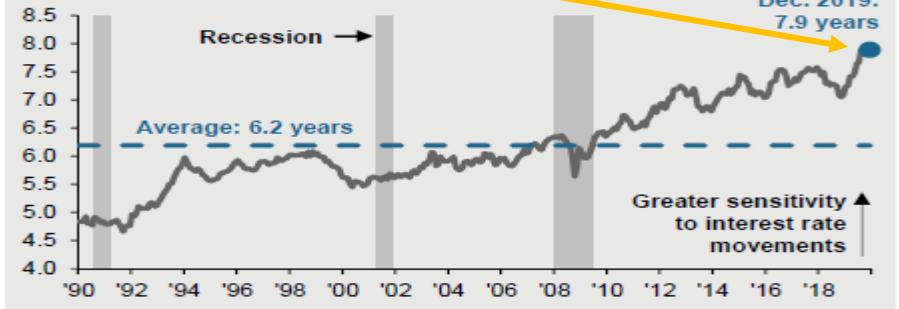
Baa corporate debt*

Percentage of Baa-rated investment-grade corporate debt outstanding



Duration of investment grade corporate credit universe

Years



Source: FactSet, J.P. Morgan Asset Management; (Left) Bank for International Settlements (BIS); (Top and bottom right) Barclays, Bloomberg. Government, household and non-financial corporate debt refers to gross debt. General government debt is comprised of core debt instruments that include currency and deposits, loans and debt securities. All debt values are shown at market value. *Baa debt outstanding and duration of investment grade is based on the Bloomberg Barclays U.S. Aggregate Investment Grade Corporate Credit Index. Baa debt is the lowest credit rating issued by Moody's for investment-grade debt.
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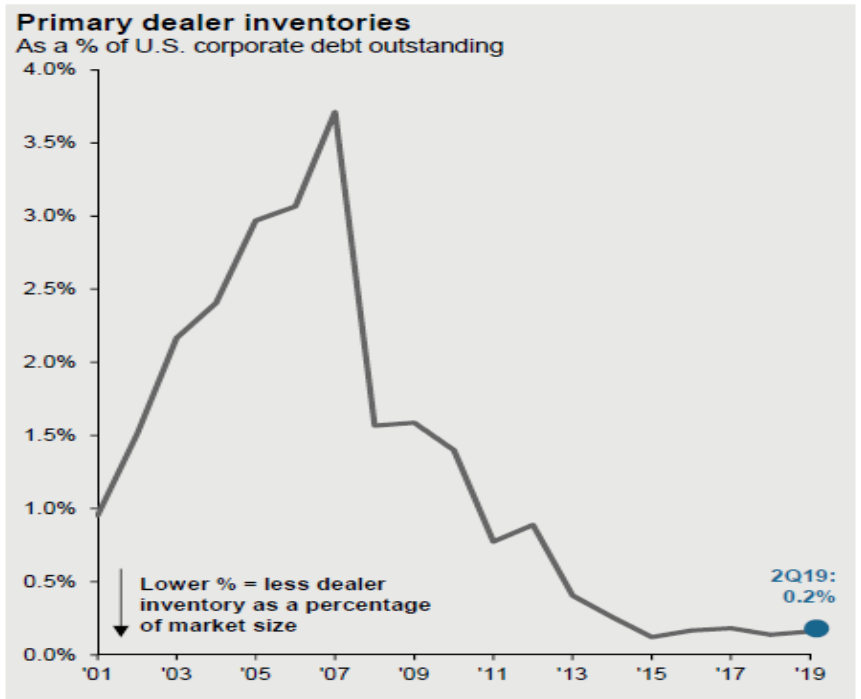
Liquidity

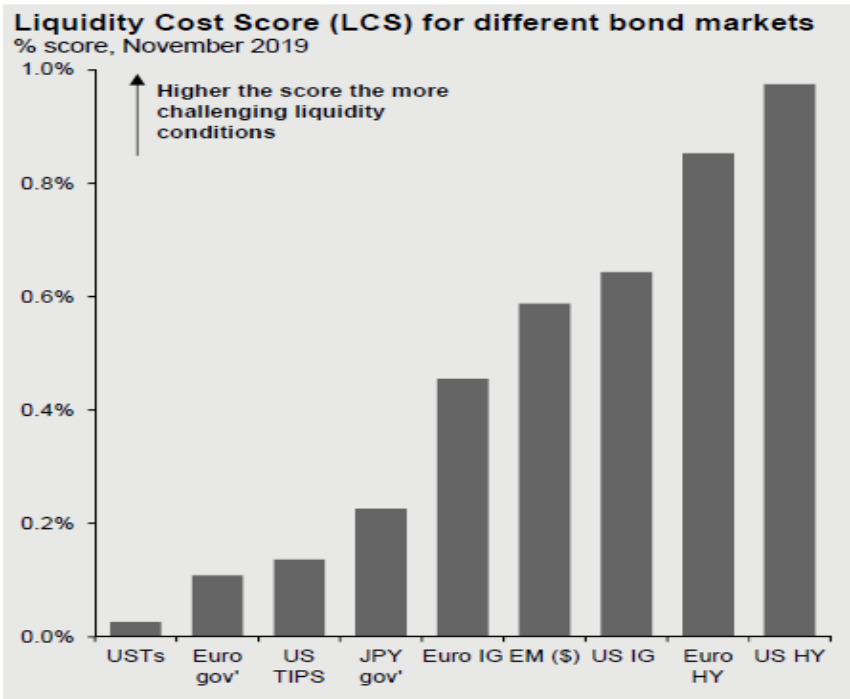
Market Makers less willing to hold bond inventory

lower liquidity can mean higher volatility

Bond market liquidity

Fixed income





Source: J.P. Morgan Asset Management; (Left) Federal Reserve Bank of New York, SIFMA; (Right) Barclays. U.S. corporate debt outstanding includes money market debt. Liquidity Cost Score focuses on the cost of trading across different asset classes by assessing 20,400 fixed income securities. It is calculated by the bid-spread minus the ask-spread multiplied by the option-adjusted spread duration (OASD). *Guide to the Markets – U.S.* Data are as of December 31, 2019.

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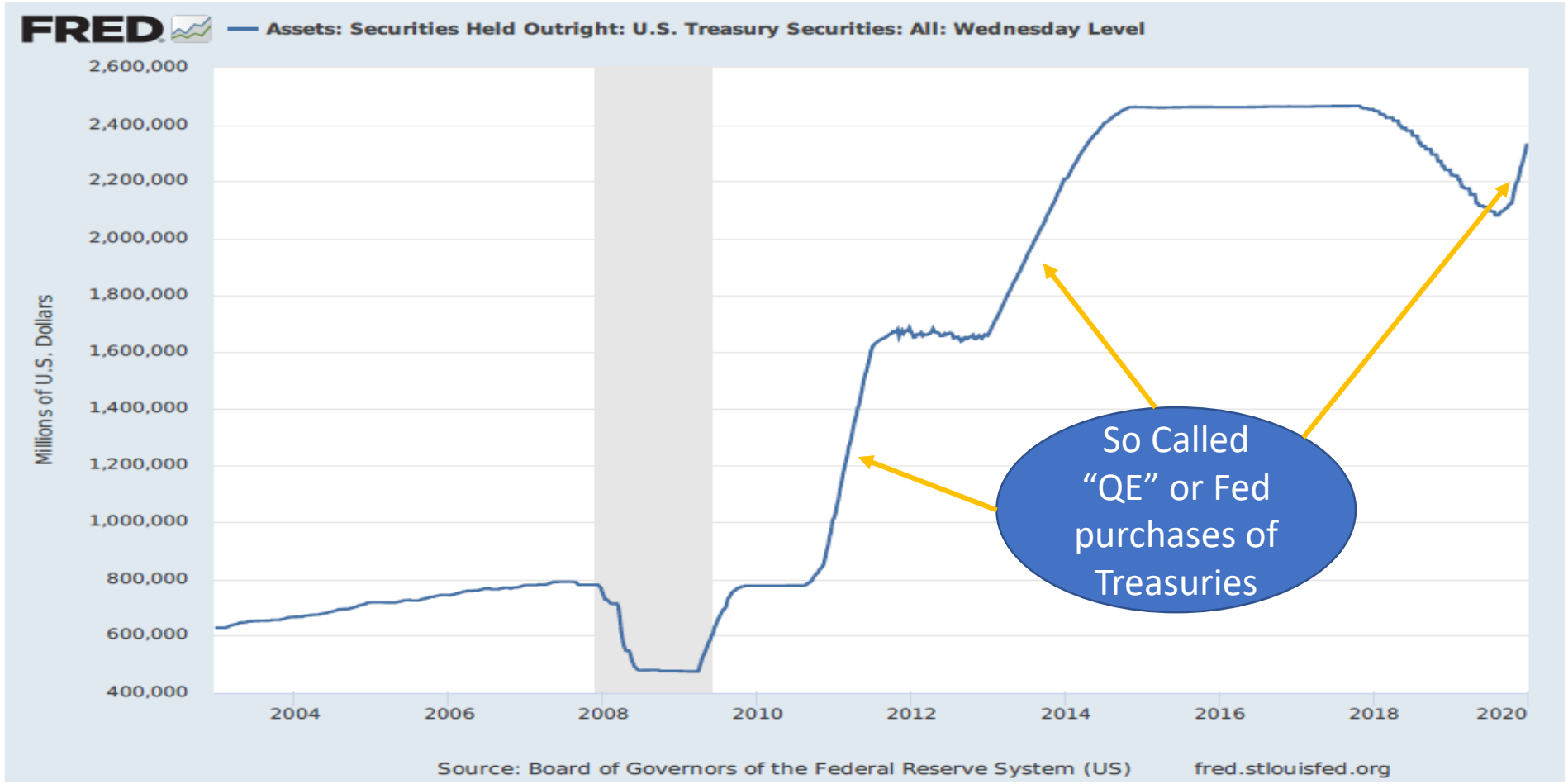
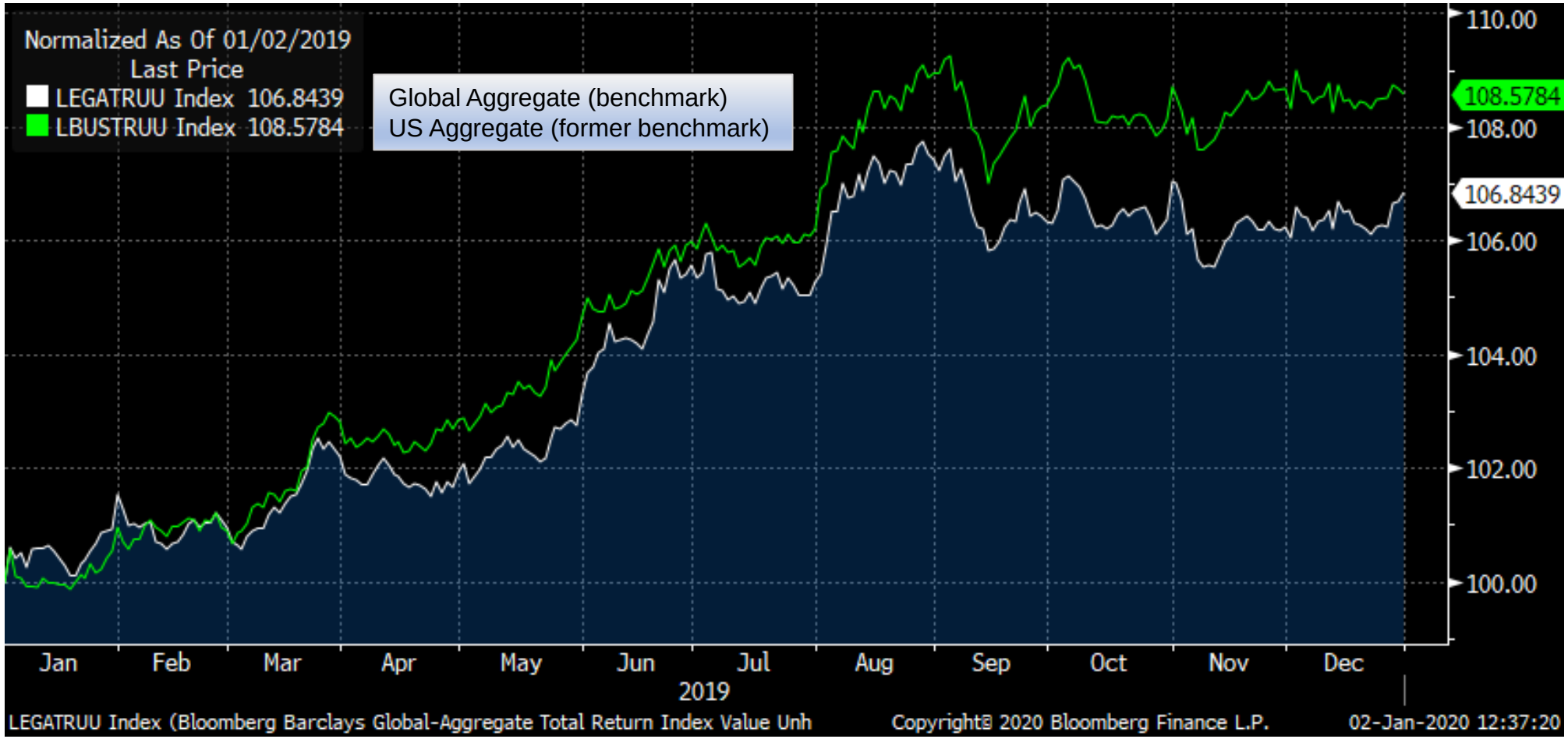
Federal Reserve

Fed remains accommodative to keep rates low

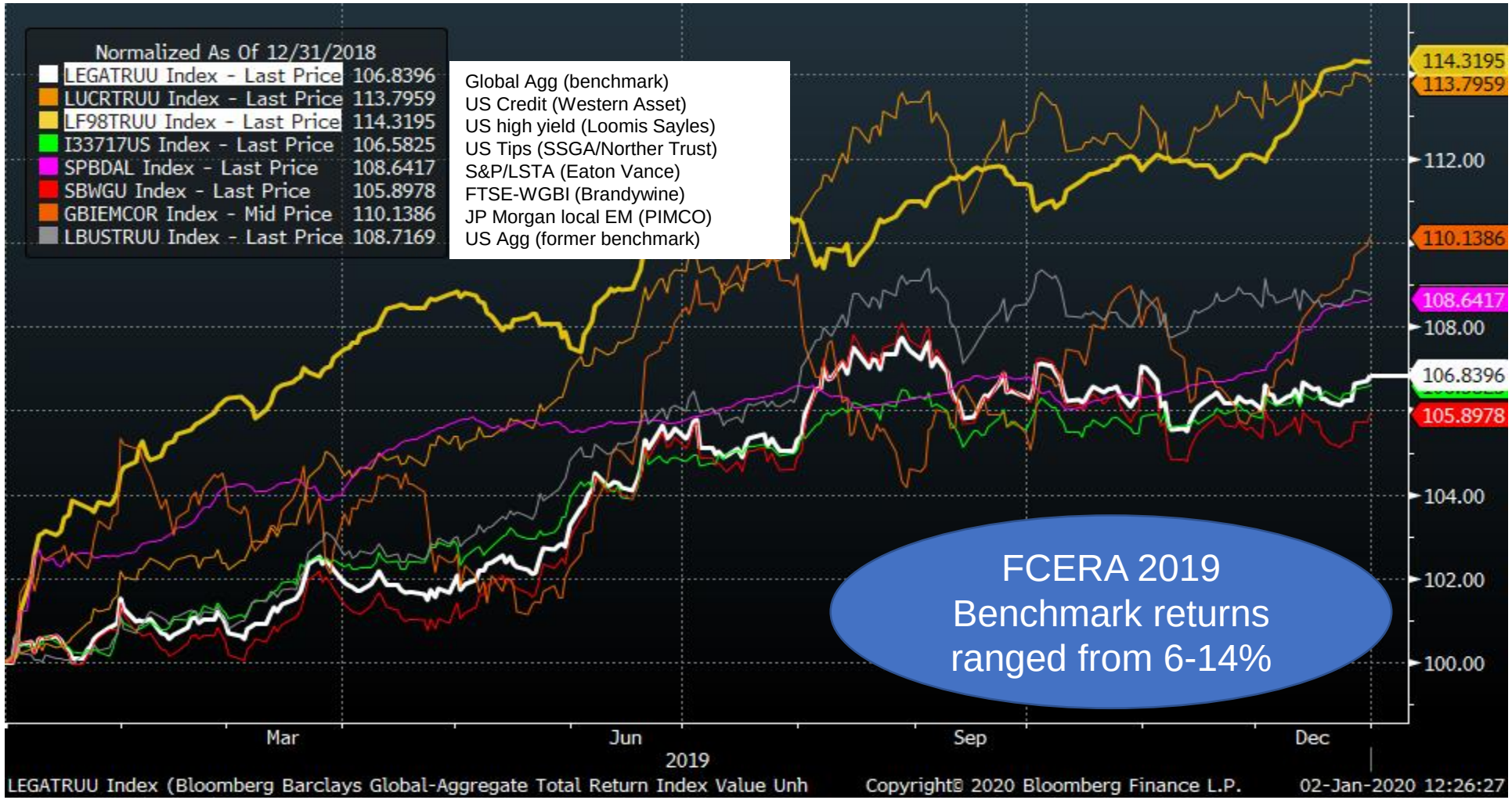


Fixed Income Benchmarks – 2019 Performance

A very strong year for fixed income returns



FCERA Fixed Income Portfolio – Sub Benchmarks



FCERA Fixed Income Benchmark
2019 Performance Estimates

Index	Category	2019 Perf	Manager	FCERA %	2019 BOY Fixed Inc %	Perf weighted
Global Agg	Index	6.8%		0.0%	0	n/a
US Agg	Index	8.7%		0.0%	0	n/a
US Credit	Inv Grade	13.8%	Western Asset	4.7%	14.1%	1.95%
US High Yield	High Yield	14.3%	Loomis Sayles	6.7%	20.1%	2.88%
US TIPS	Inflation Sens	6.6%	SSGA/NT	3.9%	11.7%	0.77%
S&P/LSTA	Bank Loans	8.6%	Eaton Vance	6.7%	20.1%	1.73%
FTSE-WGBI	Sovereign Credit	5.9%	Brandywine	5.5%	16.5%	0.97%
JPM EM	Emerging Local Currency	10.1%	Pimco	4.8%	14.4%	1.46%
Securitized	Mortgage Credit	6.4%	RBC	1.0%	3.0%	0.19%
total				33.3%	100.0%	10.0%
	Note: Bank Loans and High Yield have been trimmed for Glidepath in 2019					
	Thus: actual returns are likely less than indicated above					

2019 FCERA performance should handily beat benchmark due to credit tilt

2019 Initial Fixed Income Performance Conclusions

- A very strong year as Fed reversed course and re-initiated monetary easing, lowering US rates across the curve
- Recession fears (which bring lower rates) appear to have receded, with global growth stabilizing and trade tensions lessening
- Credit spreads tightened, adding to returns
- High Yield was good despite drag by energy sector weakness
- Note: regulatory and business changes have dramatically lowered fixed income liquidity. Dealers now carry far less inventory.
- Note: recent disruption in Repo market was troubling development, but Fed has injected massive amounts of liquidity
  - Repo = Repurchase agreements allow large players overnight funding

FCERA Fixed Income

Potential Risk Factors as sources of incremental return

Starting with the benchmark, what factors do we add or subtract?

- Rate of Return Target (7%) with likely increase in volatility, Fixed Income is a buffer
- Interest Rates: Longer duration means higher yield but also more int rate sensitivity
- Credit spreads can add yield, related to the business cycle and growth
- Country/Currency: currency risk (at least in developed countries)
- Liquidity/Illiquidity: illiquidity (ie cannot sell when you want to)
- Inflation: TIPS provide protection, but rising inflation or inflationary expectations will raise rates and lower returns of other fixed instruments
- GeoPolitical: Trump, tariffs, China, Middle East, Brexit, North Korea (uncompensated?)

FCERA Fixed Income Allocation as of 9/30/2019

	Global Agg (Hedged)	FCERA	US Agg
US % Geographic weight?	40%	78%	100%
Sovereign (Govt)	57%	25%	39%
High Yield	0	19%	0
Emerging Markets	0	14%	0
TIPS	0	14%	0
US $ Currency?	100%	69%	100%
Bank Loans	0%	16%	0%
Investment Grade	100%	52%	100%
5 year performance	2.0%	3.0%	3.1%

2020 10 Year Expected Returns (per Verus assumptions)

(US)1.9% +/- 6.7%

4%, +/- 11%

6.4%, +/- 12%

2.2% +/- 5.4%

?

5.8% +/- 10%

1.4%, +/- 6.2%

FCERA Fixed Income Portfolio
interest rates + risk factors (think pyramid)

From benchmark as base case: Global Agg, US Agg + ?
Add or tilt toward or away from:

- Western Asset-US Investment Grade Credit: Corporate credit (?)
- RBC Access Capital: Mortgage Securities: Mortgage credit, illiquidity (?)
- Loomis Sayles High Yield: Corp credit, esp. lower grades of bonds(?)
- Eaton Vance Senior Loans: Credit, illiquidity (?)
- Northern Trust (was SSGA) Tips: inflation (protection) (?)
- Brandywine – Global Sovereign (governments): currencies, credit, political (?)
- PIMCO – Emerging Market Debt: sovereign credit (monetary policy, fiscal condition, trade balance, forex reserves), currency, inflation (?)
- Carlyle – Private Credit (officially in private markets): credit, illiquidity, equity/private equity conditions and correlation (?)

FCERA Board Fixed Income Considerations for 2020

- Discuss overall fixed income weighting (as a part of asset allocation/glidepath) current target 23% + 8% private credit or 31% of total portfolio
- Choose or affirm fixed income benchmark (US Agg or Global Agg ?)
- Discuss geographic tilt vs benchmark (Global Agg benchmark 40%, Plan is 78%)
- Decide on exposures and other tilts vs. benchmark/core
  - currency exposure?: Plan is 100% US ex. Brandywine, who makes currency bets
  - credit tilt ?
- Consider risk mitigation measures, including core bonds, Risk Parity, long UST
- Active vs. Passive? Every one of these decisions can be implemented passively

NOTE: Manager Selection is the least important decision!!

Summary

- Fixed Income remains an important source of Plan stability & diversification
- Despite low yields to begin 2019, fixed income returns were healthy
- Expected fixed income returns are modest, supported by macro policies
- It is prudent for FCERA to revisit its fixed income benchmark
- From the benchmark as a starting point, it will be easier to add risk premia
  - Country/currency
  - Duration (maturity)
  - Credit
  - Illiquidity (particularly private credit)
  - Equity/Growth sensitivity (High Yield bonds)

Appendix

The Role of Fixed Income Types Per Verus

U.S. Treasuries

FCERA does not currently have an allocation here

ROLE

- Produce stable income and returns. Viewed as risk-free asset, but can exhibit price volatility.
- Liquid, and may be used as substitute for cash.
- Hedge against downside movements in risk assets. Investors often purchase U.S. Treasuries as a safe haven when other assets are falling, which may result in price appreciation of U.S. Treasuries.

RETURN DRIVERS	RISKS
+ Annualized yield	Higher interest rates
= Expected nominal return	Inflation risk

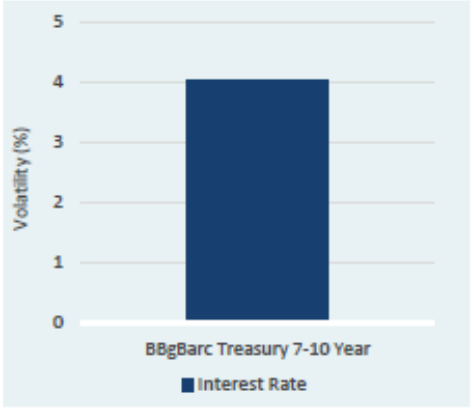
US TREASURY

	Correlation	Excess Return*
10yr US Treasury	1.0	0.0
Global Sovereign ex-US	0.4	1.6
US Core	0.9	-0.5
US Core Plus	0.5	-2.9
US Large Equity	-0.3	-10.1
Global Equity	-0.2	-6.4

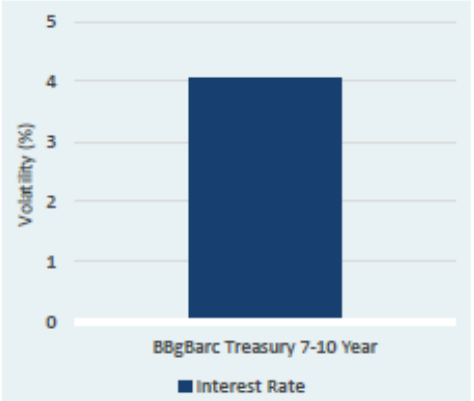
10 Year correlation as of 12/31/18, 10 year annualized return as of 12/31/18

**Excess Return = asset class shown in header minus asset class shown horizontally in left row Source: Morningstar*

ABSOLUTE RISK



FACTOR RISK CONTRIBUTION



Source: Bloomberg, Barra, as of 12/6/18

U.S. Treasuries are somewhat unique in that risk is driven by one single factor. A single risk means that standalone risks (left) are the same as correlation-adjusted risks (right)

TIPS

Northern Trust
4% of portfolio

ROLE

- Hedge against expected and unexpected inflation.
- Liquid, and may be used as substitute for cash.
- May be included in a diversified inflation-protection basket.
- Provide diversification within nominal bond portfolios.
- Although TIPS are considered a "real return" instrument, these securities possess a high duration, making them sensitive to interest rate changes.

RETURN DRIVERS	RISKS
+ Real yield	Higher interest rates without a commensurate rise in inflation
+ Inflation	
= Expected nominal return	

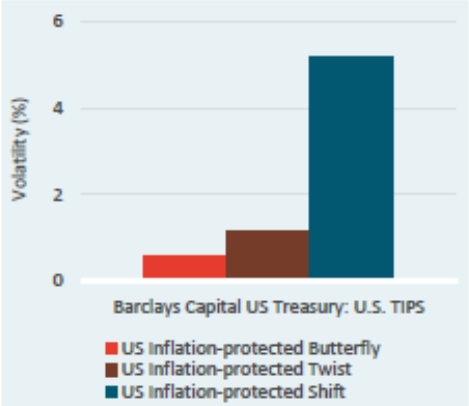
US TIPS

	Correlation	Excess Return*
US TIPS	1.0	0.0
Inflation	0.0	1.8
US Core	0.7	0.2
US Core Plus	0.6	-2.3
US Large Equity	0.1	-9.5
Global Equity	0.2	-5.8

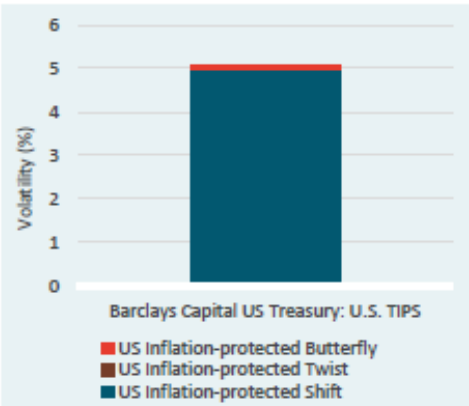
10 Year correlation as of 12/31/18, 10 year annualized return as of 12/31/18

**Excess Return = asset class shown in header minus asset class shown horizontally in left row Source: Morningstar*

ABSOLUTE RISK



FACTOR RISK CONTRIBUTION



Source: Barclays, Barra, as of 4/9/19

TIPS real rate factors: "Shift" captures the changes in the level of the yield curve. "Twist" captures the changes in slope of the yield curve. "Butterfly" captures the changes in curvature of the yield curve

Global sovereign ex-US (unhedged)

Brandywine
5% of portfolio

ROLE

- Provide exposure to a broader bond market and to global currencies (unhedged).
- Hedge against downside movements in risk assets, although if unhedged may be hurt by U.S. dollar flight-to-quality.
- Provide diversification within nominal bond portfolios.

GLOBAL SOV. (UNHEDGED)

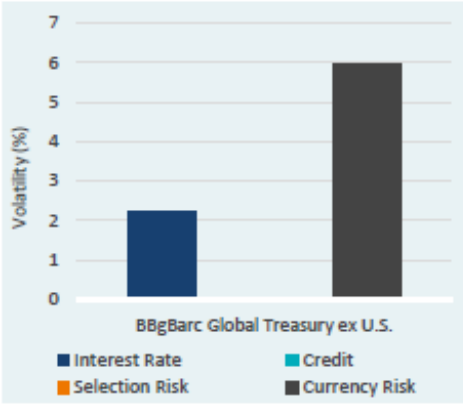
	Correlation	Excess Return*
Global Sovereign ex-US	1.0	0.0
US Core	0.6	-2.1
US Core Plus	0.5	-4.5
Global Equity	0.4	-8.0
US Large Equity	0.3	-11.7
Commodities	0.5	5.2

10 Year correlation as of 12/31/18, 10 year annualized return as of 12/31/18

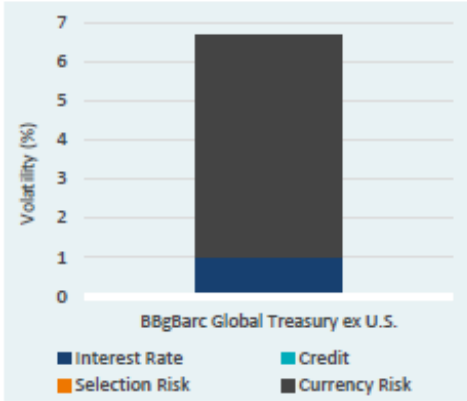
**Excess Return = asset class shown in header minus asset class shown horizontally in left row Source: Morningstar*

RETURN DRIVERS	RISKS
+ Annualized yield	Higher interest rates
+/- Implied currency effect	Inflation risk
= Expected nominal return	Currency volatility

ABSOLUTE RISK



FACTOR RISK CONTRIBUTION



Source: Bloomberg, Barra, as of 12/6/18

U.S. Credit

Western Asset
4% of portfolio

ROLE

- Produce stable income and returns.
- Earn a credit risk premium.
- Offers some exposure to positive economic growth.
- Credit risk and equity risk are positively correlated, although higher quality credit typically offers greater diversification benefits.

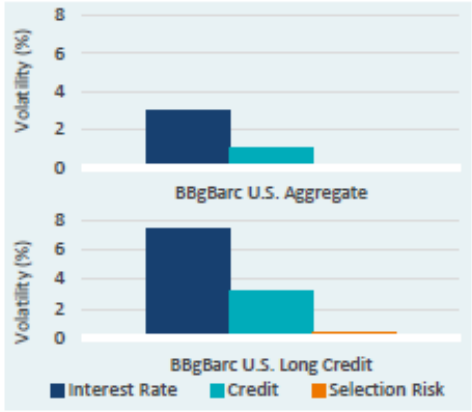
	US CORE		US CORE +		ST GOV'T/CR.		LT CREDIT	
	Correlation	Excess Return*	Correlation	Excess Return*	Correlation	Excess Return*	Correlation	Excess Return*
US Core	1.0	0.0	0.8	2.4	0.8	-2.0	0.8	4.1
US Core +	0.8	-2.4	1.0	0.0	0.7	-4.4	0.9	1.7
LT Credit	0.8	-4.1	0.9	-1.7	0.5	-6.1	1.0	0.0
US HY	0.1	-7.6	0.6	-5.2	0.4	-9.6	0.4	-3.5
US Large	0.0	-9.6	0.2	-7.2	0.0	-11.6	0.2	-5.5
Global Equ.	0.0	-6.0	0.3	-3.5	0.1	-7.9	0.2	-1.9

10 Year correlation as of 12/31/18, 10 year annualized return as of 12/31/18

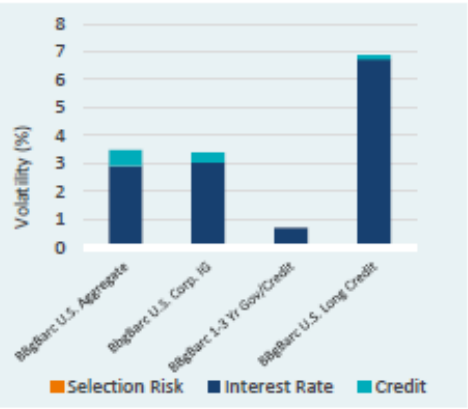
**Excess Return = asset class shown in header minus asset class shown horizontally in left row Source: Morningstar*

RETURN DRIVERS	RISKS
+ US Treasury yield (similar duration Treasury index)	Higher interest rates
+ Option-adjusted-spread	Credit risk
- Effective default rate = *default rate * (1-recovery rate)*	Inflation risk
= Expected nominal return	

ABSOLUTE RISK



FACTOR RISK CONTRIBUTION



Source: Bloomberg, Barra, as of 12/6/18

High yield

Loomis Sayles
3% of portfolio

ROLE

- Earn a credit risk premium.
- Enhance returns within fixed income portfolios.
- Offers some exposure to positive global economic growth.
- Credit risk and equity risk are positively correlated. Greater exposure to credit should not be expected to diversify equity risk.

HIGH YIELD

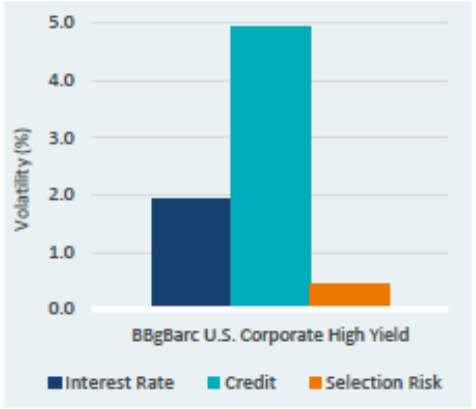
	Correlation	Excess Return*
High Yield	1.0	0.0
US Treasury	-0.2	8.1
Global Sov.	0.3	9.7
US Core	0.1	7.6
US Core Plus	0.6	5.2
US Large Equity	0.6	-2.0

10 Year correlation as of 12/31/18, 10 year annualized return as of 12/31/18

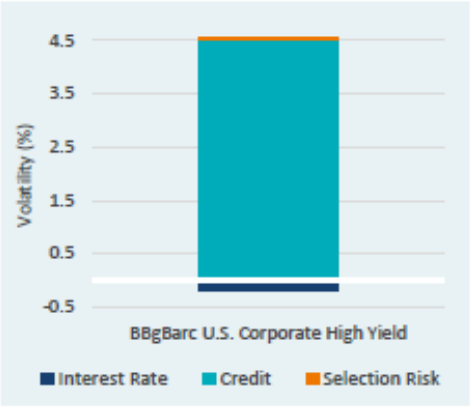
**Excess Return = asset class shown in header minus asset class shown horizontally in left row Source: MPI*

RETURN DRIVERS	RISKS
+ US Intermediate Treasury	Higher interest rates
+ Option-adjusted-spread	Credit risk
- Effective default rate = *default rate * (1-recovery rate)*	Inflation risk
= Expected nominal return	

ABSOLUTE RISK



FACTOR RISK CONTRIBUTION



Source: Bloomberg, Barra, as of 12/6/18

Bank loans

Eaton Vance
4% of portfolio

ROLE

- Earn a credit risk premium.
- Enhance returns within fixed income portfolios.
- Provide exposure to positive economic growth.
- Floating interest rates result in less interest rate risk.
- Credit risk and equity risk are positively correlated. Greater exposure to credit should not be expected to diversify equity risk.

BANK LOANS

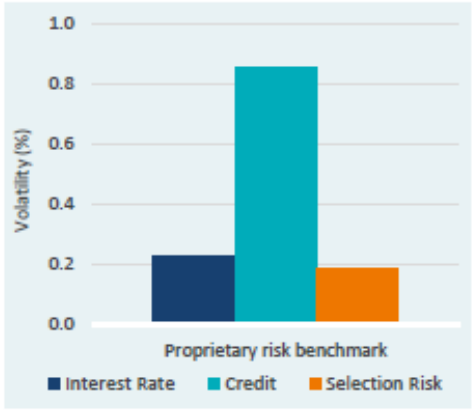
	Correlation	Excess Return*
Bank Loans	1.0	0.0
US Treasury	-0.4	5.6
High Yield	0.9	-2.6
US Large Equity	0.4	-4.6
US Core Plus	0.4	2.7
Short-Term Gov't/Credit	0.2	7.1

10 Year correlation as of 12/31/18, 10 year annualized return as of 12/31/18

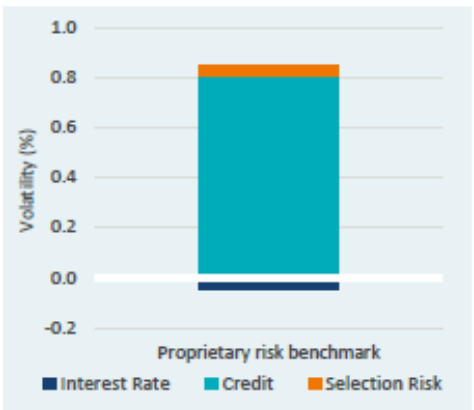
**Excess Return = asset class shown in header minus asset class shown horizontally in left row Source: Morningstar*

RETURN DRIVERS	RISKS
+ LIBOR	Credit risk
+ Spread	Inflation risk
- Effective default rate = *default rate * (1-recovery rate)*	
= Expected nominal return	

ABSOLUTE RISK



FACTOR RISK CONTRIBUTION



Source: Verus, Barra, as of 12/6/18

Emerging market debt

PIMCO
4% of portfolio

ROLE

- Earn a credit risk premium.
- Enhance returns of fixed income portfolios.
- Provide exposure to positive emerging market economic growth.
- Emerging market hard debt is associated with greater credit risk, while emerging market local debt is associated with greater currency risk.

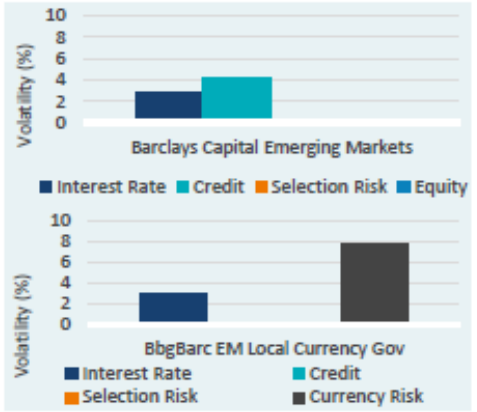
	EM DEBT (H)		EM DEBT (L)	
	Correlation	Excess Return*	Correlation	Excess Return*
EM Debt (H)	1.0	0.0	0.8	-4.8
EM Debt (L)	0.8	4.8	1.0	0.0
Global Sovereign	0.6	6.8	0.7	2.0
Global Credit	0.8	2.9	0.8	-1.9
Commodities	0.4	12.0	0.6	7.2
US Large Equity	0.5	-4.9	0.6	-9.7

10 Year correlation as of 12/31/18, 10 year annualized return as of 12/31/18

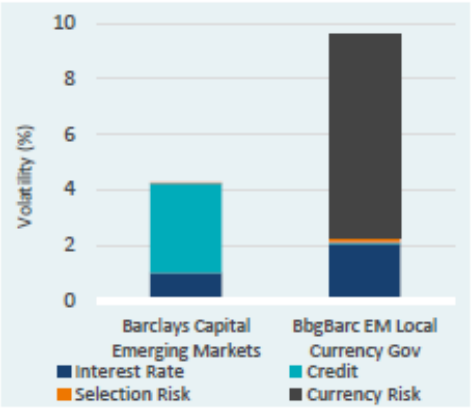
**Excess Return = asset class shown in header minus asset class shown horizontally in left row Source: Morningstar*

RETURN DRIVERS	RISKS
+ US Intermediate Treasury	Higher interest rates
+ Option-adjusted-spread	Credit risk
- Effective default rate = *default rate * (1-recovery rate)*	Currency volatility (EMD Local)
+/- Implied currency effect	
= Expected nominal return	

ABSOLUTE RISK



FACTOR RISK CONTRIBUTION



Source: Bloomberg, as of 12/6/18