



Canterbury Consulting

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## Quarterly Asset Class Report

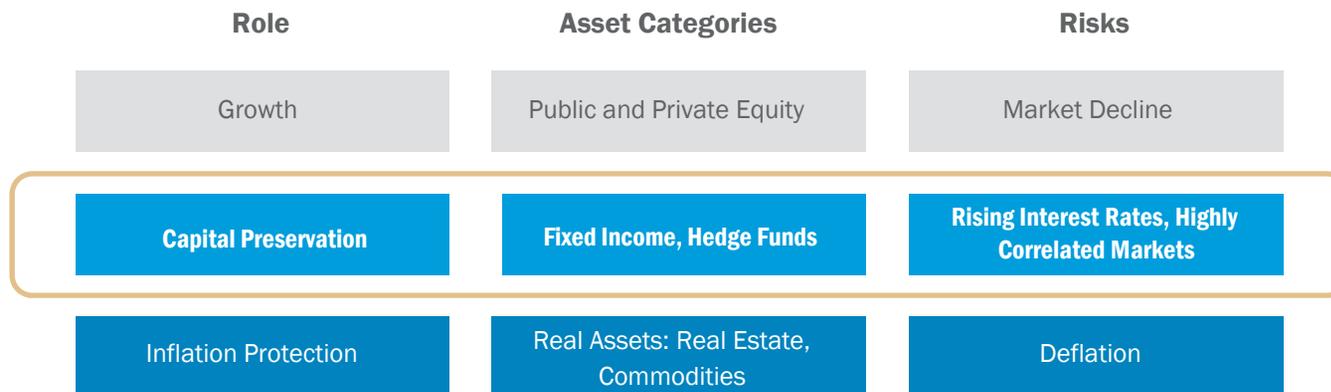
### Tax Exempt Fixed Income

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December 31, 2018

Canterbury Consulting recommends and communicates asset-class strategy with the objective of constructing a diversified portfolio of fixed income strategies designed to (in aggregate):

- (i) Preserve capital and mitigate volatility
- (ii) Provide measured exposure to the diverse universe of fixed income securities
- (iii) Exhibit returns uncorrelated to equity markets



- Canterbury fixed income portfolios are expected to deliver consistent net of fees excess returns and moderate tracking error versus the Barclays Global Aggregate
- Relative to the index, Canterbury’s current fixed income portfolios will exhibit lower duration, similar credit quality, and higher yields

# Index Returns

Fixed Income

	QTD	YTD	1 Year	3 Years	5 Years	7 Years	10 Years
Barclays Global Aggregate	1.20	-1.20	-1.20	2.70	1.08	1.00	2.49
Barclays US Agg Bond	1.64	0.01	0.01	2.06	2.52	2.10	3.48

## U.S. Treasuries

BofAML 3M US Treasury Note	0.58	1.94	1.94	1.03	0.64	0.48	0.39
Barclays Short Treasury	0.60	1.88	1.88	1.07	0.68	0.53	0.46
Barclays Intermediate Treasury	2.24	1.41	1.41	1.20	1.47	1.10	1.79
Barclays Long Term US Treasury	4.19	-1.84	-1.84	2.58	5.93	2.72	4.09
Barclays U.S. Treasury TIPS 0-5Y	-0.22	0.59	0.59	1.42	0.62	0.55	2.19
Barclays US Treasury US TIPS	-0.42	-1.26	-1.26	2.11	1.69	0.88	3.64

## U.S. Corporate Credit

Barclays US Corp IG	-0.18	-2.51	-2.51	3.26	3.28	3.48	5.92
S&P/LSTA Leveraged Loan	-3.45	0.44	0.44	4.83	3.05	4.29	8.57
BofAML US HY Master II	-4.67	-2.26	-2.26	7.26	3.82	5.94	10.99
BofAML US HY BB-B Constrained	-3.87	-2.04	-2.04	6.33	3.88	5.69	9.99
BofAML US Corporate AAA	1.25	-1.89	-1.89	2.88	3.68	2.55	3.39
BofAML US Corporate AA	1.18	-0.54	-0.54	2.68	3.17	3.02	4.40
BofAML US Corporate A	0.51	-1.94	-1.94	2.70	3.19	3.38	5.53
BofAML US Corps BBB	-0.80	-2.82	-2.82	4.10	3.51	4.02	7.58
BofAML US High Yield BB	-2.99	-2.46	-2.46	5.77	4.29	5.80	10.15
BofAML US High Yield B	-4.85	-1.54	-1.54	7.12	3.42	5.58	9.92
BofAML US High Yield CCC	-10.35	-4.15	-4.15	13.09	3.67	7.20	14.10

## Securitized

Barclays ABS	1.25	1.77	1.77	1.78	1.70	1.69	4.55
Barclays MBS	2.08	0.99	0.99	1.71	2.53	1.97	3.11
Barclays CMBS	1.72	0.78	0.78	2.23	2.13	2.77	6.87

## Municipals

Barclays Municipal	1.69	1.28	1.28	2.30	3.82	3.30	4.85
Barclays Muni 1-10	1.54	1.69	1.69	1.52	2.12	1.95	2.99

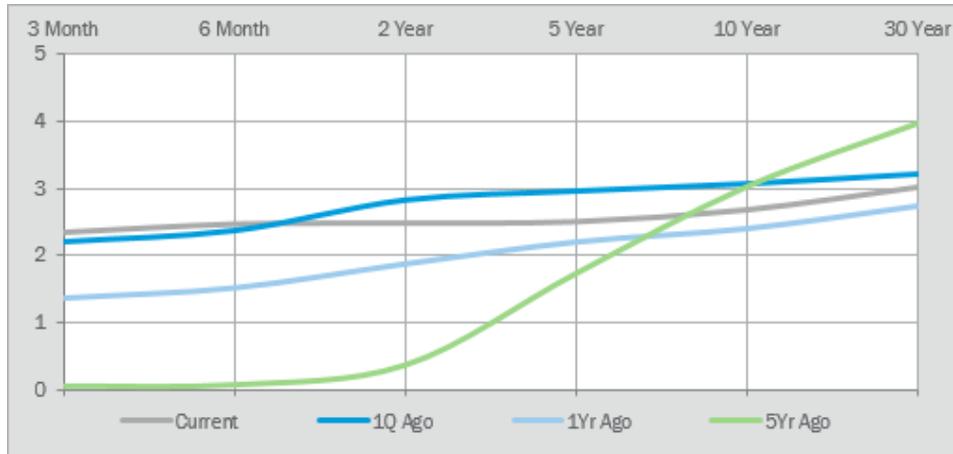
## Global

Citi WGBI	1.75	-0.84	-0.84	2.69	0.77	0.20	1.52
Barclays Gbl Agg Ex USD	0.91	-2.15	-2.15	3.15	-0.01	0.12	1.74
JPM EMBI Plus	-0.66	-5.33	-5.33	3.97	3.97	3.98	7.29

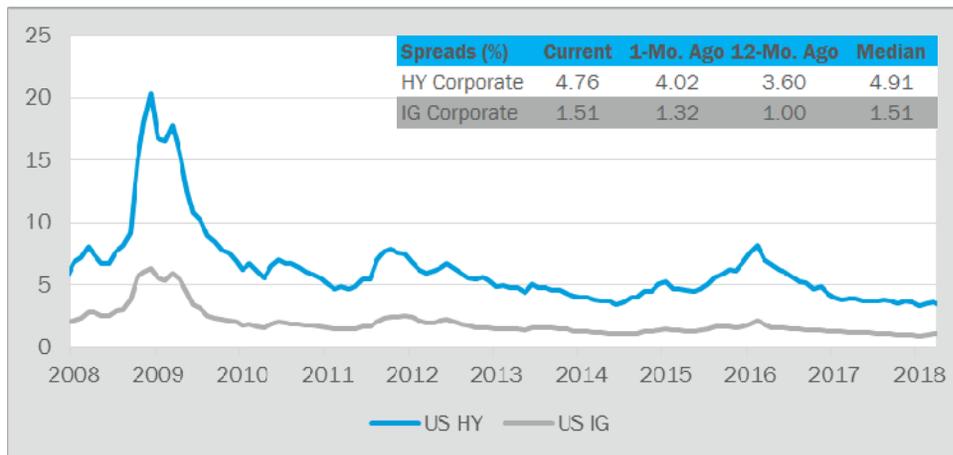
# Market Environment

## Fixed Income

### U.S. Treasury Rates



### Corporate Spreads



### World Bond Yields

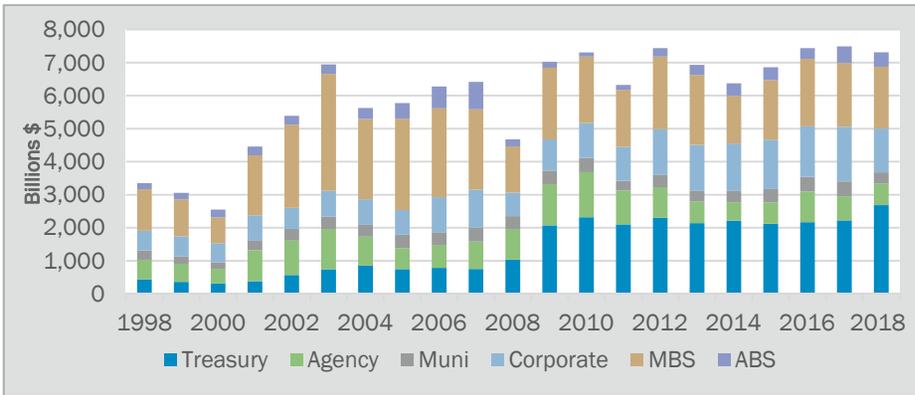
10-Year Sovereign Rates (%)											
Country	US	JAP	CHI*	GER	ITL	FRA	UK	BRA*	MXN*	SPA	CAN
Rates (9/30)	3.06	0.11	3.61	0.47	3.14	0.71	1.57	11.73	7.91	1.50	2.42
Rates (12/31)	2.69	-0.12	3.29	0.24	2.74	0.70	1.27	9.13	8.62	1.41	1.96

\*local currency

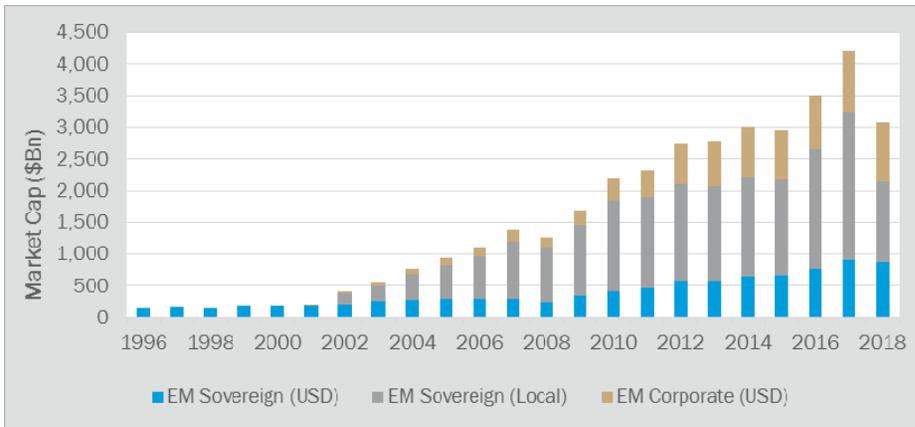
- U.S. core fixed income generated positive returns as risk assets sold off during the fourth quarter. In December alone, the 10 year treasury yield moved from 3.0% to 2.7% as investors worried about a slowing economy and an uncertain political climate
- The high yield sector experienced its worst quarter of the year as lower quality credits experienced decent spread widening. In particular, CCC-rated credits experienced the biggest drawdown
- Emerging market debt had mixed performance in the fourth quarter. Some EM currencies appreciated relative to the dollar

# Market Environment

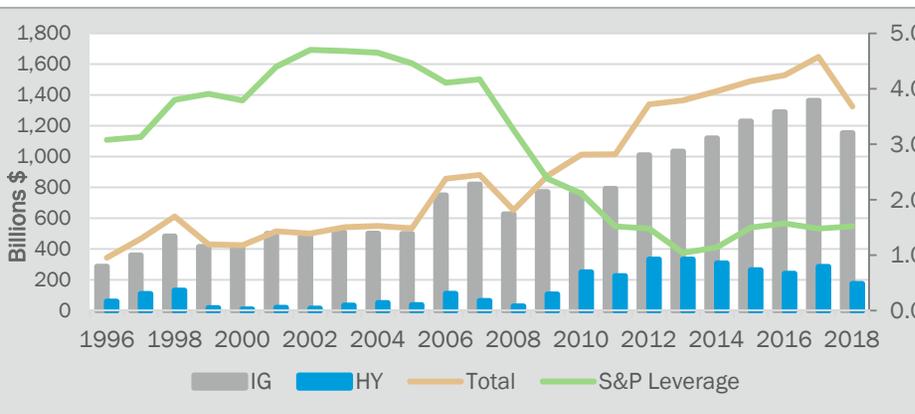
U.S. Bond Issuance



EM Debt Size



Corporate Issuance & Leverage



# Asset Class Report Updates

- U.S. treasury issuance significantly increased after the financial crisis. Since the Fed began tapering, treasury issuance plateaued while corporate and MBS issuance continued to grow
- The EM debt market has grown significantly since 1996. While investors have worried about EM liabilities denominated in U.S. dollars, debt denominated in local currency has exponentially grown since 2004
- Corporate leverage significantly decreased after 2008. Leverage in the U.S. and EM has since grown while leverage in Europe and Japan has moderated

# Portfolio Characteristics

## Fixed Income

### Sector Distribution

	Current Portfolio	Barclays Global Aggregate	Barclays Aggregate
US Treasury	20.5%	15.6%	38.0%
Agency	0.5%	5.5%	1.5%
Local Authority (non-US)	0.0%	3.0%	0.0%
Municipal (US)	0.3%	0.0%	0.9%
Sovereign (non-US)	2.9%	3.5%	0.0%
IG Corporate	15.8%	19.1%	29.1%
HY Corporate	7.7%	0.0%	0.0%
Bank Loans	3.2%	0.0%	0.0%
MBS	33.0%	11.5%	28.1%
ABS	2.6%	0.3%	0.5%
CMBS	2.6%	0.8%	1.9%
CLO	3.0%	0.0%	0.0%
Other & Cash	7.9%	40.8%	0.0%

### Regional Distribution - Country Allocation

	Current Portfolio	Barclays Global Aggregate	Barclays Aggregate
US	76.2%	38.9%	93.4%
Non-US Developed	10.2%	54.4%	4.1%
Non-US Emerging	13.7%	6.7%	2.5%

### Currency Allocation

	Current Portfolio	Barclays Global Aggregate	Barclays Aggregate
US	88.3%	45.0%	100.0%
Non-US Developed	-0.9%	51.7%	0.0%
Non-US Emerging	12.6%	3.3%	0.0%

### Portfolio Characteristics

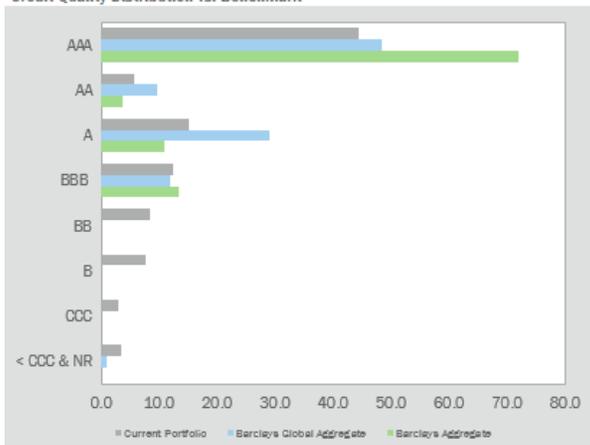
	Current Portfolio	Barclays Global Aggregate	Barclays Aggregate
Effective Duration	3.78	6.90	6.03
Yield to Maturity (%)	5.22	2.16	3.46
Coupon Rate (%)	4.01	2.68	3.15
Average Credit Quality (Barclays)	A	AA	AA

### Portfolio Checklist

	Current Portfolio	Barclays Global Aggregate	Barclays Aggregate
Yield <sup>1</sup>	✓	✓	✓
Duration <sup>2</sup>	✓	✓	✓
Credit Quality <sup>3</sup>	✓	✓	✓
Sector Diversification <sup>4</sup>	✓	✓	✗
Region Diversification <sup>5</sup>	✗	✓	✗

1. The yield-to-maturity ("YTM") should be 80% of the YTM of the benchmark or greater
2. Duration should not exceed the benchmark
3. Average credit quality, using Barclays methodology, should be BBB or higher
4. No sector should exceed 50% of the total allocation and at least half of the sectors should have allocations greater than 2.5%
5. No region (see "Regional Distribution") should exceed 75% of the of the total allocation

### Credit Quality Distribution vs. Benchmark



The Current Portfolio has allocations to the following investment manager types: 45% Core Plus, 30% Global, 10% Credit, and 15% Mortgage-Backed  
Source of Benchmark Information: Barclays

- Depending on a client's equity exposure, duration and credit allocations can fluctuate within the fixed income segment
- Fixed income portfolios should target a portfolio duration less than that of the benchmark (Barclays Global Aggregate) in order to reduce interest rate risk
- Investors can lower portfolio duration (while maintaining yield) by allocating to credit and diversifying globally
- To ensure the fixed income allocation reduces overall portfolio risk and provides diversification, Canterbury seeks to maintain a portfolio that, on average, is investment grade or better
- Canterbury attempts to optimize the risk return relationship of fixed income portfolios by spreading risk across several factors (interest rate, credit, prepayment, liquidity, currency, political, counterparty, etc.)