



Canterbury Consulting

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## Quarterly Asset Class Report

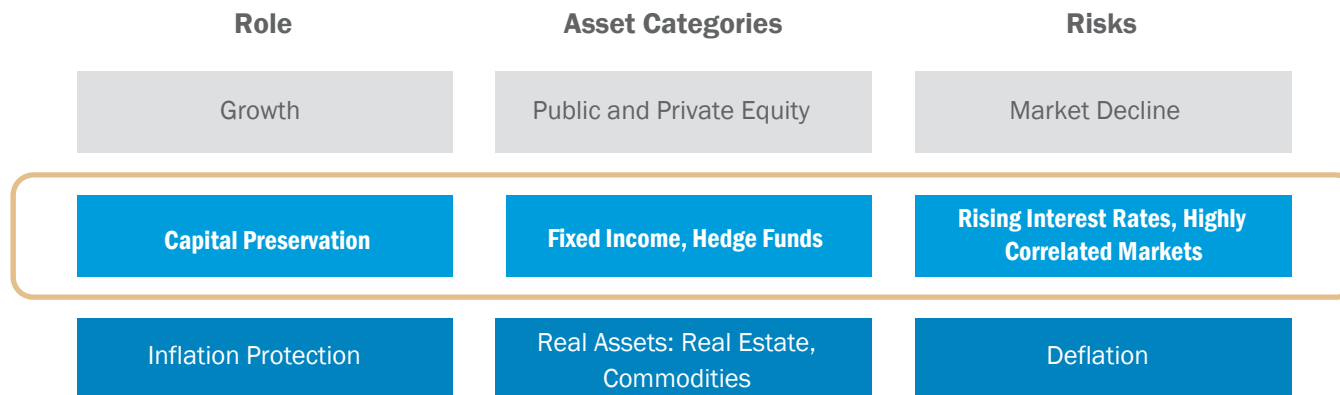
### Taxable Fixed Income

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March 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 after-tax wealth and mitigate volatility
- (ii) Maintain comparable exposure to the broad municipal market
- (iii) Exhibit returns uncorrelated to equity markets



- Canterbury global fixed income portfolios are expected to deliver consistent after-tax and net of fees excess returns and moderate tracking error versus the Barclays Municipal Bond Index
- Canterbury’s fixed income portfolios will exhibit benchmark-like after-tax yields and credit quality. However, they will do so with more portfolio diversification and lower duration

# Index Returns

## Fixed Income

	QTD	YTD	1 Year	3 Years	5 Years	7 Years	10 Years
Barclays Global Aggregate	1.36	1.36	6.97	3.14	1.49	1.99	2.57
Barclays US Agg Bond	-1.46	-1.46	1.20	1.20	1.83	2.92	3.63

### U.S. Treasurys

BofAML 3M US Treasury Note	0.35	0.35	1.07	0.52	0.33	0.27	0.36
Barclays Short Treasury	0.32	0.32	1.02	0.58	0.39	0.33	0.47
Barclays Intermediate Treasury	-0.75	-0.75	-0.16	0.45	0.73	1.71	2.22
Barclays Long Term US Treasury	-3.29	-3.29	3.51	0.35	3.29	6.56	5.78
Barclays U.S. Treasury TIPS 0-5Y	0.21	0.21	0.39	1.16	0.14	0.81	1.54
Barclays US Treasury US TIPS	-0.79	-0.79	0.92	1.30	0.05	2.50	2.93

### U.S. Corporate Credit

Barclays US Corp IG	-2.32	-2.32	2.70	2.30	3.02	4.54	5.42
S&P/LSTA Leveraged Loan	1.45	1.45	4.43	4.20	3.90	4.31	5.63
BofAML US HY Master II	-0.91	-0.91	3.69	5.18	5.01	6.22	8.12
BofAML US HY BB-B Constrained	-1.11	-1.11	3.43	4.74	4.85	6.09	7.44
BofAML US Corporate AAA	-2.85	-2.85	3.56	2.03	2.73	3.66	3.54
BofAML US Corporate AA	-1.88	-1.88	1.84	1.81	2.51	3.67	4.13
BofAML US Corporate A	-2.37	-2.37	2.14	2.01	2.76	4.24	4.69
BofAML US Corps BBB	-2.08	-2.08	3.30	2.80	3.40	5.09	6.50
BofAML US High Yield BB	-1.65	-1.65	3.31	4.77	5.12	6.31	8.08
BofAML US High Yield B	-0.46	-0.46	3.50	4.75	4.56	5.86	6.80
BofAML US High Yield CCC	0.36	0.36	5.53	8.14	6.09	6.90	9.93

### Securitized

Barclays ABS	-0.39	-0.39	0.62	1.18	1.20	2.01	3.12
Barclays MBS	-1.19	-1.19	0.77	1.12	1.80	2.44	3.46
Barclays CMBS	-1.32	-1.32	1.12	1.32	1.71	3.17	4.81

### Municipals

Barclays Municipal	-1.11	-1.11	2.66	2.25	2.73	4.38	4.40
Barclays Muni 1-10	-0.56	-0.56	0.92	1.24	1.56	2.49	3.07

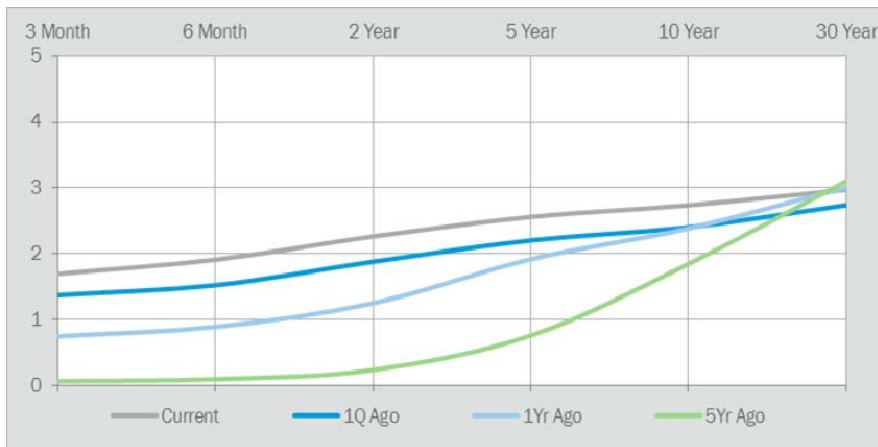
### Global

Citi WGBI	2.50	2.50	8.49	3.45	1.18	1.47	1.97
Barclays Gbl Agg Ex USD	3.62	3.62	11.75	4.63	1.23	1.30	1.85
JPM EMBI Plus	-2.04	-2.04	2.23	5.14	3.57	5.70	6.52

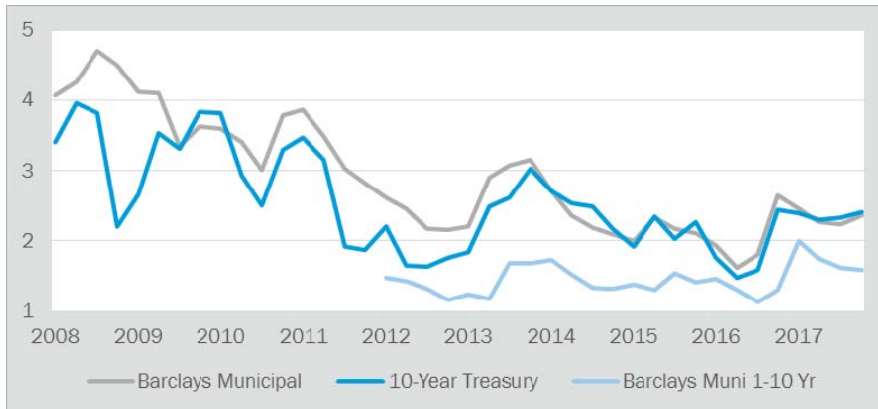
# Market Environment

## Fixed Income

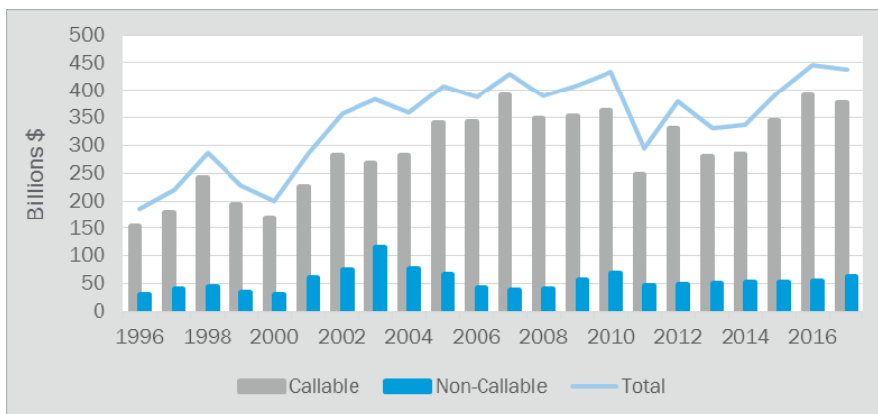
U.S. Treasury Rates



Yields



U.S. Municipal Issuance



- Core fixed income was neutral to slightly negative over the quarter as interest rates slightly increased and credit spreads stayed range-bound. The FOMC hiked interest rates an additional 25 basis points in December, however, this move was expected by the market
- High yield and EM debt generated positive returns from income, however the lack of volatility resulted in little price movement.
- Latin American bonds (i.e. Brazil) finished the year strong as investors became more comfortable with higher quality emerging markets
- Municipal bond supply fell over the quarter as issuers front-loaded new debt in 4Q17. However, higher dealer inventories kept muni/treasury ratios range-bound

# Market Environment

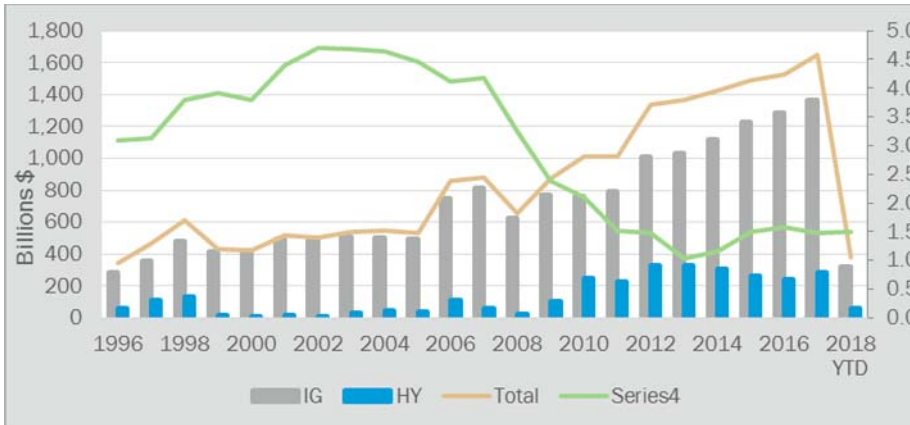
U.S. Bond Issuance



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
- Non-U.S. interest rates remained range-bound over the quarter. European HY debt rates went below those of treasuries as foreign investors continued their search for yield

# Portfolio Characteristics

## Fixed Income

### Sector Distribution

	Current Portfolio	Barclays Municipal Bond Index	Barclays 1-10 YR Muni Bond
US Treasury	4.2%	0.0%	0.0%
Agency	0.9%	0.0%	0.0%
Local Authority (non-US)	0.4%	0.0%	0.0%
Municipal (US)	49.5%	100.0%	100.0%
Sovereign (non-US)	17.8%	0.0%	0.0%
IG Corporate	2.6%	0.0%	0.0%
HY Corporate	7.4%	0.0%	0.0%
Bank Loans	2.3%	0.0%	0.0%
MBS	7.7%	0.0%	0.0%
ABS	0.4%	0.0%	0.0%
CMBS	0.7%	0.0%	0.0%
CLO	0.5%	0.0%	0.0%
Other & Cash	5.8%	0.0%	0.0%

### Regional Distribution - Country Allocation

	Current Portfolio	Barclays Municipal Bond Index	Barclays 1-10 YR Muni Bond
US	73.8%	100.0%	100.0%
Non-US Developed	14.9%	0.0%	0.0%
Non-US Emerging	11.3%	0.0%	0.0%

### Currency Allocation

	Current Portfolio	Barclays Municipal Bond Index	Barclays 1-10 YR Muni Bond
US	87.7%	100.0%	100.0%
Non-US Developed	-1.8%	0.0%	0.0%
Non-US Emerging	14.1%	0.0%	0.0%

### Portfolio Characteristics

	Current Portfolio	Barclays Municipal Bond Index	Barclays 1-10 YR Muni Bond
Effective Duration	2.49	5.13	4.11
Yield to Maturity (%)	4.41	3.09	2.36
Coupon Rate (%)	4.83	4.61	4.80
Average Credit Quality (Barclays)	A	AA	AA

### Portfolio Checklist

	Current Portfolio	Barclays Municipal Bond Index	Barclays 1-10 YR Muni Bond
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

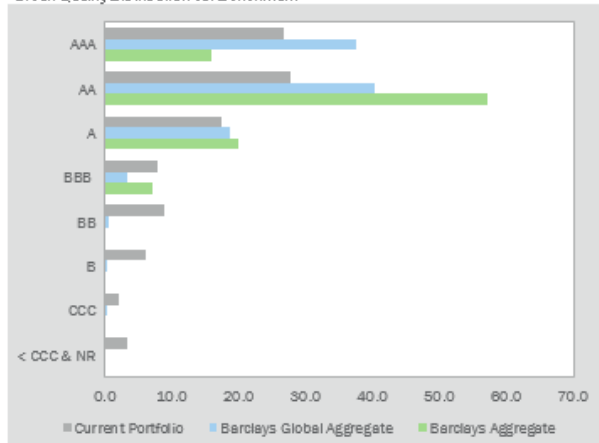
2. Duration should not exceed the benchmark

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 Baseline Portfolio has allocations to the following investment manager types: 50% Municipals, 30% Global, 10% Credit, and 10% 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 duration less than that of the benchmark (Barclays Municipal Index) in order to reduce interest rate risk
- Investors can lower portfolio duration (while maintaining yield) by allocating to credit and diversifying globally
- Inefficiencies in the municipal market allow us to target similar credit quality as the benchmark with much less duration risk
- Canterbury attempts to maximize the risk return relationship of fixed income portfolios by spreading risk across several factors (interest rate, credit, prepayment, liquidity, currency, political, counterparty, etc.)