



Canterbury Consulting

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## Quarterly Asset Class Report

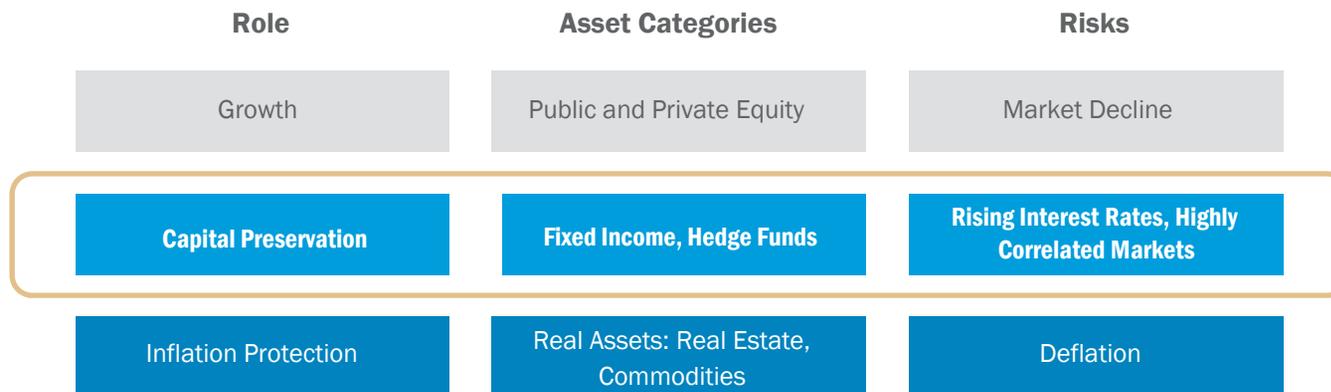
### Taxable Fixed Income

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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 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	1.20	-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

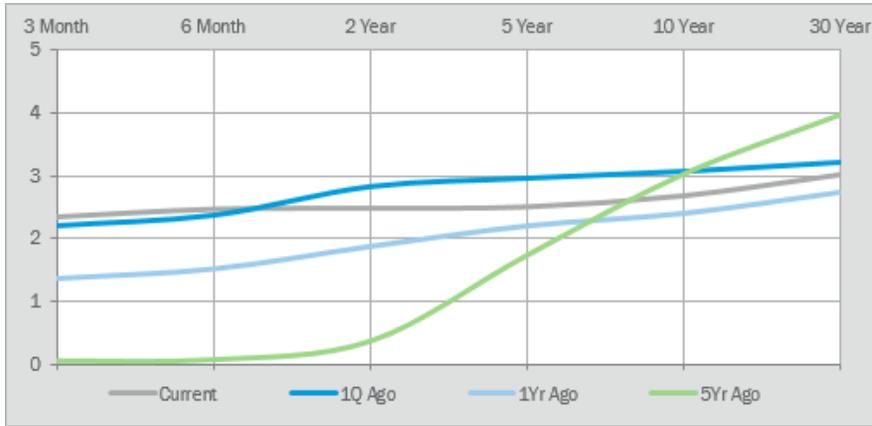
## Global

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

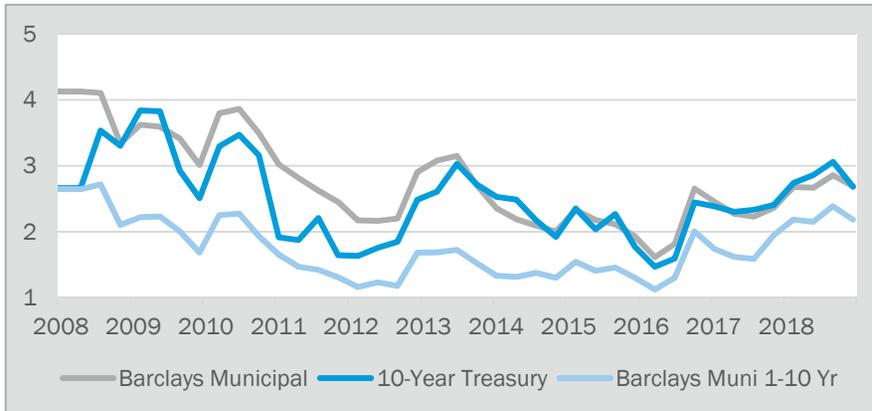
# Market Environment

## Fixed Income

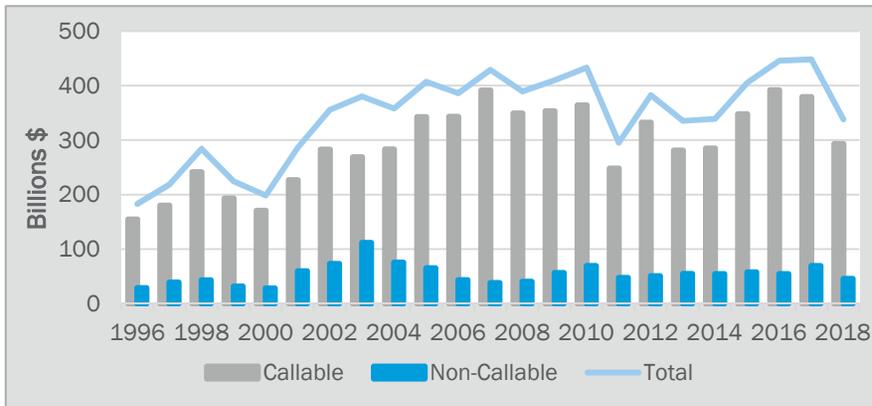
U.S. Treasury Rates



Yields



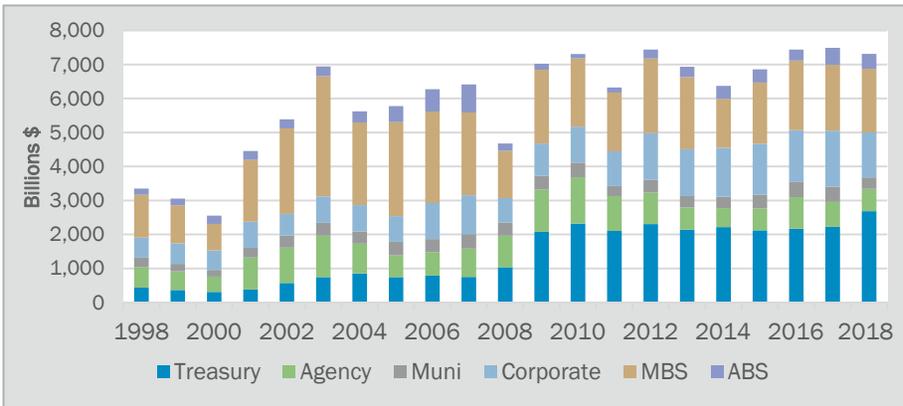
U.S. Municipal Issuance



- 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
- Municipal bond issuance over the course of 2018 was subdued relative to 2017. Muni bond returns were positive on the year as demand from taxable investors remained strong

# Market Environment

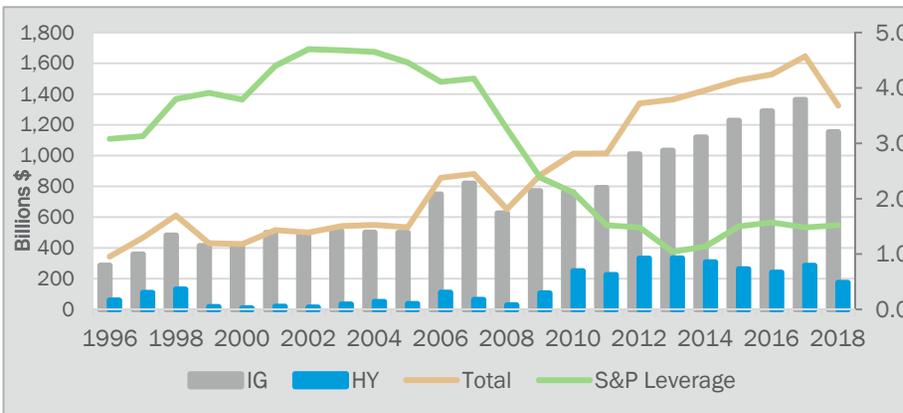
U.S. Bond Issuance



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 Municipal Bond Index	Barclays 1-10 YR Muni Bond
US Treasury	6.5%	0.0%	0.0%
Agency	0.6%	0.0%	0.0%
Local Authority (non-US)	0.0%	0.0%	0.0%
Municipal (US)	47.8%	100.0%	100.0%
Sovereign (non-US)	7.8%	0.0%	0.0%
IG Corporate	3.5%	0.0%	0.0%
HY Corporate	6.7%	0.0%	0.0%
Bank Loans	3.1%	0.0%	0.0%
MBS	7.5%	0.0%	0.0%
ABS	0.4%	0.0%	0.0%
CMBS	0.8%	0.0%	0.0%
CLD	0.6%	0.0%	0.0%
Other & Cash	14.6%	0.0%	0.0%

### Regional Distribution

	Current Portfolio	Barclays Municipal Bond Index	Barclays 1-10 YR Muni Bond
US	76.5%	100.0%	100.0%
Non-US Developed	13.9%	0.0%	0.0%
Non-US Emerging	9.6%	0.0%	0.0%

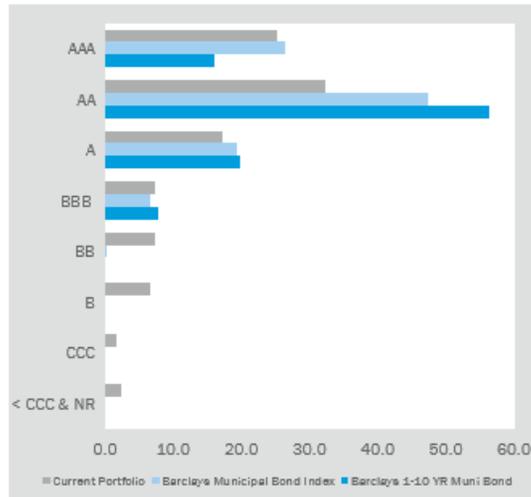
### Currency Distribution

	Current Portfolio	Barclays Municipal Bond Index	Barclays 1-10 YR Muni Bond
US	89.0%	100.0%	100.0%
Non-US Developed	-0.9%	0.0%	0.0%
Non-US Emerging	11.8%	0.0%	0.0%

### Portfolio Characteristics

	Current Portfolio	Barclays Municipal Bond Index	Barclays 1-10 YR Muni Bond
Effective Duration	2.68	5.02	4.07
Yield to Maturity (%)	4.93	3.30	2.45
Coupon Rate (%)	4.36	4.60	4.75

### Credit Quality Distribution vs. Benchmark



### 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

- 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 optimize the risk return relationship of fixed income portfolios by spreading risk across several factors (interest rate, credit, prepayment, liquidity, currency, political, counterparty, etc.)

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