NORTHERN TRUST
ASSET MANAGEMENT

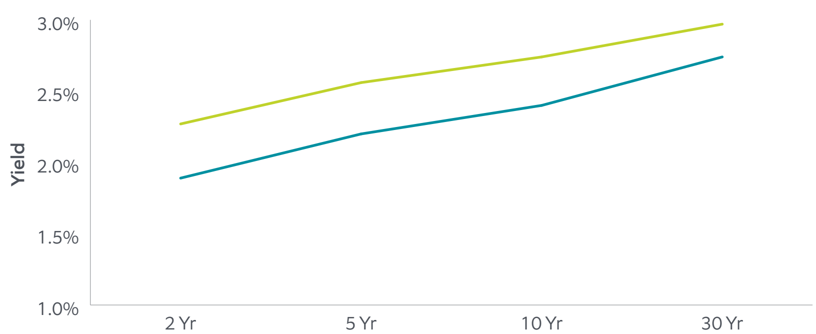
FIXED INCOME UPDATE – FIRST QUARTER 2018

KEY POINTS

- Treasury yields rose and volatility returned to fixed income markets after a calm 2017.
- Inflation remained benign despite solid economic growth and declining unemployment globally.
- Corporate credit spreads widened. While company fundamentals improved and new issuance fell, investors focused on trade tariffs and tax reform.

IN THIS ISSUE

YIELD CURVE CHANGES — FIRST QUARTER CHANGE IN TREASURY YIELDS



	2 Yr	5 Yr	10 Yr	30 Yr
12/31/2017	1.89%	2.20%	2.40%	2.74%
3/31/2018	2.27%	2.56%	2.74%	2.97%
Change	0.38%	0.36%	0.34%	0.23%

SOURCE: U.S. Department of the Treasury

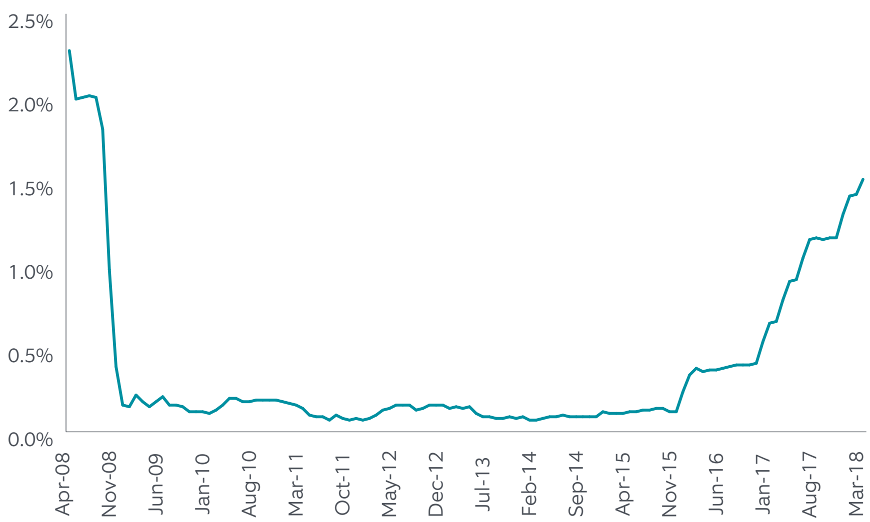
CENTRAL BANK/MACRO

- The Federal Reserve raised its benchmark fed funds rate 25 basis points in March. This was the fifth increase since December 2016.
- The core PCE (Personal Consumption Expenditures), the Fed's preferred measure of inflation, remained below its 2% target. Inflation in Europe and Japan remained even lower.
- U.S. employment growth remained solid, creating an average of 200,000 jobs a month in the first quarter. The unemployment rate remained near a17-year low.
- The U.S. continued to have some of the highest interest rates in the developed world.

Long-Term Trends:

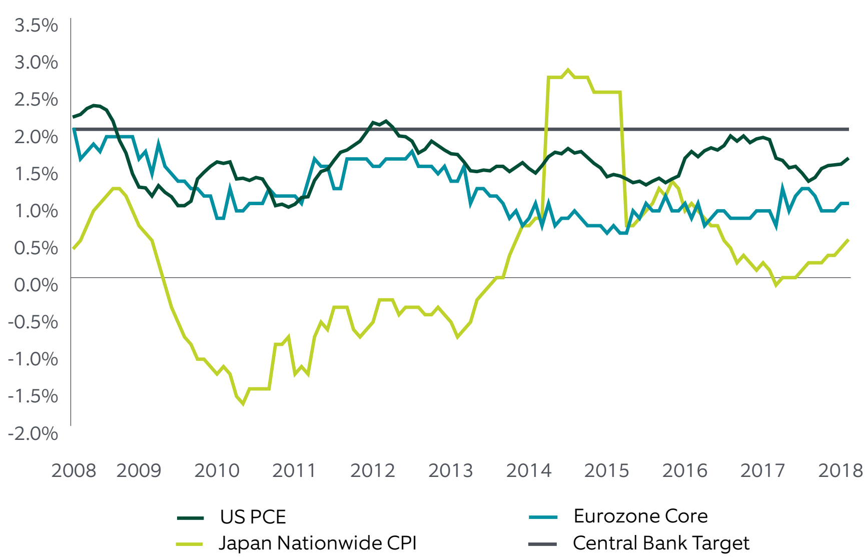
- Interest rates are likely to move only moderately higher given low inflation.
- Accommodative foreign central bank policy and low inflation will constrain the Fed from aggressively increasing rates.
- We forecast a 10-year Treasury of 3% in five years.

FEDERAL FUNDS EFFECTIVE RATE



SOURCE: Bloomberg Barclays

GLOBAL INFLATION



AS OF 2/28/18
SOURCE: Bloomberg Barclays

MUNICIPAL BOND

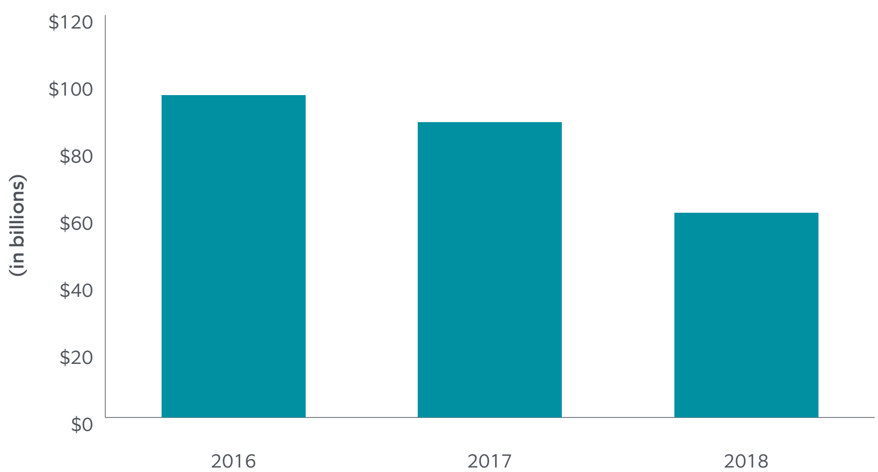
Current Positioning:

- Portfolio duration is largely neutral to benchmarks.
- We believe new issuance throughout 2018 will be insufficient to meet demand, providing a strong technical assist to the market.
- We favor select general obligation bonds and essential services revenue bonds.

Municipal Bond Highlights: :

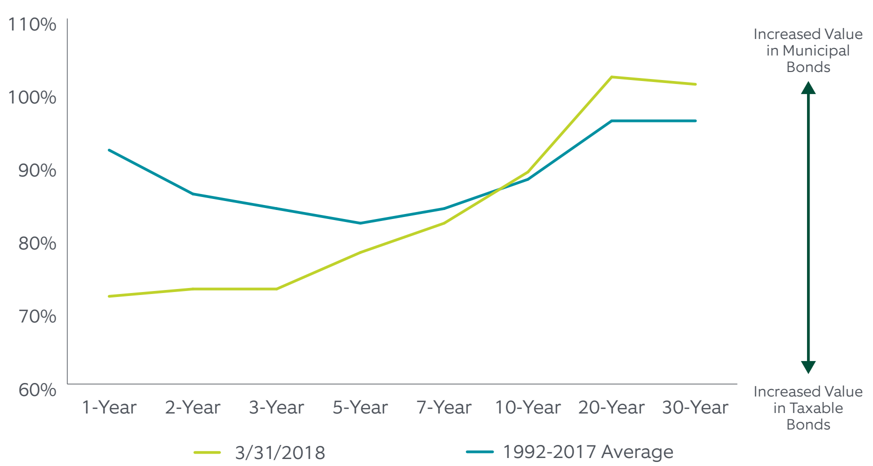
- Supply -30% versus 2017, as tax reform pulled issuance forward into 4Q 2017.
- Muni/Treasury ratios from 1- to 5-year maturities look expensive historically.
- The municipal yield curve steepened even as the Treasury curve flattened.
- Credit spreads from AAA to BBB are tight. There was little difference in 1Q 2018 returns across quality buckets.

MUNICIPAL ISSUANCE – FIRST QUARTER



SOURCE: Bond Buyer

RATIO: AAA MUNI YIELD TO TREASURY YIELD



SOURCE: Northern Trust Fixed Income

CORE/CORE PLUS

Current Positioning:

- Portfolios remain overweight corporate debt. Corporate fundamentals have improved with better sales, earnings and cash flows. Despite improving fundamentals and less issuance year over year, credit spreads widened on increased political uncertainty and tax repatriation.
- As the global search for yield continues, the U.S. has some of the highest interest rates in the developed world. Current positioning reflects range-bound interest rates and inflation. Duration is short to neutral relative to the Bloomberg Barclays U.S. Aggregate Index.

CORPORATE OPTION-ADJUSTED SPREAD

SOURCE: Barclays Live

Core / Core Plus Highlights:

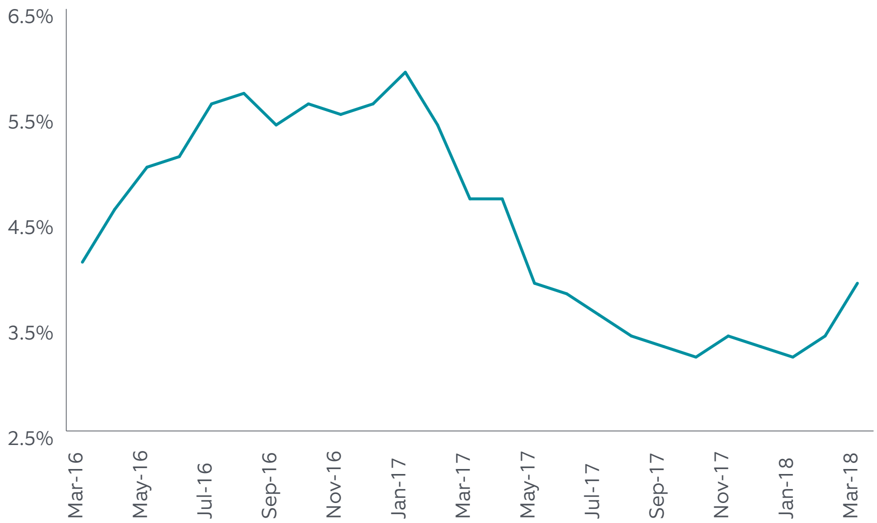
- Corporate sales, earnings and cash flows have improved and are supportive of high valuations.
- Tax reform in the U.S. will be very positive for investment-grade companies and lead to accelerated growth in earnings and cash flows.
- During the quarter we removed our underweight to the 1- to 7-year portion of the interest rate curve after interest rates moved higher.
- The Treasury 2- to 10-year curve ended the quarter at less than 50 basis points, the narrowest since 2007.

HIGH-YIELD BOND

Current Positioning:

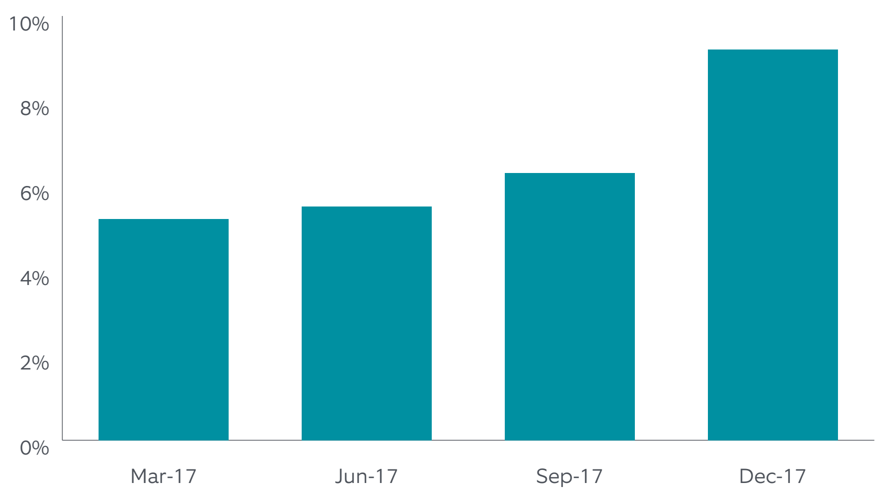
- Portfolios remain overweight lower quality corporate debt as company sales, earnings and cash flows are improving.
- Being overweight lower quality issuers with higher yields contributed to performance.

MOODY'S DEFAULT RATE



SOURCE: Moody's

REVENUE GROWTH FOR HIGH-YIELD COMPANIES (2017)



SOURCE: Bloomberg Barclays Indices, Capital IQ

High-Yield Bond Highlights: :

- Revenues for high-yield companies have accelerated, driving higher earnings and cash flows.
- Defaults have continued to fall from the elevated levels in 2016 when many commodity-related bankruptcies occurred.
- Tax reform will be very positive for high-yield companies and will support tight credit spreads.

ULTRA-SHORT/CASH

Current Positioning:

- Our ultra-short products are modestly short duration and have increased exposure to floating rate notes to protect against potential increases in short-term rates.
- Credit spreads widened on corporate debt maturing from 1 to 3 years despite improving company fundamentals. The U.S. Treasury has been increasing issuance and tax reform led many to liquidate holdings.

T-BILL ISSUANCE – ROLLING QUARTER

SOURCE: SIFMA (Securities Industry and Financial Markets Association)

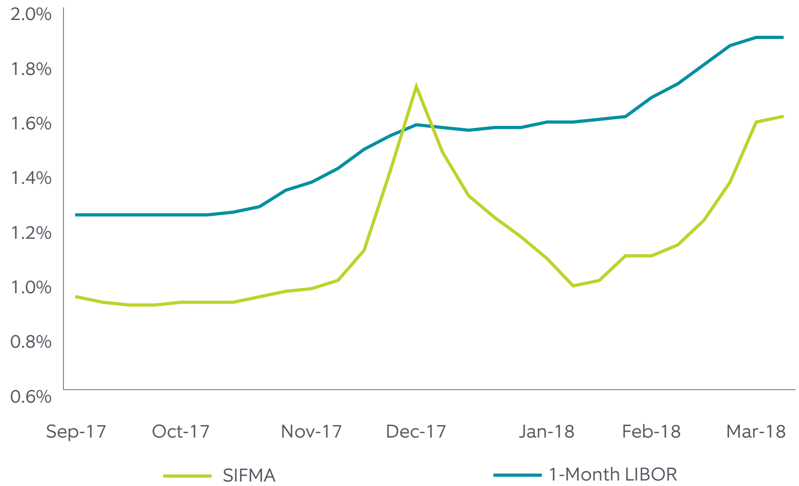
1-3 YEAR CORPORATE OPTION-ADJUSTED SPREAD

SOURCE: Barclays Live

Ultra-Short/Cash Highlights:

- Yields on 1-year Treasury bills moved 35 basis points higher in the first quarter as investors bet the Fed would increase interest rates at its March meeting.
- Assets in prime funds are slowly increasing as investors are attracted by higher yields, stable net asset values and adequate liquidity.
- SIFMA and LIBOR continued to move higher, reflective of a more active Fed and other technical factors in the municipal and credit markets.

SIFMA VERSUS 1-MONTH LIBOR



SOURCE: Bloomberg Barclays

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