NORTHERN TRUST

ASSET MANAGEMENT

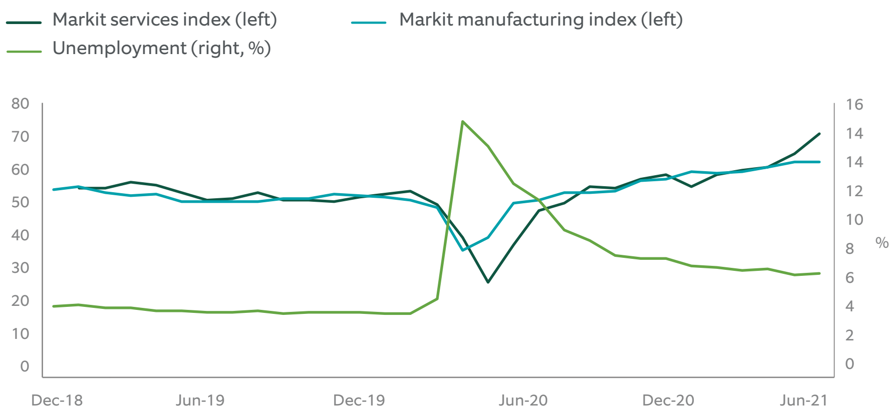
FIXED INCOME UPDATE SECOND QUARTER 2021

KEY POINTS

- Treasury yields fell (bond prices increased) on lower inflation expectations, supporting returns across fixed income.
- The economic recovery due to COVID-19 vaccination progress, government spending and accommodative central banks supports a positive bond-market outlook.

EXHIBIT 1: A U.S. RECOVERY UNDERWAY

Lower unemployment along with increasing manufacturing and services activity show the U.S. economy is recovering from the pandemic.



Source: Bloomberg, as of June 30, 2021

%

IN THIS ISSUE

Long-Term Views

- Inflation, central bank policy and the yield curve are regaining their prominence in investors' minds as the pandemic fades in terms of economic and market impact.
- Recent high inflation should be temporary because it is based on comparisons to the depressed pandemic economy last year and supply bottlenecks that we expect will soften. We believe in our "Stuckflation" view that persistently low inflation will continue despite ongoing government aid and monetary accommodation by the Federal Reserve.

ECONOMY

- The labor market improved during the quarter, as initial and continuing jobless claims declined although at a slower pace than economists had hoped. Average hourly earnings for workers moved slightly higher. However, this appears to be a short-term development related to the types of jobs added and lost from the workforce.
- The core Personal Consumption Expenditures Index for May increased 3.4% year over year, its largest jump in about 30 years. This is largely due to some abnormally low prices last year because of economic shutdowns and some abnormally high prices this year with the strong recovery. For example, an increase in used-car prices, a significant contributor to the inflation increase, is not likely to be sustainable.

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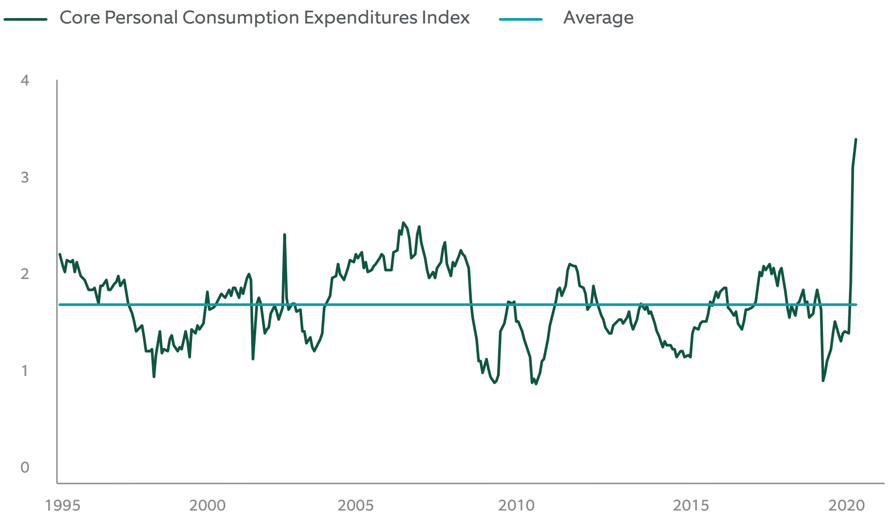
EXHIBIT 2: THE SUDDEN JUMP IN INFLATION

The year-over-year increase in core inflation hit its highest level since the 1980s. We don't believe the high level, partially because of low comparisons with last year's pandemic economy, is sustainable.

U.S. Core Personal Consumption Expenditures Year-Over-Year Change (%)



Source: Northern Trust Asset Management, Bloomberg, as of June 30, 2021. The core Personal Consumption Expenditures Index does not include volatile food and energy prices.

FEDERAL RESERVE

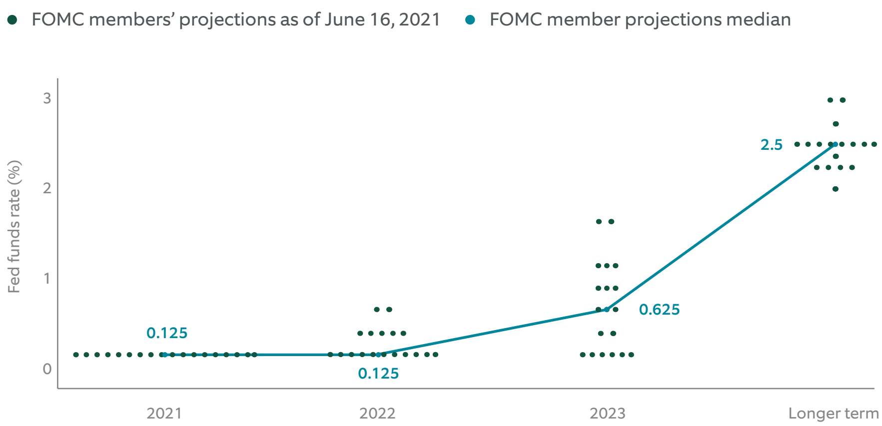
- The Fed remained accommodative throughout the quarter, keeping bond purchases at a constant pace of $120 billion per month to keep interest rates low. Chairman Jerome Powell reiterated that the bank believes inflation will be transitory.
- However, by the end of the quarter, a survey showed that 13 of 18 Fed governors see two Fed funds hikes by the end of 2023. This was an increase from seven of 18 forecasting one hike by the end of 2023.

Fed Chairman Jerome Powell reiterated that the bank believes inflation will be transitory.

EXHIBIT 3: FED SEES POTENTIAL FOR EARLIER TIGHTENING

The dot plot signals where Fed policymakers believe the median Federal funds rate should be at a specific future time. An increasing number of Fed governors see two hikes by the end of 2023.

Federal Reserve Dot Plot



Source: Northern Trust Asset Management, Bloomberg, as of June 30, 2021. FOMC is the Federal Open Market Committee, which sets monetary policy for the Federal Reserve.

GLOBAL CENTRAL BANKS

- The Bank of Canada became the first major central bank to announce that it would begin tapering asset purchases. In contrast, the European Central Bank, Bank of England and Bank of Australia made no material changes to their overall asset purchase programs.
- Global yields reversed their rise from the previous quarter as inflation expectations proved overblown and some countries outside the U.S. experienced lockdowns during the quarter as COVID-19 persisted.

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EXHIBIT 4: LOW TREASURY YIELDS STILL LEAD

Although U.S. rates remain historically low, they are high relative to most other developed economies.

Global Government Rates (%)

< 0% | 0-1% | 1-2% | > 2%

	1Y	5Y	10Y	30Y
Australia	0.01	0.83	1.53	2.28
Germany	-0.64	-0.59	-0.21	0.29
Japan	-0.119	-0.102	0.052	0.684
U.S.	0.07	0.89	1.47	2.09
U.K.	0.02	0.33	0.72	1.23

Source: Northern Trust Asset Management, Bloomberg, as of June 30, 2021

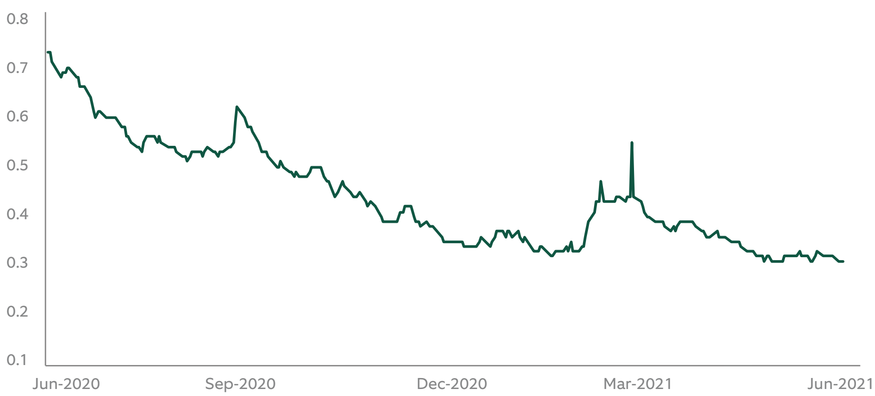
ULTRA-SHORT/CASH

- Short-end credit spreads, as measured by the Bloomberg Barclays 1-3 Year option-adjusted spreads, tightened from 40 basis points to a record-tight 31 basis points as the economy continued to improve.
- The downward pressure on short-end rates intensified during the quarter due to decreased supply, continued inflows into money market funds, particularly government money market funds, and the looming unresolved debt ceiling issue. However, the Fed provided some relief by increasing their administered rates (reverse repo and interest on excess reserves) by 5 basis points.

EXHIBIT 5: TIGHTENING CREDIT SPREADS

The strength of the U.S. economy continues to tighten option-adjusted spreads.

1-3 Year Option Adjusted Spread (%)



Source: Northern Trust Asset Management, Bloomberg, as of June 30, 2021. The option-adjusted spread (OAS) is the measurement of the spread of a fixed-income security rate over the risk-free rate, which in this case is a Treasury security, adjusted to take into account an embedded option.

Performance

- Contributors: sector allocation
- Detractors: curve positioning

Current Positioning

Portfolios are positioned neutral-to-long duration relative to their benchmark. Their cash benchmark means that purchasing corporate or Treasury bonds makes the portfolios long duration.

TREASURYS AND TREASURY INFLATION-PROTECTED SECURITIES (TIPS)

- The Treasury curve "bull flattened" meaningfully, as long-end yields declined and front-end yields moved higher. This curve flattening can be attributed to a smaller-than-expected infrastructure bill, declining inflation expectations and the prospect of Fed asset purchase tapering. The rates on 10-year and 30-year Treasurys declined 27 and 33 basis points, respectively.
- Breakeven rates across the curve also moved lower over the quarter, suggesting investors likely priced in too much inflation. Most notably, the five-year breakeven declined 10 basis points to 2.50%.

Performance

- Contributor: curve and duration
- Detractor: declining breakeven inflation

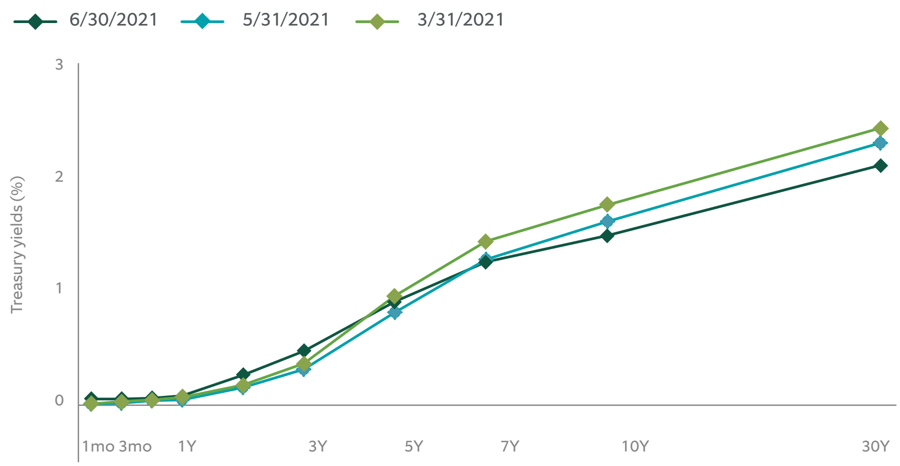
Current Positioning

Portfolios are positioned neutral-to-long duration relative to their benchmarks because we believe the market is incorrectly pricing in inflation and Fed tightening

EXHIBIT 6: FLATTENING AT THE LONG END

Lower inflation expectations have flattened the Treasury yield curve, especially at the long end of the curve.

Treasury Yield Curves March 2021 to June 2021



Source: Northern Trust Asset Management, Bloomberg, as of June 30, 2021

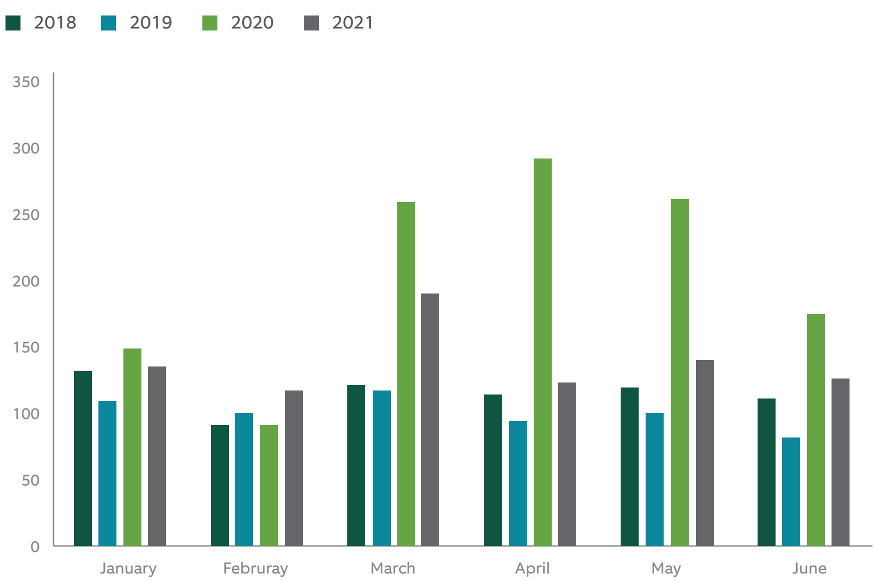
INVESTMENT GRADE BONDS

- Investment grade corporates tightened 9 basis points to end the quarter at a post Global Financial Crisis low of 80 basis points. Lower Treasury yields and reduced Treasury volatility reduced spreads.
- Inflows of $43 billion into investment grade mutual funds supported issuance and helped the asset class return 3.55%. BBB-rated bonds performed best, returning 3.71%.

EXHIBIT 7: ACCELERATING BOND ISSUANCE

In aggregate, investment grade corporate issuers continue to issue bonds at a faster pace than in pre-pandemic years

Investment Grade Bond Issuance ($ billions , all years as of June 30)



Source: Northern Trust Asset Management, Barclays

Performance

- Contributors: sector allocation, security selection, curve and duration
- Detractors: None

Current Positioning

Portfolios are positioned neutral-to-long duration relative to their benchmarks, while maintaining an overweight to corporate bonds.

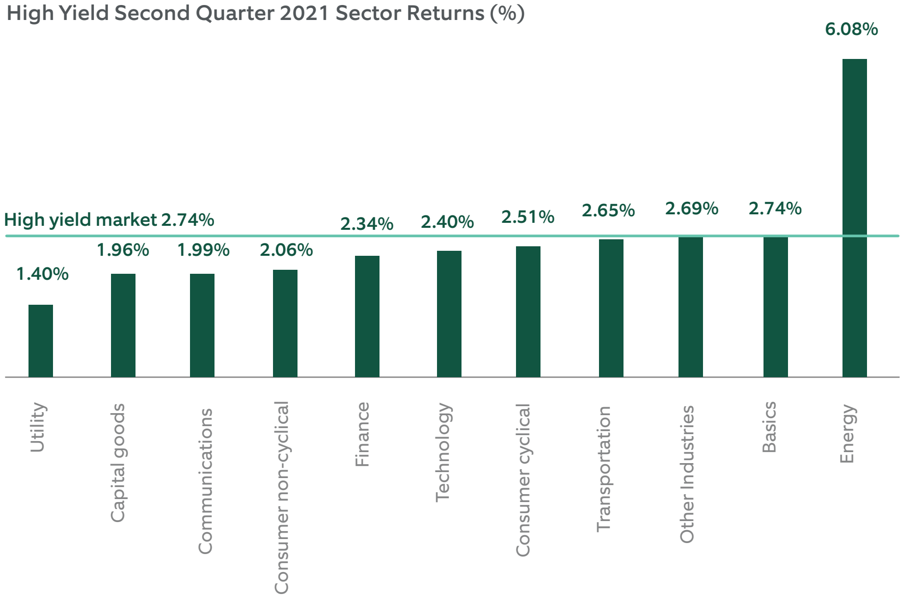
HIGH YIELD BONDS

- High yield spreads hit 268 basis points, their tightest level in 14 years, as the U.S. economy continued to improve. Yield-to-worst closed at an all-time low of 375 basis points. This rally in spreads is largely due to the significant increase in energy prices, low default activity and better earnings expectations.
- Issuance — driven by first time issuers — remained strong with $134 billion in the second quarter, pushing first-half issuance to a record-breaking $282 billion. CCC-rated bonds were again the high yield market's best performers in the quarter , returning 3.49%.

EXHIBIT 8: HIGH ENERGY

Energy companies, which had been battered by COVID-19 restrictions, were the top performers by a wide margin, due to the rapid rise in oil prices.

High Yield Second Quarter 2021 Sector Returns (%)



Source: Northern Trust Asset Management, Bloomberg, as of June 30, 2021

Performance

- Contributors: security selection
- Detractor: duration

Current Positioning

- Portfolios are positioned to manage the impact of market and sector volatility, while focusing on income generation and downside risk protection. We will continue to be positioned in the mid-range of the credit risk spectrum.

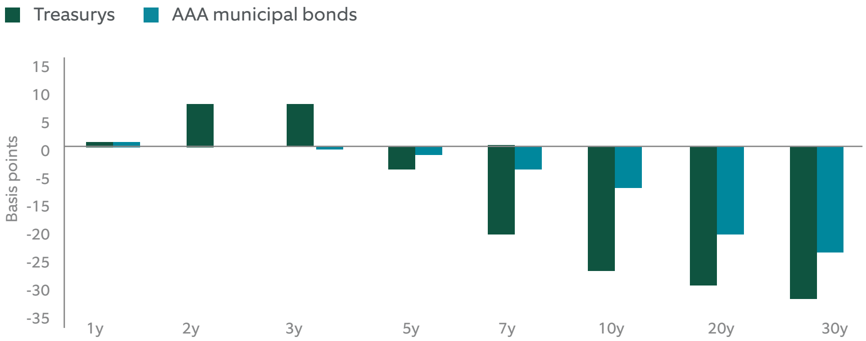
MUNICIPAL BONDS

- Resilient revenues and massive federal stimulus aid to municipal issuers fueled demand for municipal bonds, especially for lower rated credits.
- Investors' search for yield and portfolio rebalancing from robust equity markets also supported demand.

EXHIBIT 9: A SOFTER FALL

Rates of municipal bonds with maturities of five years or more fell much less than those of Treasurys.

Second Quarter 2021 Yield Changes: AAA-Rated Municipal Bonds vs. Treasurys



Source: Northern Trust Asset Management, as of June 30, 2021

Performance

- Contributors: yield curve
- Detractors: higher quality credit bias

Current Positioning

- Interest rate risk should typically be long to start the third quarter, but trending to neutral by quarter-end. We expect technical pressures to ease by the end of the third quarter, creating an opportunity to put cash to work at better levels and spreads.

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