



Fixed Income Monthly Market Update

May 2019

Prepared by the Portfolio Strategies Group

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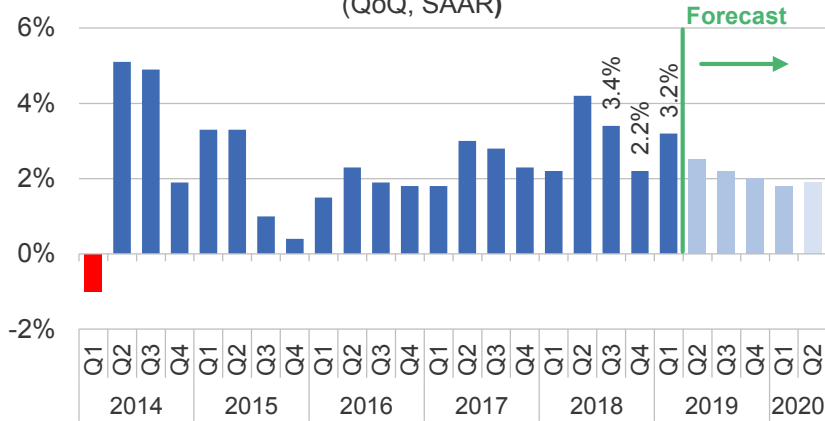
Current Market Themes

- U.S. economic conditions are characterized by:
 - Above-trend GDP growth, with unusual contributing factors in Q1
 - Robust labor market with a low unemployment rate of 3.6%
 - Improving conditions in the housing market as mortgage rates have fallen
 - Potential imbalances, including a growing budget deficit, trade deficit, trade tensions, and challenges over border security funding
- U.S. Treasury yields rose modestly in April and the yield curve steepened. But, yields remain lower on the year, and sharply lower from the cyclical peak levels from early November 2019.
- U.S. GDP grew at an annual rate of 3.2% in the first quarter of 2019, much stronger than expected. But, the strength was fueled by outsized growth in inventories, net exports, and state and local government expenditures. Consumer spending posted its 2nd lowest contribution in four years.
- The Federal Reserve reiterated its patient stance on monetary policy and held the fed funds target range at 2¼ to 2½%. Fed Chair Powell reaffirmed that the current “policy stance is appropriate,” remained optimistic on the economic outlook, and believed the underlying factors of keeping inflation low to be “transitory”.
- U.S equities continued their gains, with the S&P 500 and NASDAQ indices posting new record highs. Over the month, the S&P 500 advanced 4%, and is up 180% for the year, the strongest start to a year in decades. The Dow climbed 2.7% and the NASDAQ soared 4.8% in April.
- Global trade prospects remain in limbo, particularly as a trade and tariff war between the U.S. and China seemed imminent.

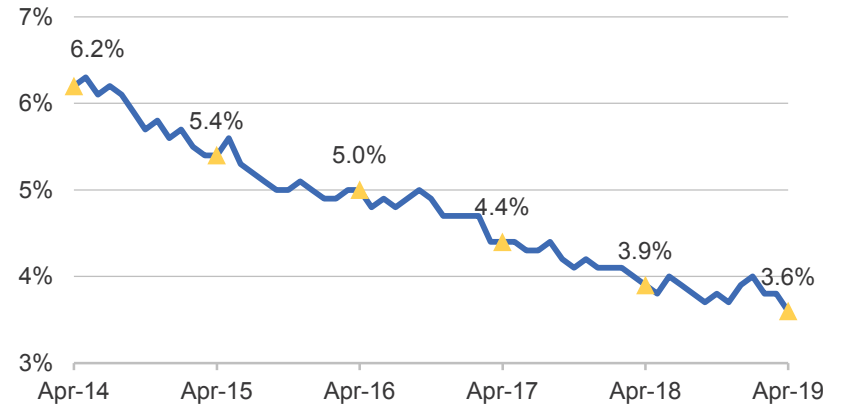


Current Economic Conditions

U.S. Real GDP Forecast To Slow
(QoQ, SAAR)



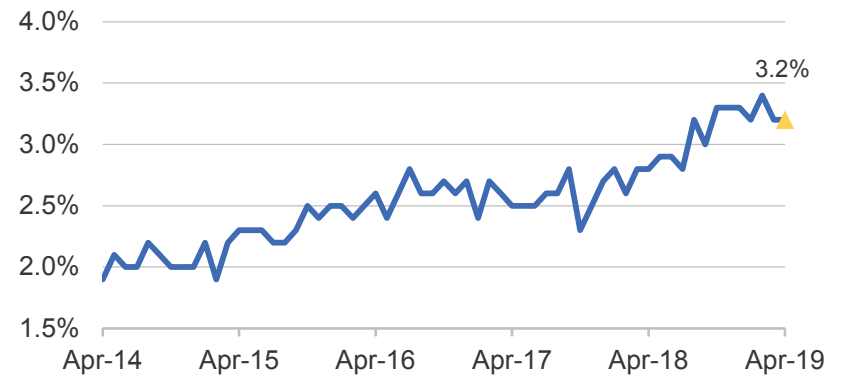
Unemployment Rate Near 50-Year Lows



Consumer Confidence Remains High



Wage Growth Has Improved

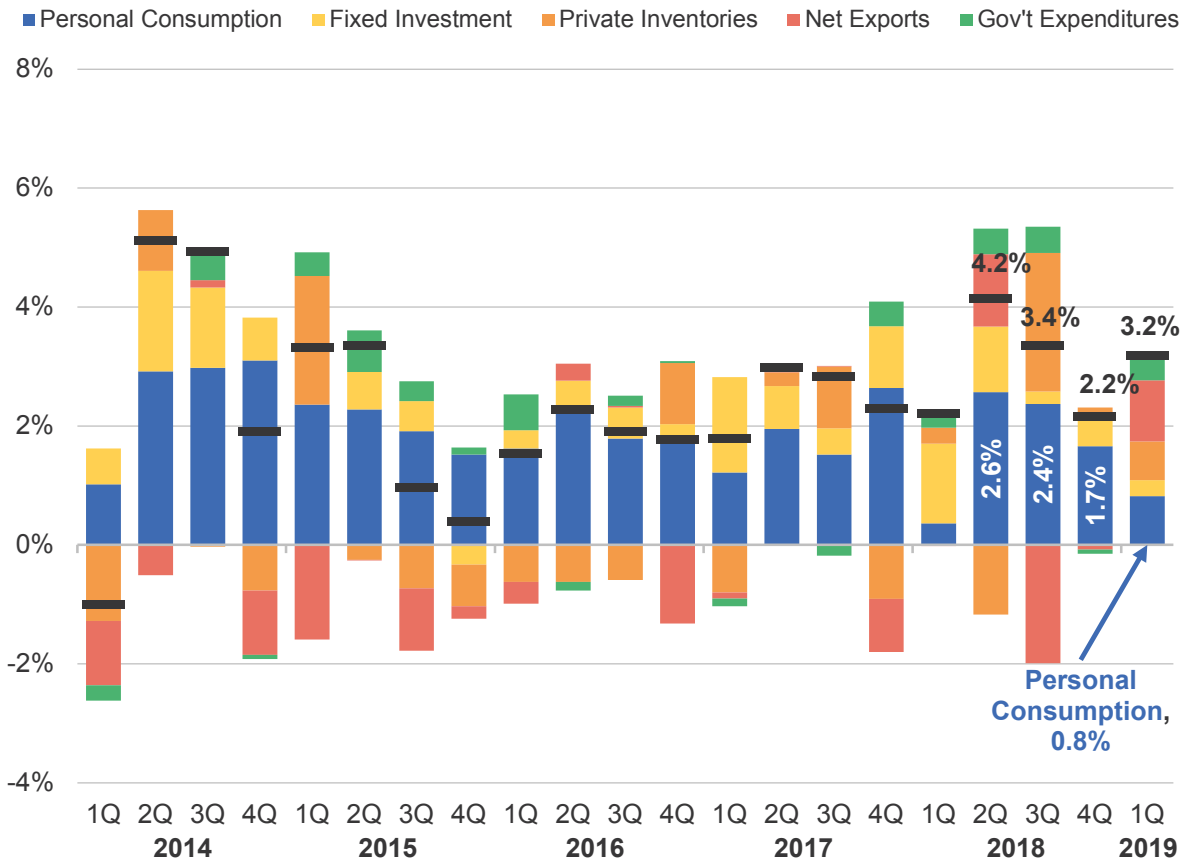


Source: Bloomberg, latest data available as of May 2019. SAAR is seasonally adjusted annualized rate. Wage growth is measured by average hourly earnings (YOY % change).



First Quarter GDP Beats Expectations

U.S. GDP Contributors and Detractors

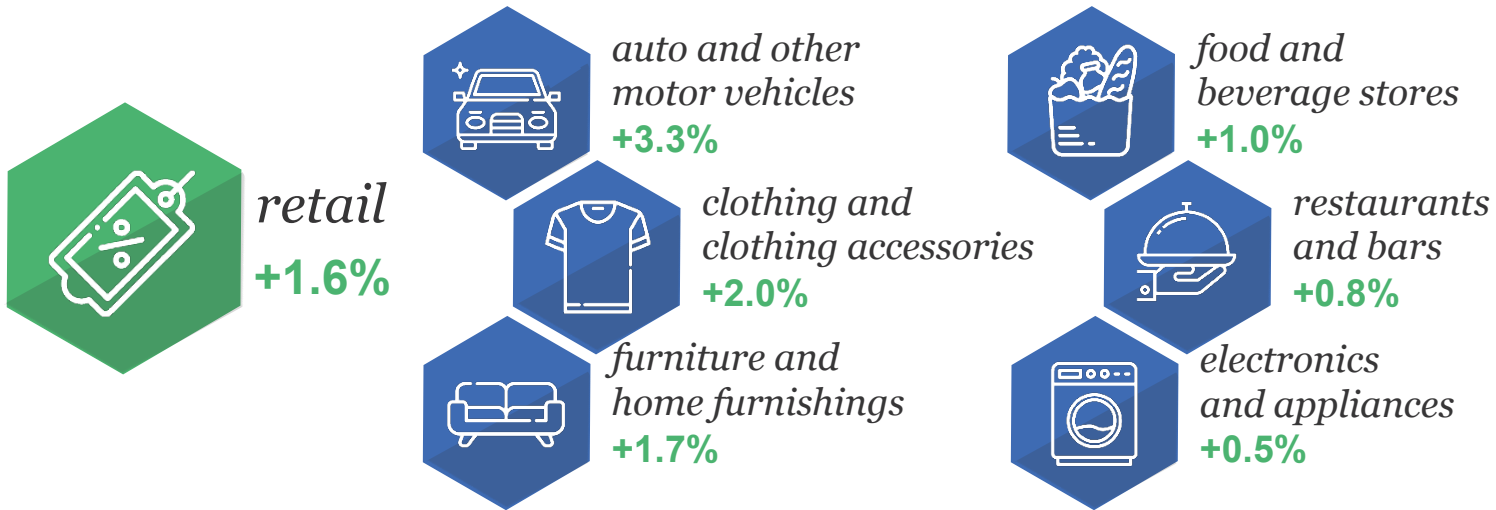


- 1st quarter GDP growth was higher than expected at 3.2%
- **Personal consumption**, which typically accounts for the majority of GDP growth, posted its 2nd lowest contribution in 4 years; **business investment** was also slower than in previous quarters
- Typically a detractor, **net exports** contributed positively to GDP as export growth increased and import growth slowed, likely to get ahead of potential new rounds of tariffs
- **Inventory** growth also contributed to GDP growth

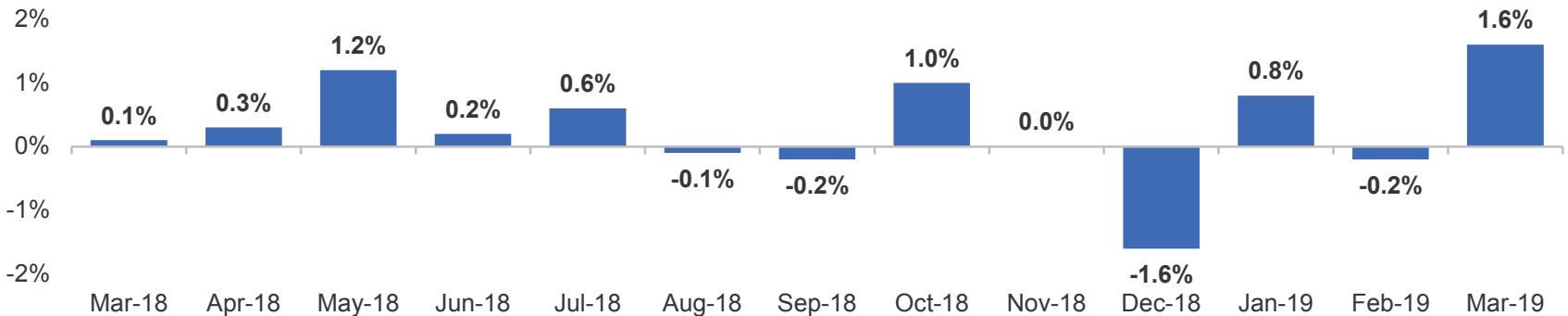
Source: Bureau of Economic Analysis, as of May 2019. 1st quarter contributions are based on the 1st GDP growth estimate.



Retail Sales Up 1.6% in March, Largest Gain Since September 2017



Retail Sales

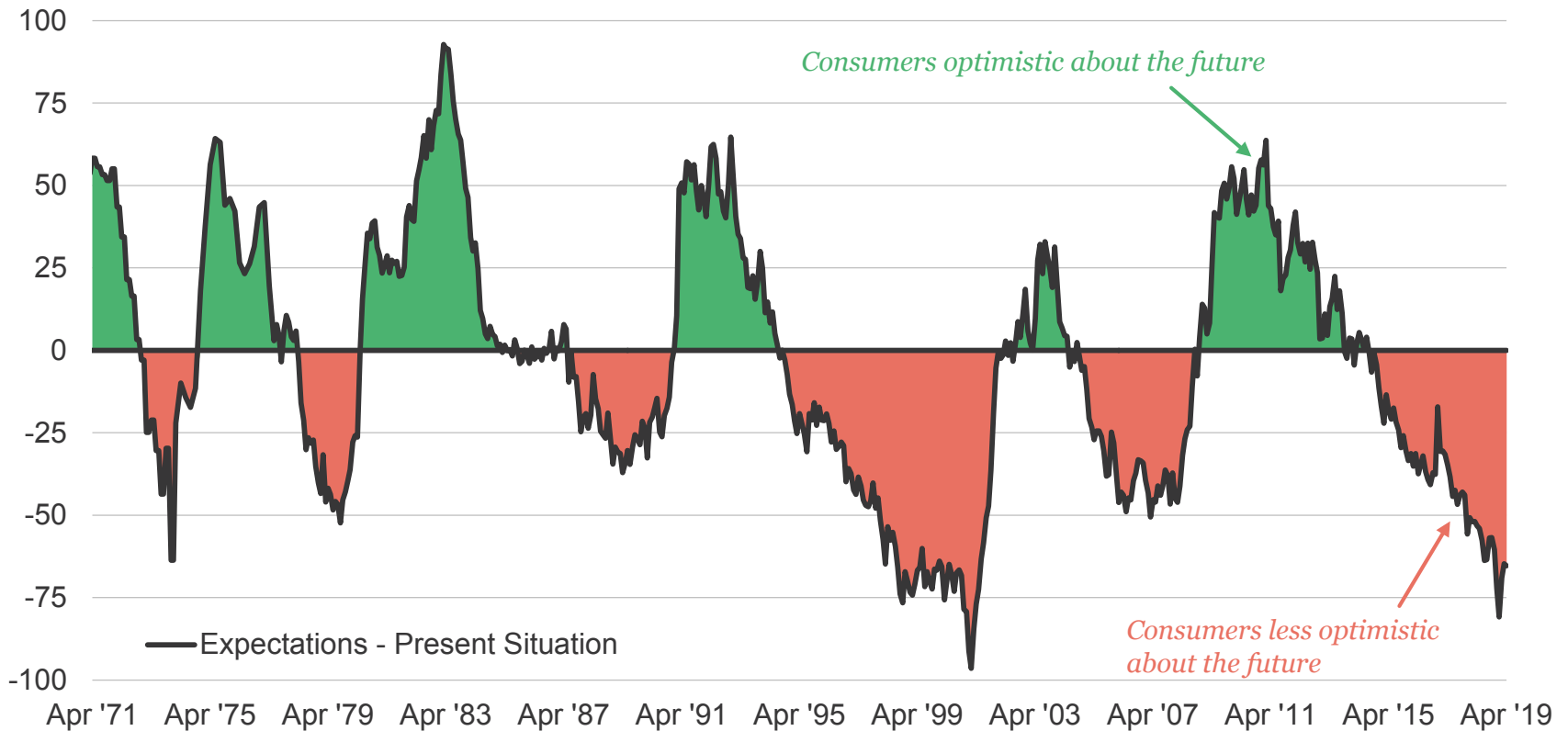


Source (top): U.S. Census Bureau, as of 4/18/19. Source (bottom): Bloomberg.



But Consumer Expectations Are Weakening

Consumer Assessments of Future Expectations
Minus Views on Current Conditions

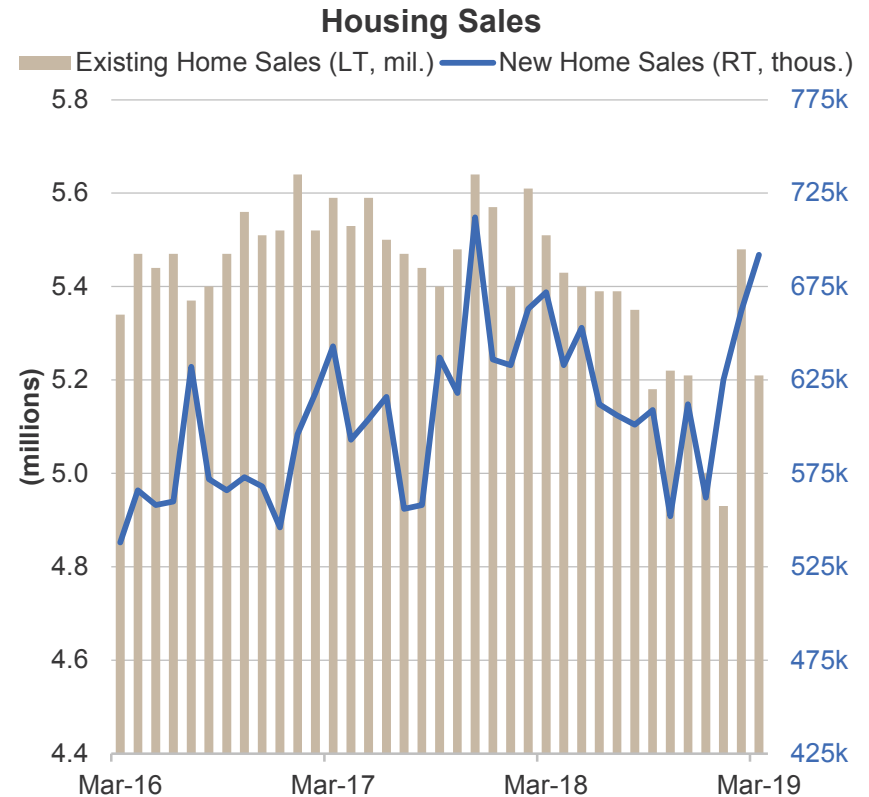
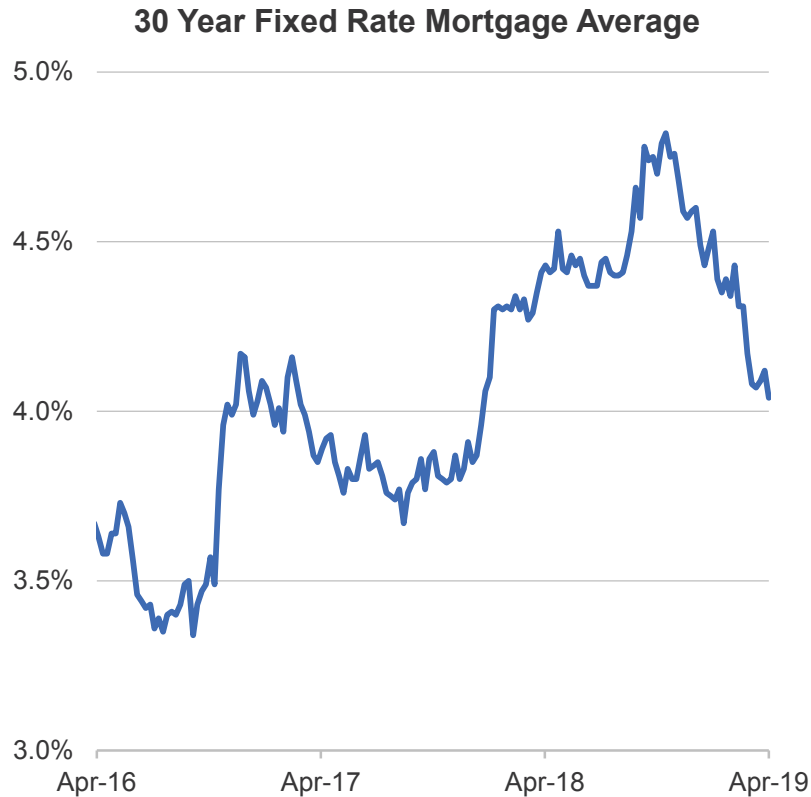


Source: Bloomberg and Conference Board, as of 4/30/2019.



Housing Market Rebounds on Lower Mortgage Rates

- Decreasing mortgage rates may be a boon to the housing market
- According to the Federal Home Loan Mortgage Corporation, mortgage demand rose to the highest level since the fall of 2016 amid increasing refinancing activity

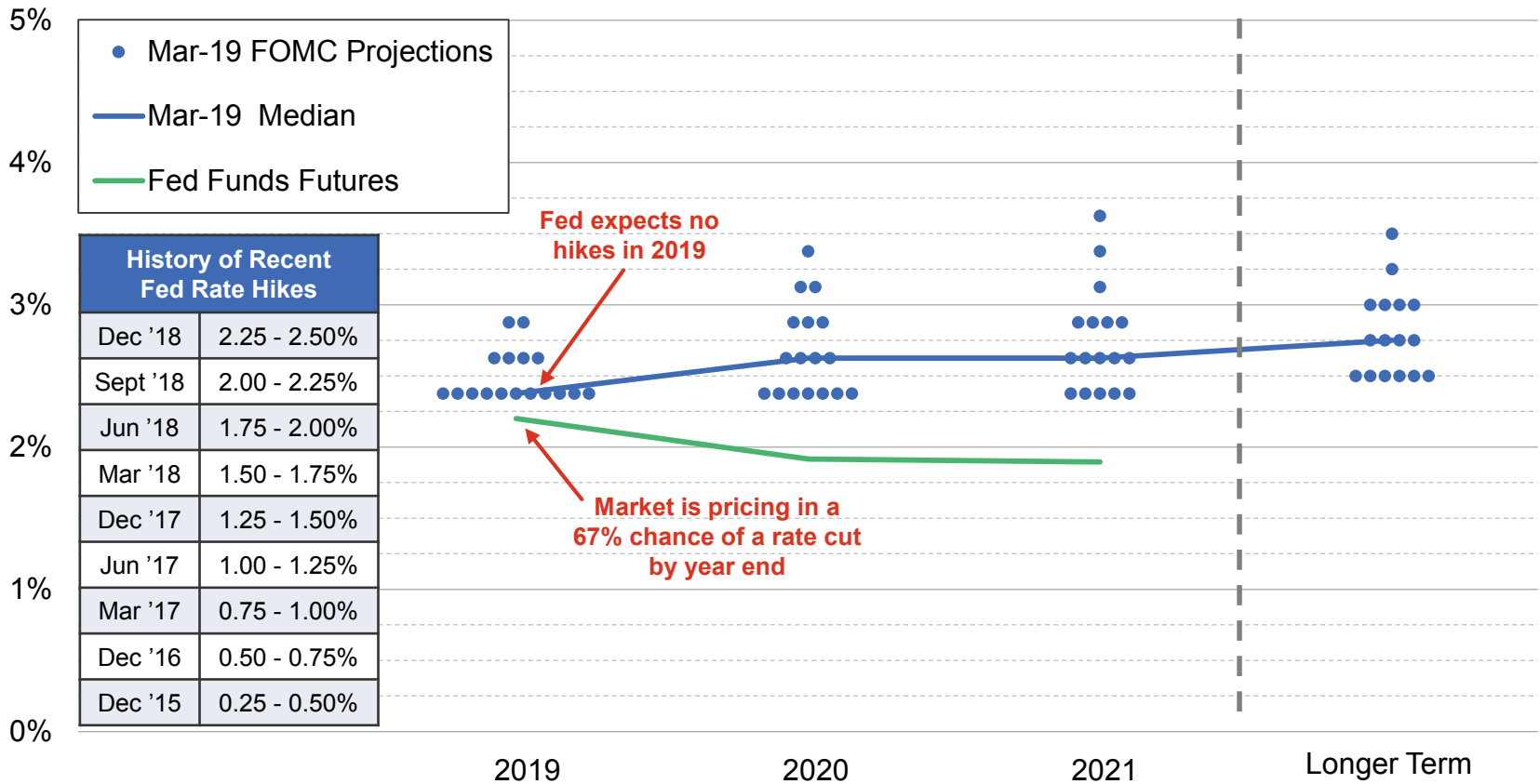


Source: Bankrate.com U.S. Home Mortgage 30 Year Fixed National Average; Bloomberg, as of 4/30/19.



Fed Indicates No Rate Hikes in 2019

Fed Participants' Assessments of 'Appropriate' Monetary Policy



Source: Federal Reserve and Bloomberg. Individual dots represent each Fed members' judgement of the midpoint of the appropriate target range for the federal funds rate at each year-end. Fed funds futures as of 4/30/19.



Fed Keeps Rates Steady at May Meeting

May

1

- Information received since the FOMC met in March indicates that the labor market remains strong and that **economic activity rose at a solid rate**.
 - Job gains have been solid, on average, in recent months, and the unemployment rate has remained low. Growth of household spending and business fixed investment **slowed** in the first quarter.
 - On a 12-month basis, **overall inflation** and inflation for items other than food and energy have **declined** and are running below 2 percent. On balance, market-based measures of inflation compensation have **remained low** in recent months, and survey-based measures of longer-term inflation expectations are little changed.
- In support of the Committee's goals, the Committee decided to **maintain the target range for the federal funds rate at 2¼ to 2½ percent**.

*“Core inflation unexpectedly fell... and as of March stood at 1.6%... We suspect that **some transitory factors** may be at work. Thus, our baseline view remains that, with a strong job market and continued growth, inflation will return to 2% over time and then be roughly symmetric around our longer-term objective.”*

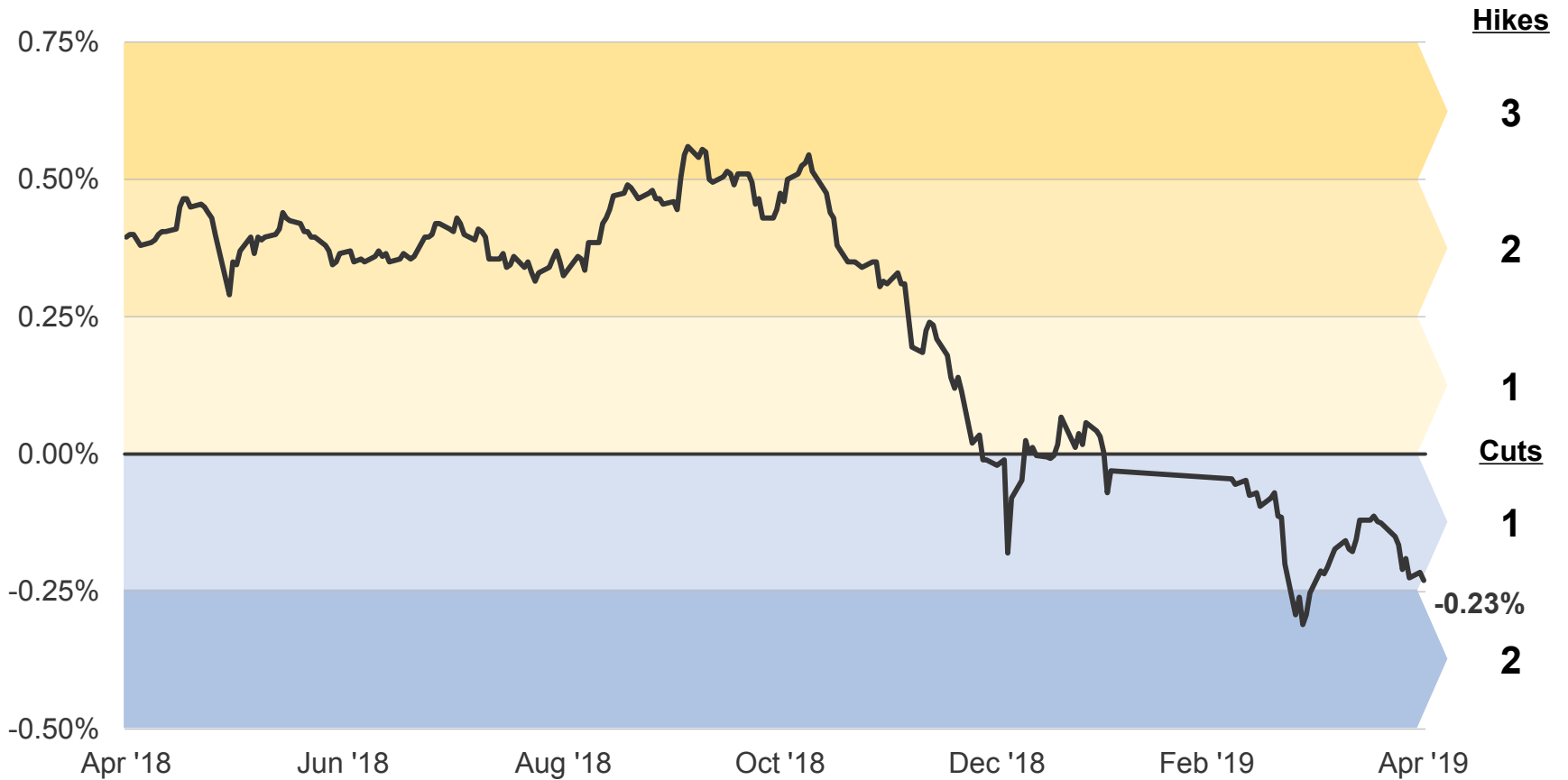
*-Jerome Powell, Fed Chair
May 1, 2019*

Source: Federal Reserve.



But, the Market Expects a Rate Cut by Year End

2019 Rate Moves
Priced into the Futures Market



Source: Bloomberg, as of 4/30/2019.

Treasury Yields Continue to Fall

2-Year Treasury



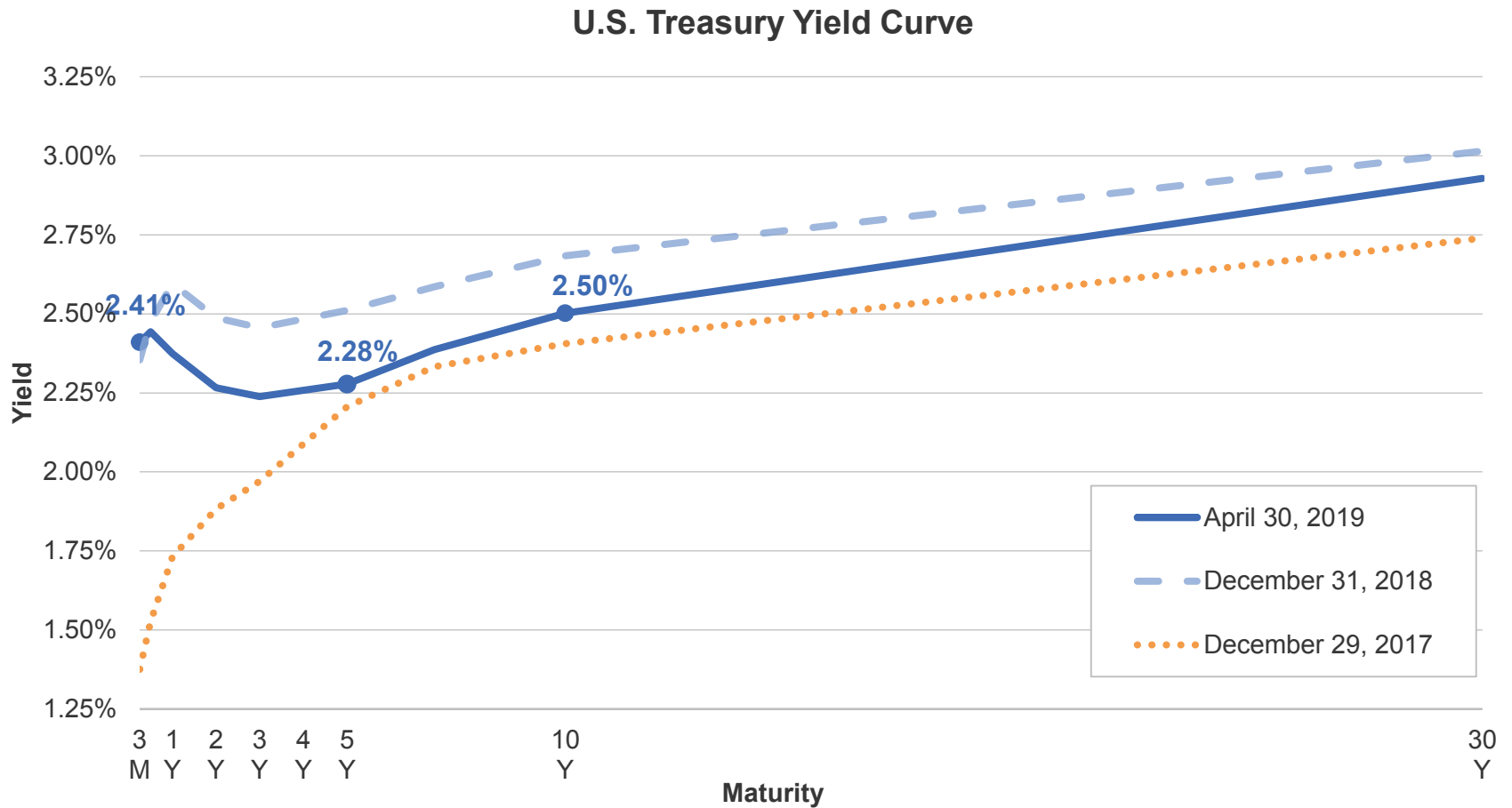
10-Year Treasury



Source: Bloomberg, as of 4/30/19.



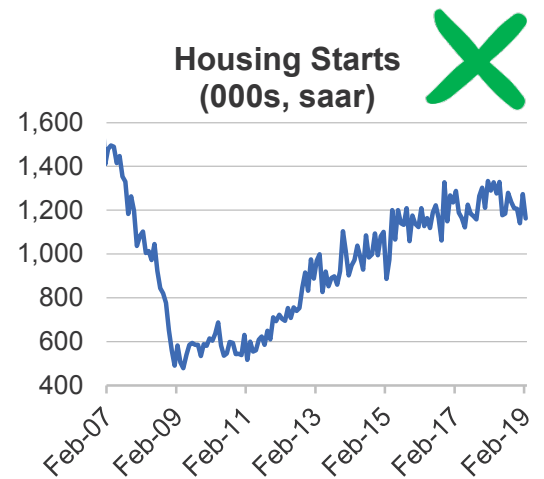
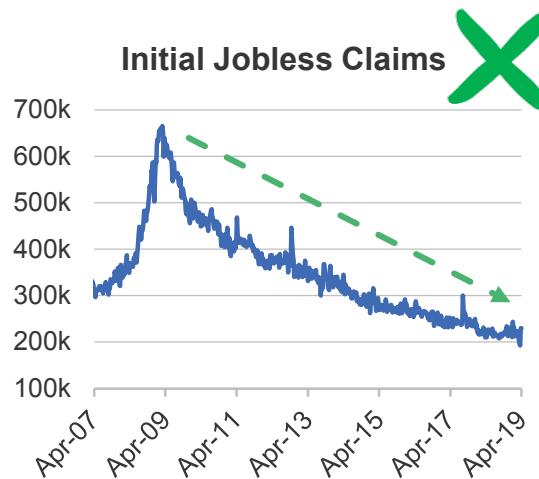
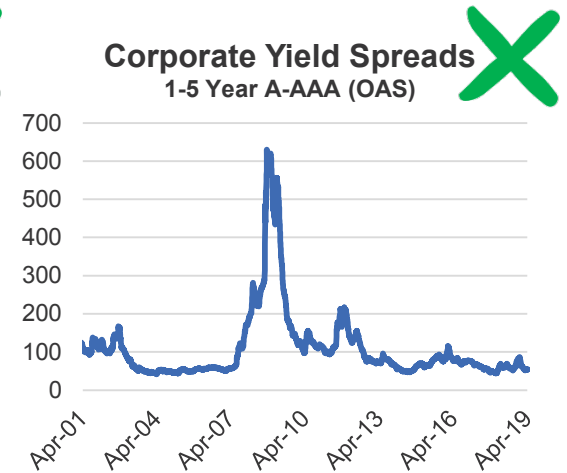
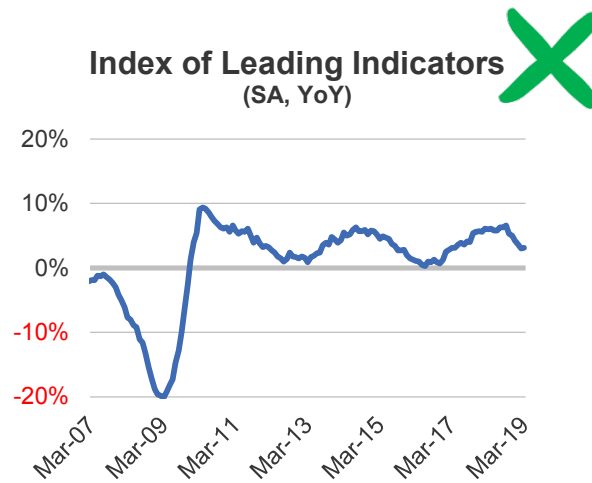
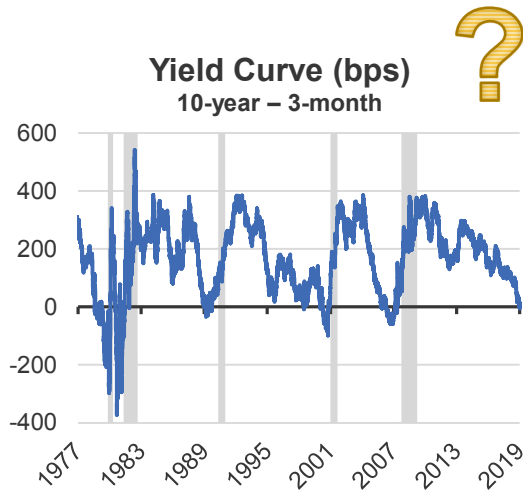
Yield Curve Remains Partially Inverted



Source: Bloomberg, as of 4/30/19.



Market Indicators Not Pointing to an Imminent Recession

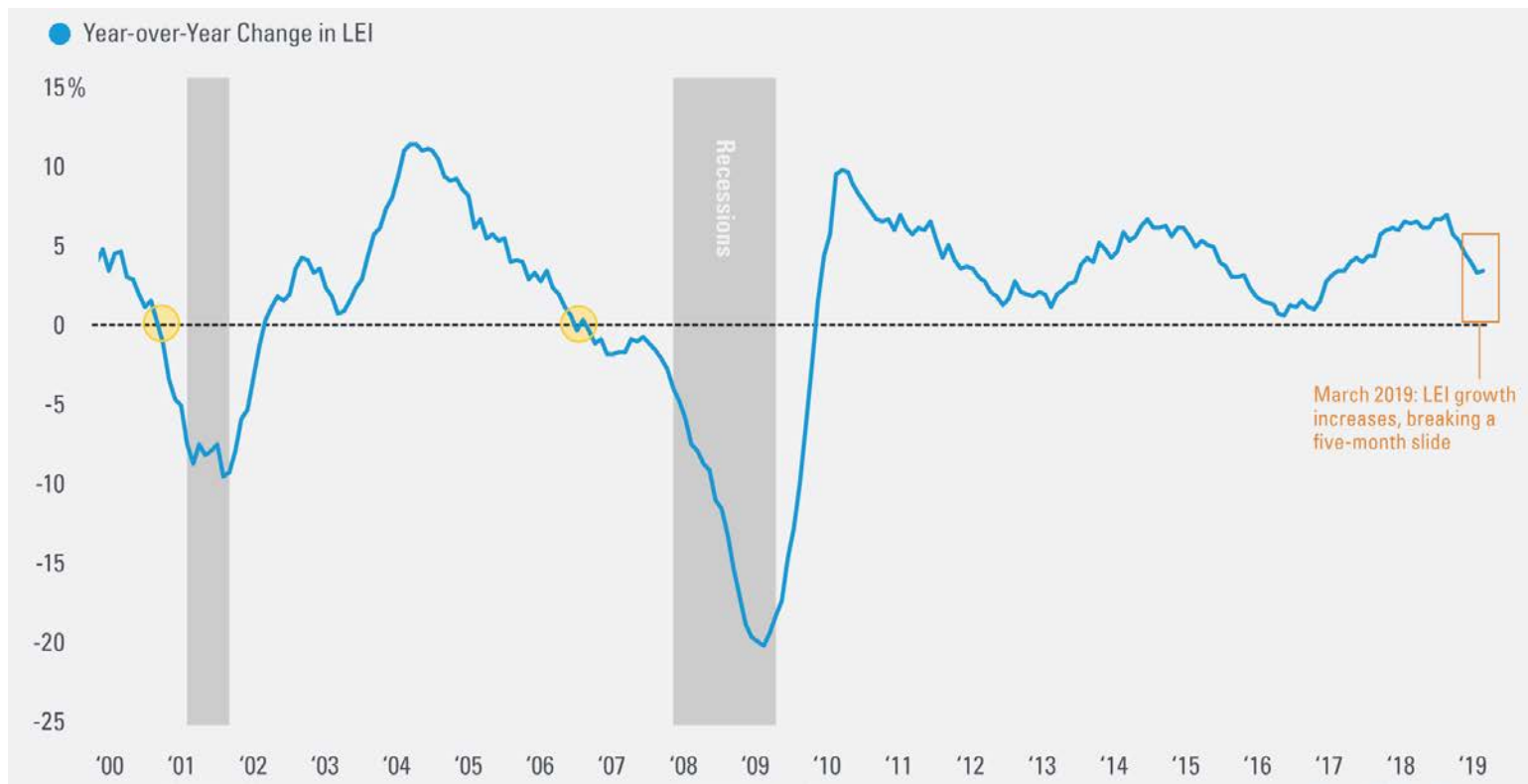


Source: Bloomberg, as of 4/30/2019.



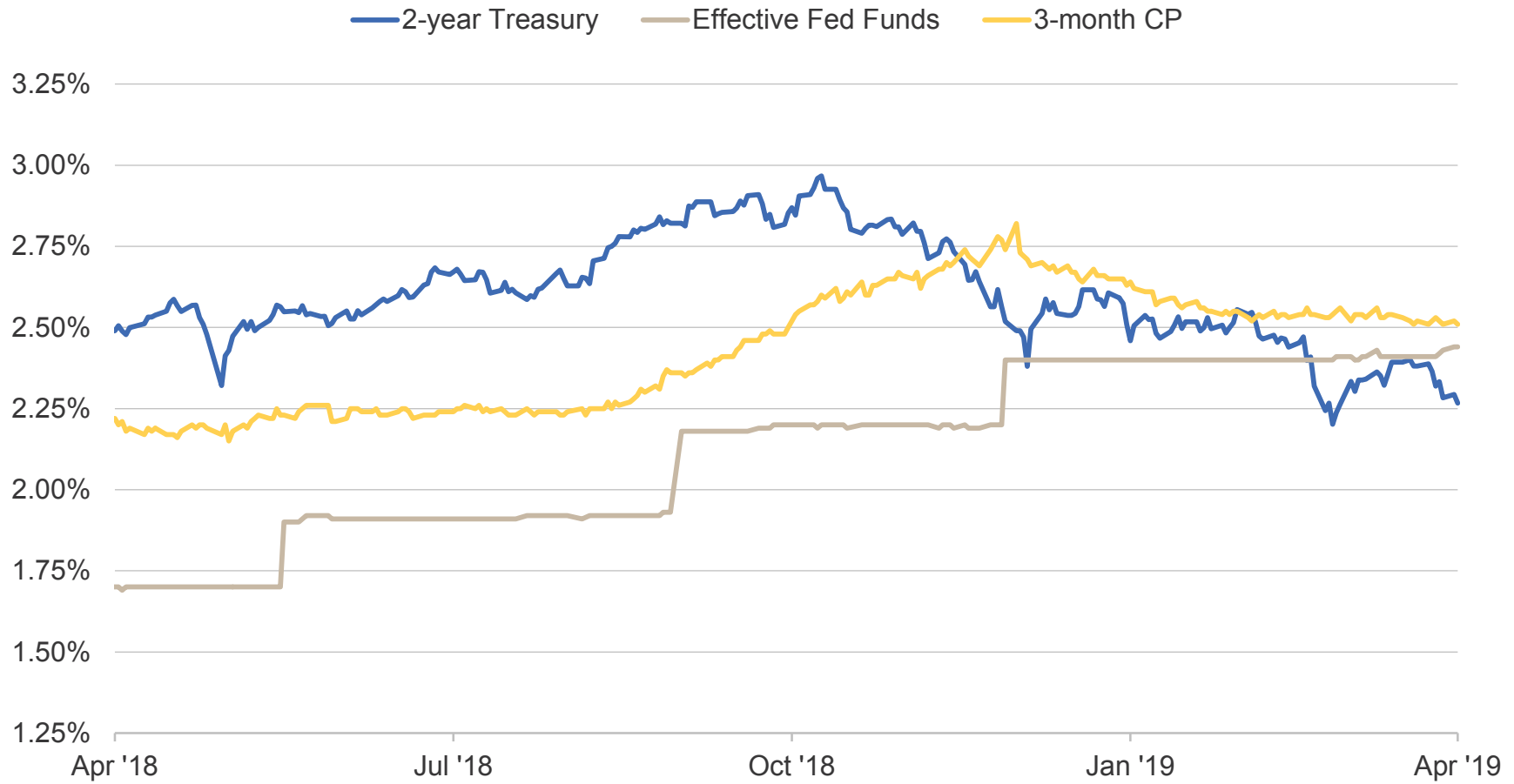
Leading Economic Index Improves for First Time in 5 Months

- The Leading Economic Index, a combination of various forward-looking economic metrics, improved in March after 5 months of declines. According to the Conference Board, the results “suggest that the expansion in economic activity should continue, but the pace of growth is likely to decelerate by year end.”



Source: LPL Research, Conference Board, latest data available as of May 3, 2019.

Short-Term Yield Relationships Have Realigned



Source: Bloomberg and PFM Trading Desk, as of 4/30/2019. 3-Month CP yield spread based on A1/P1 rated CP index.



Global Bonds Yielding Less Than 0% Hits \$10 Trillion

Negative Yielding Issues in the Bloomberg Barclays Global Bond Aggregate



Source: Bloomberg, as of 4/30/2019; Barclays.

Agency Curve: various sources

AA Corporate Curve: BVSC0073 Index; 3mo CP: DCPA090Y Index; 6mo CP: DCPA180Y Index

A Corporate Curve: BVSC0074 Index; 3mo CP :DCPB090Y Index; 6mo CP: DCPB180Y Index

Taxable Municipal Curve: BVSC1074 Index

Yield Environment as of April 30, 2019

Maturity	Treasury	Federal Agency	AA Corporate	A Corporate	BBB Corporate
3-Month	2.41%	2.41%	2.52%	2.64%	2.85%
1-Year	2.37%	2.30%	2.54%	2.65%	2.89%
2-Year	2.27%	2.29%	2.54%	2.68%	2.97%
3-Year	2.24%	2.26%	2.56%	2.70%	3.04%
5-Year	2.28%	2.29%	2.73%	2.88%	3.31%
10-Year	2.50%	2.66%	3.19%	3.41%	3.98%

Source: Bloomberg BVAL yield curves for Treasury and Corporate. TradeWeb for Federal Agency yields. 3-month corporate yields from commercial paper; A-1+ for AA and A-1 for A. Yields are for indicative purposes only; actual yields may vary by issue.



Implied Forward Treasury Rates Show Little Expected Change

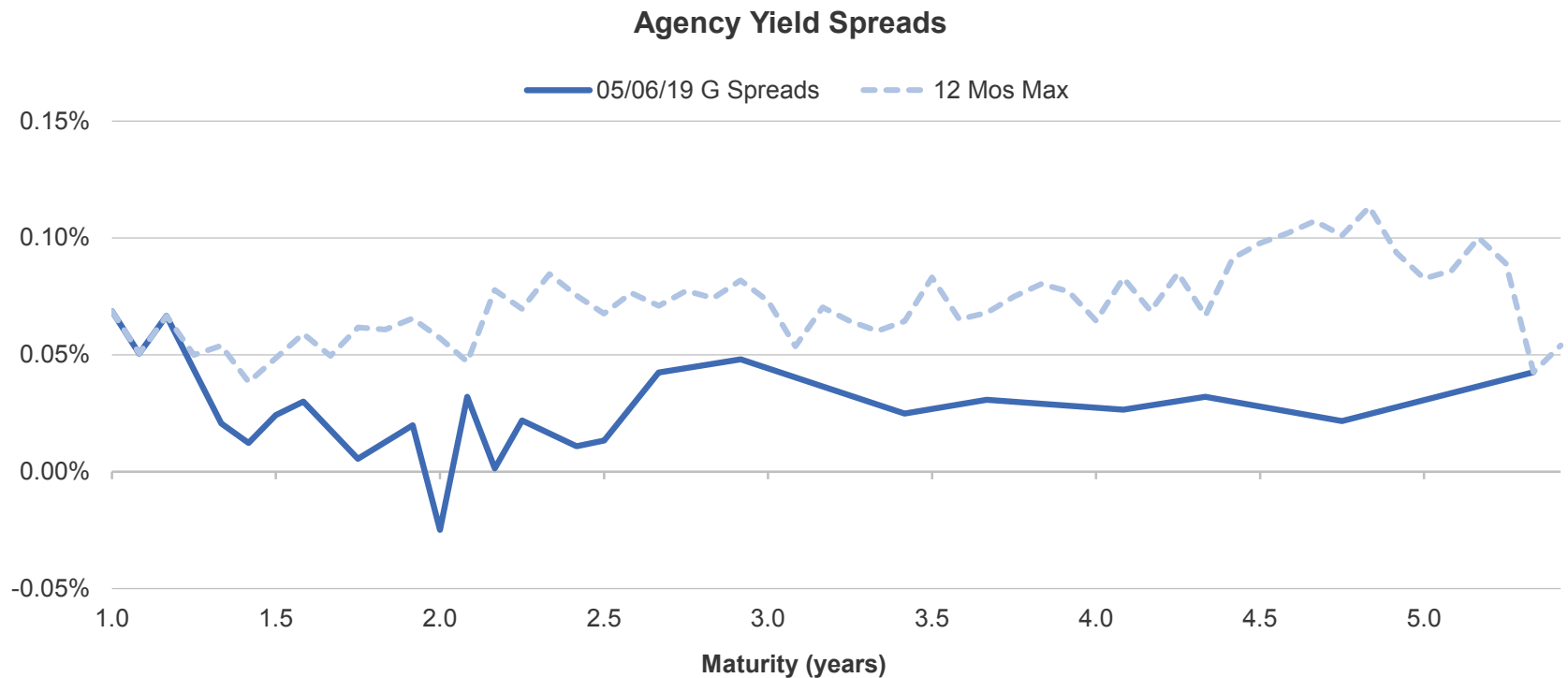
Maturity	Current Yield	1-year Forward	2-year Forward	3-year Forward	5-year Forward
1 year	2.39%	2.15%	2.17%	2.32%	2.69%
2 year	2.27%	2.16%	2.24%	2.39%	2.69%
3 year	2.24%	2.21%	2.31%	2.48%	2.72%
5 year	2.29%	2.35%	2.46%	2.58%	2.76%
7 year	2.40%	2.45%	2.55%	2.65%	2.80%
10 year	2.51%	2.56%	2.64%	2.72%	2.84%
30 year	2.93%	2.97%	3.01%	3.06%	3.13%

Source: Bloomberg, as of 4/30/19.



Agency and Supranational Yield Spreads Very Tight

- Federal agency bullet spreads remain compressed near historic lows, with some issues at the same yield as comparable Treasuries.
- The expected Q1 surge in supranational supply has not materialized keeping their yield spreads also remain narrow.

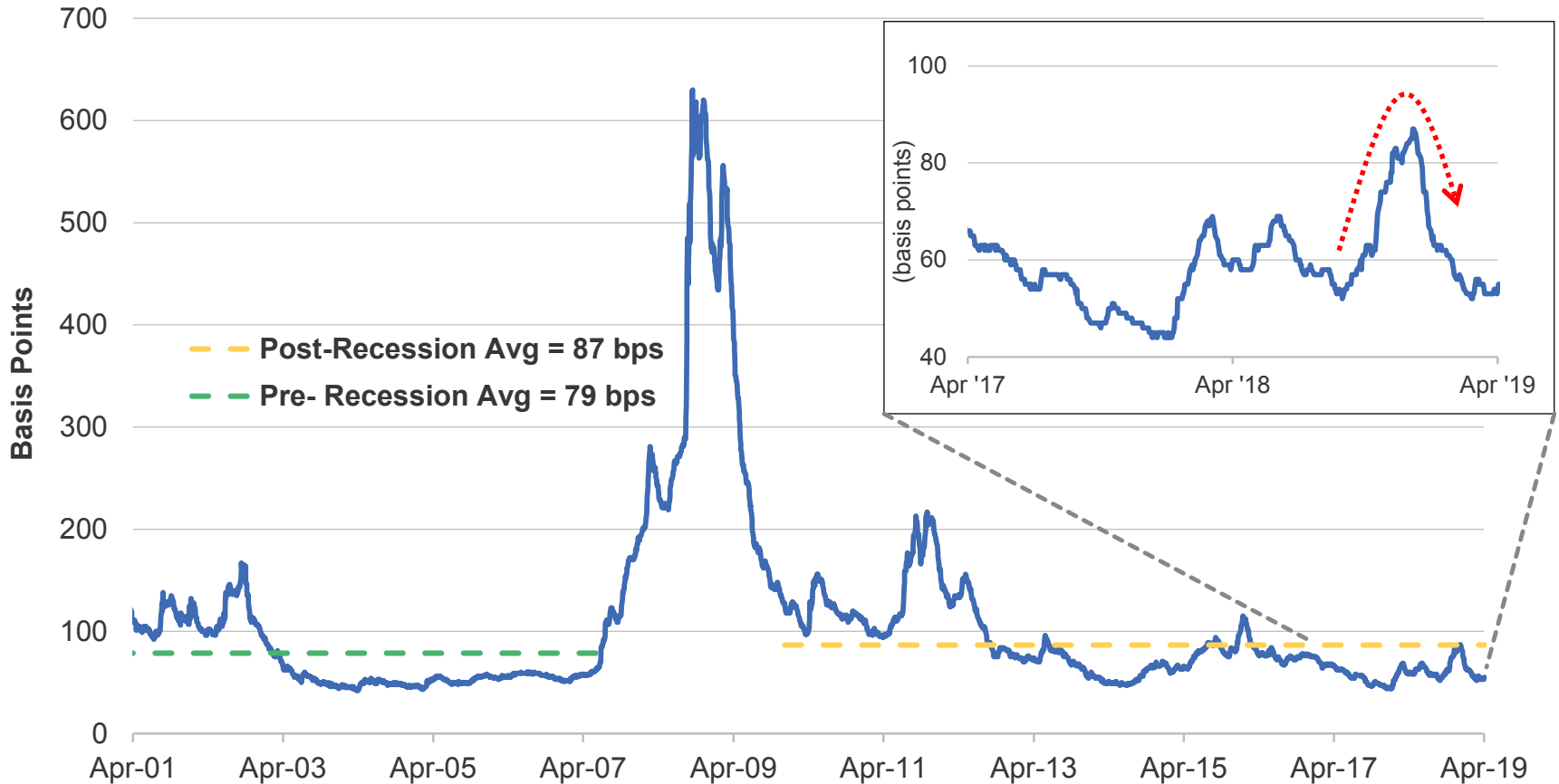


Source: Bloomberg, TradeWeb, as of 5/06/19.



Corporate Credit Spreads Return to Below Historical Averages

Yield Spread (OAS) of 1-5 Year A-AAA Corporate Index

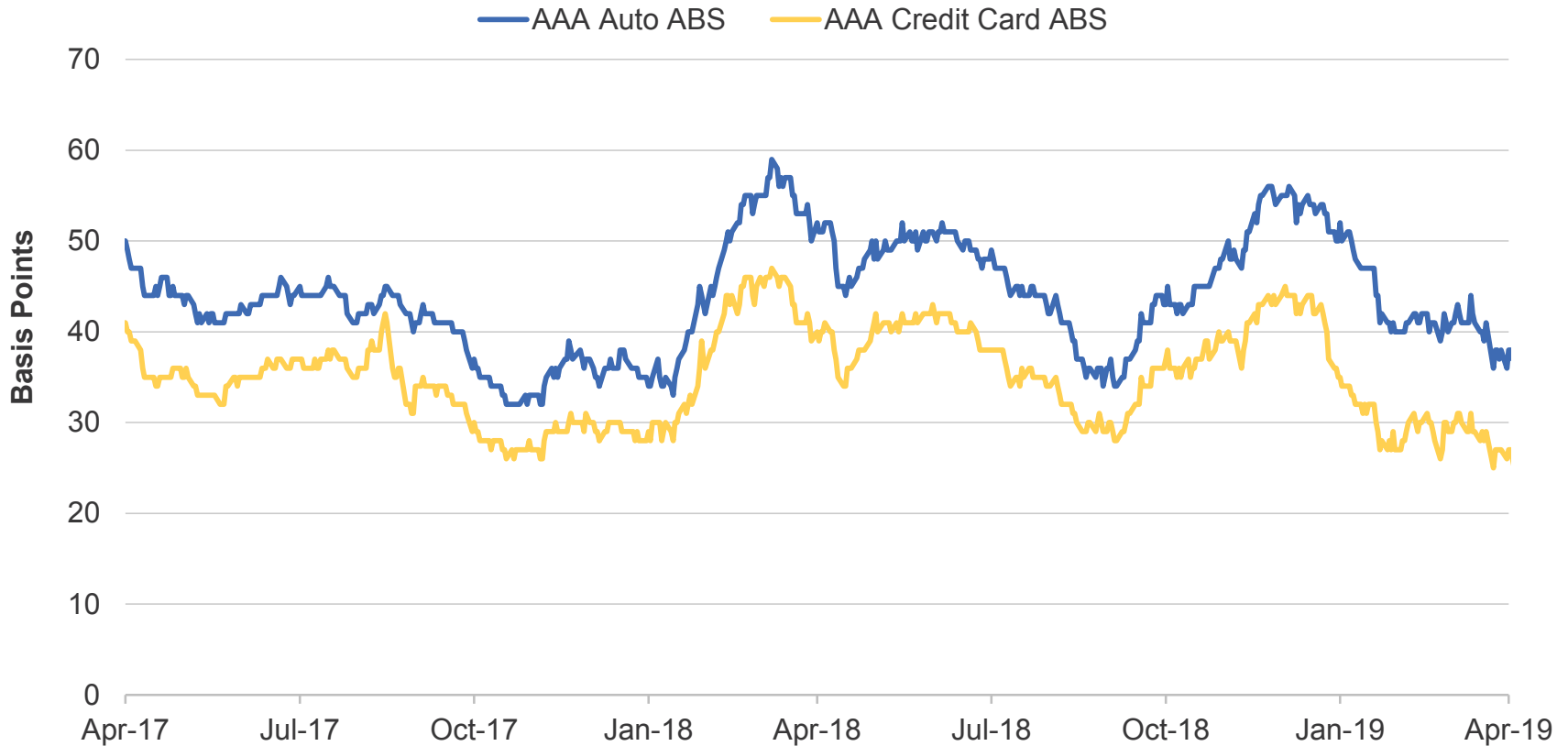


Source: Bloomberg, ICE BofAML Indices. OAS is option adjusted spread. As of 04/30/19.



Asset-Backed Securities Present an Attractive Source of Relative Value

Yield Spread (OAS) on Asset-Backed Securities

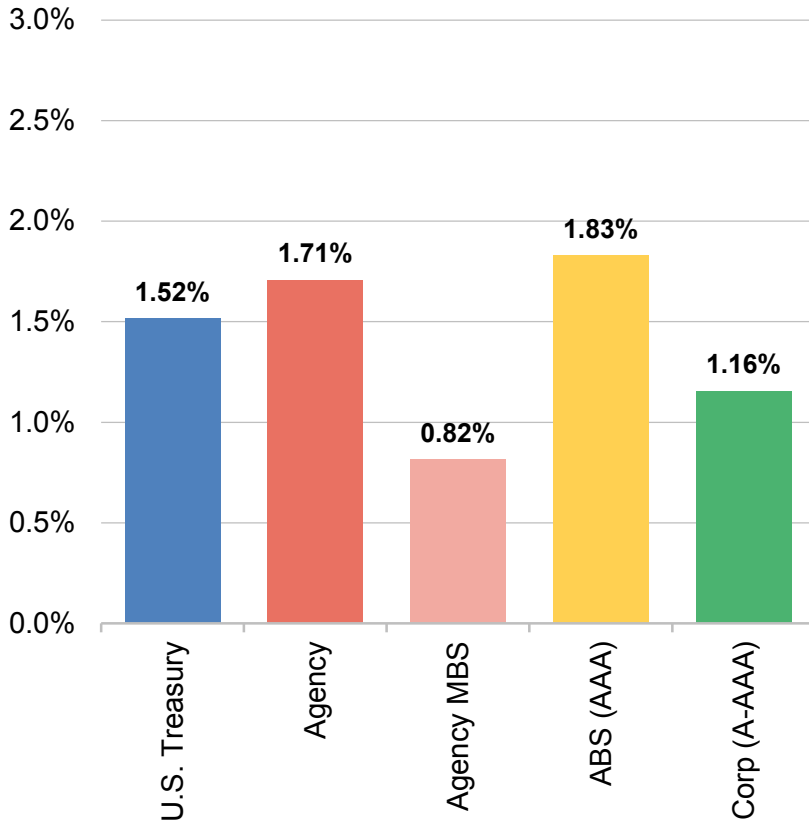


Source: Bloomberg, ICE BofAML Indices. OAS is option adjusted spread. As of 04/30/19.

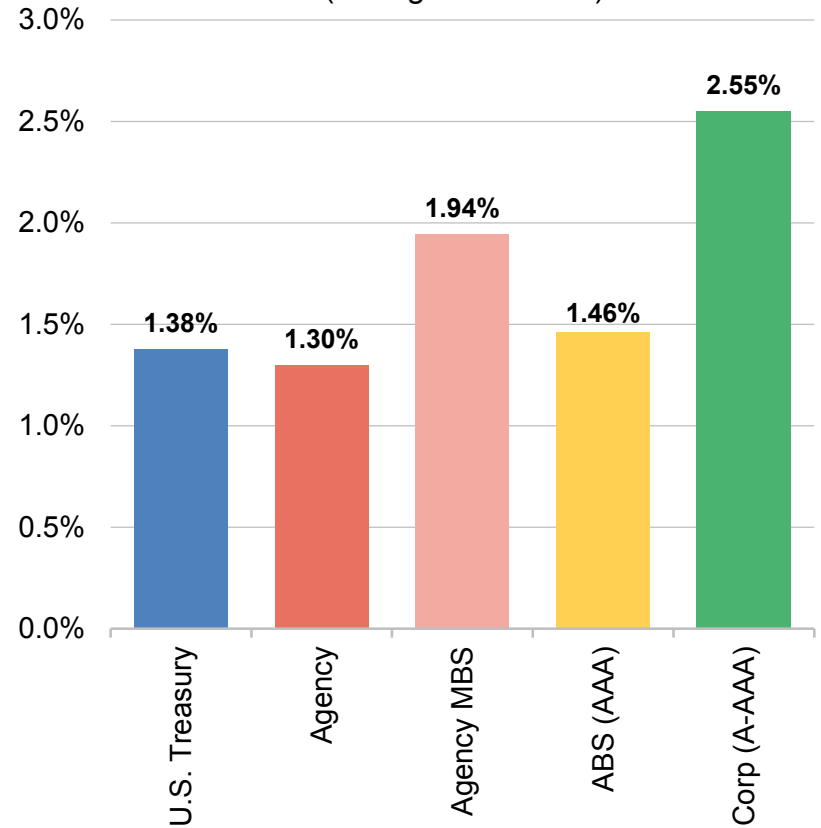


Strong Fixed Income Returns Year-To-Date (1-5 Year Indices)

2018 Returns



2019 YTD Returns (through 4/30/2019)

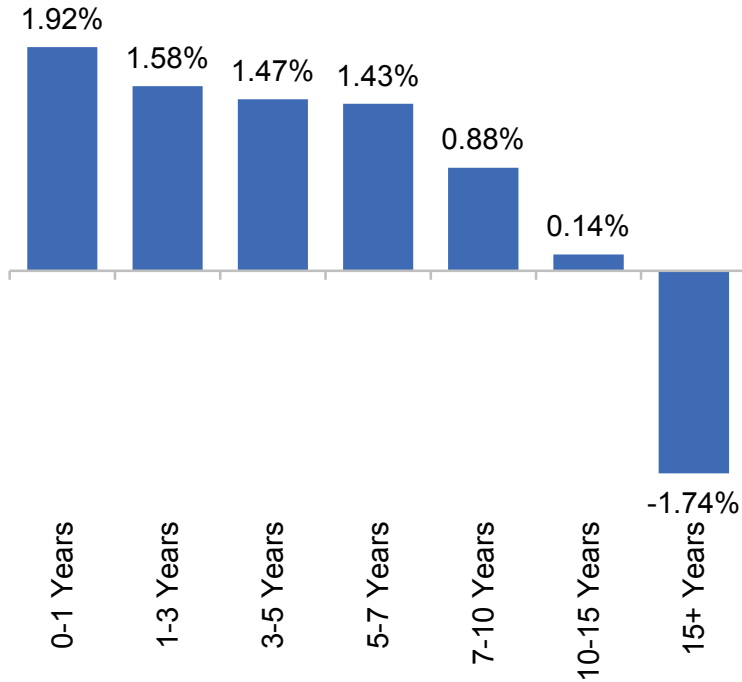


Source: ICE BofAML Indices. MBS and ABS indices are 0-5 year, based on weighted average life.

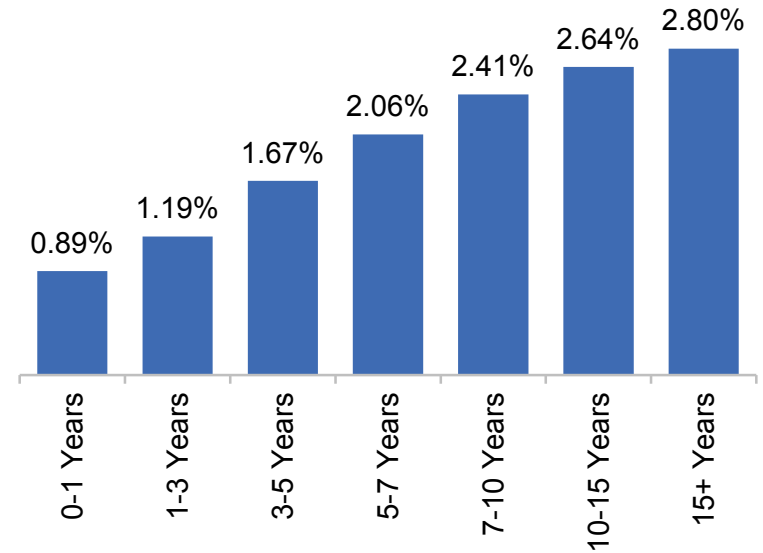


Treasury Returns by Maturity

2018 Returns



YTD Returns (through 4/30/2019)



Source: ICE BofAML Indices.



Fixed-Income Sector Outlook – May 2019

Sector	Our Investment Preferences	Comments
COMMERCIAL PAPER / CD		<ul style="list-style-type: none"> Commercial paper/negotiable CD spreads have narrowed modestly over the past few months. Short credit remains higher-yielding than some longer-dated Treasuries.
TREASURIES		
T-Bill		<ul style="list-style-type: none"> Treasury Bill supply increased in March but slowed in April, putting downward pressure on rates.
T-Note		<ul style="list-style-type: none"> The 3-month to 10-year part of the yield curve briefly inverted in the past two months, renewing concerns about a possible recession. With a flat-to-inverted yield curve, there is little expected roll-down.
FEDERAL AGENCIES		
Bullets		<ul style="list-style-type: none"> Federal agency spreads remain very tight. The only value has been in certain new issue securities
Callables		<ul style="list-style-type: none"> Given the flat yield curve, callable agencies are more attractive due to their incremental yield benefit.
SUPRANATIONALS		<ul style="list-style-type: none"> In supranationals, we continue to wait for expected supply to drive spreads wider. Until then, we will generally remain on the sidelines.
CORPORATES		
Financials		<ul style="list-style-type: none"> Corporate yield spreads have narrowed back significantly, settling in around longer-term, post-recession historical averages. While the sector is no longer “cheap”, we plan to maintain allocations.
Industrials		<ul style="list-style-type: none"> The corporate spread curve remains positively sloped, offering modest value for extending maturities.
SECURITIZED		
Asset-Backed		<ul style="list-style-type: none"> The AAA-rated ABS sector continues to offer attractive incremental income vs. government alternatives and offers a defensive outlet to credit exposure.
Agency Mortgage-Backed		<ul style="list-style-type: none"> With an improving fundamental landscape, Agency MBS are an attractive alternative to other government sectors due to their incremental income potential.
MUNICIPALS		<ul style="list-style-type: none"> Munis continue to be expensive vs. Treasuries amid limited supply.



Fixed-Income Index Returns

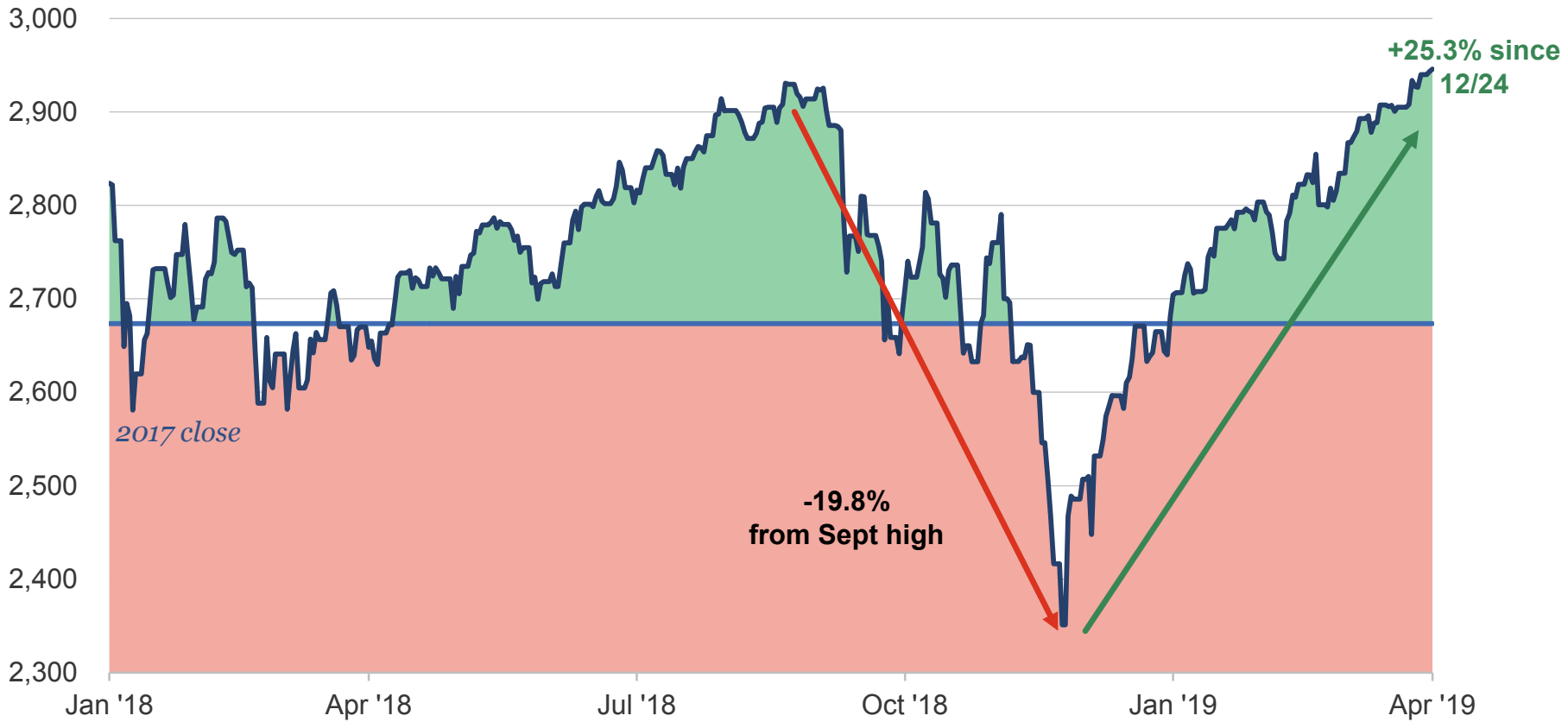
April 30, 2019	Effective Duration	Yield	YTD	1 Month	3 Month	1 Year	3 Years	5 Years
1-3 Year Indices								
U.S. Treasury	1.79	2.33%	1.19%	0.20%	0.92%	3.08%	1.05%	0.99%
Agency	1.61	2.34%	1.18%	0.21%	0.89%	3.15%	1.23%	1.12%
Corp A-AAA	1.82	2.76%	1.92%	0.27%	1.24%	3.91%	1.89%	1.73%
MBS (0 to 3 Years)	4.07	3.00%	1.86%	(0.33%)	1.09%	3.87%	1.63%	1.57%
ABS (0 to 3 Years)	1.11	2.69%	1.37%	0.28%	1.02%	3.24%	1.75%	1.45%
1-5 Year Indices								
U.S. Treasury	2.54	2.32%	1.38%	0.16%	1.05%	3.66%	1.02%	1.27%
Agency	1.91	2.31%	1.30%	0.19%	0.99%	3.45%	1.24%	1.33%
Corp A-AAA	2.56	2.84%	2.55%	0.27%	1.55%	4.64%	2.03%	2.12%
MBS (0 to 5 Years)	3.61	2.97%	1.94%	(0.01%)	1.21%	3.86%	1.37%	1.86%
ABS (0 to 5 Years)	1.34	2.71%	1.46%	0.29%	1.11%	3.43%	1.78%	1.56%
Master Indices (Maturities 1 Year and Greater)								
U.S. Treasury	6.31	2.46%	1.85%	(0.32%)	1.38%	4.78%	1.00%	2.14%
Agency	3.99	2.49%	1.83%	0.00%	1.45%	4.40%	1.56%	2.00%
Corp A-AAA	7.09	3.33%	4.66%	0.21%	2.74%	6.18%	2.70%	3.40%
MBS (0 to 30 Years)	4.52	3.16%	2.14%	(0.12%)	1.29%	4.93%	1.71%	2.43%
Municipals	6.67	2.46%	3.38%	0.42%	2.61%	6.08%	2.59%	3.64%

Source: ICE BofAML Indices. Returns greater than one year are annualized.



Stock Market Hits New Record High

S&P 500 Price Change

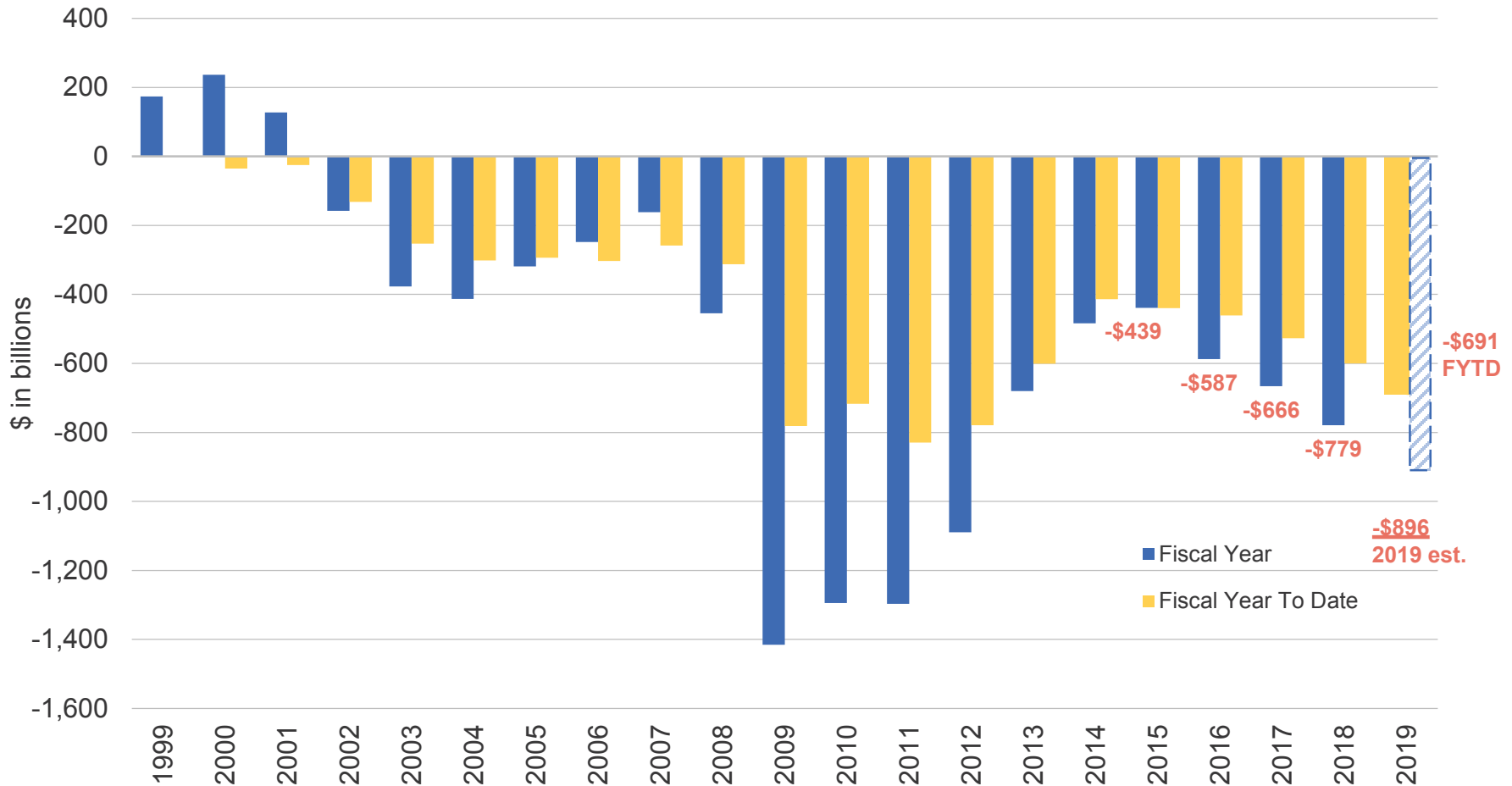


Source: Bloomberg, as of 04/30/2019.



U.S. Federal Budget Deficit Continues to Surge

Fiscal Year (ending September 30th)



Source: Bloomberg, as of 04/30/19. The fiscal year ends September 30, 2019.

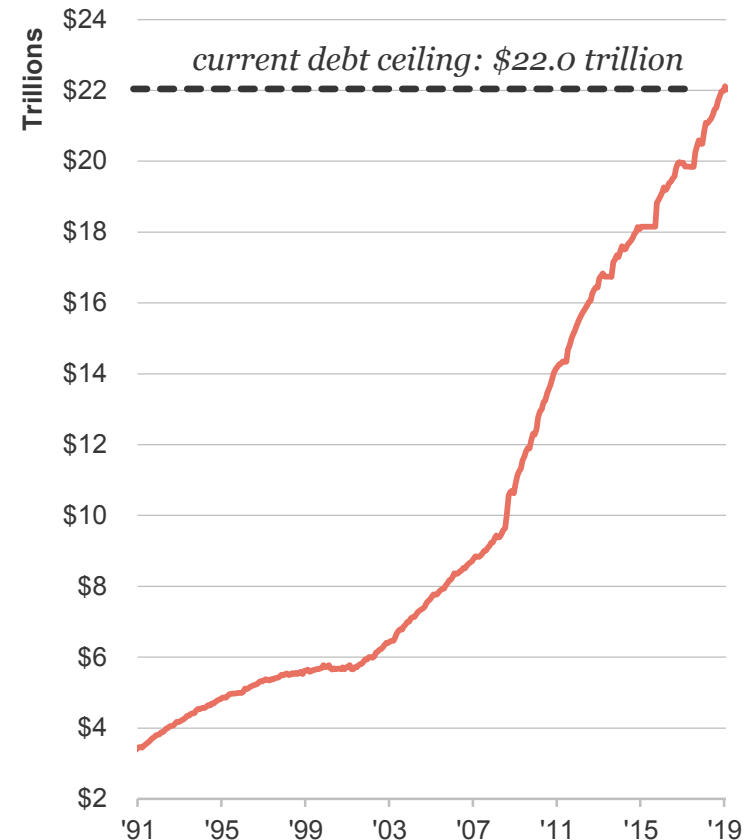


U.S. Federal Government Debt Ceiling Reinstated

The debt limit is the total amount of money that the United States government is authorized to borrow to meet its existing legal obligations, including Social Security and Medicare benefits, military salaries, interest on the national debt, tax refunds, and other payments.

- The debt ceiling funds commitments that Congress has already approved and are obligated to pay for
- Congress suspended the debt limit from February 9, 2018 until March 1, 2019
 - During this period, the unconstrained national debt rose from \$20.5 trillion to \$22.0 trillion – an all-time high
- The Treasury has now implemented “extraordinary measures” meant to free up room under the reinstated ceiling to allow the government to continue to fund day-to-day government operations
 - Includes suspending the issuance of SLGS and investments in certain governmental retirement programs/trust funds
 - These measures will allow the government to fund vital operations until sometime late summer

U.S. Total Public Debt Outstanding



Sources: U.S. Department of the Treasury, Bipartisan Policy Center, Bloomberg, as of 4/30/19.



Geopolitical Risks Persist Around the Globe



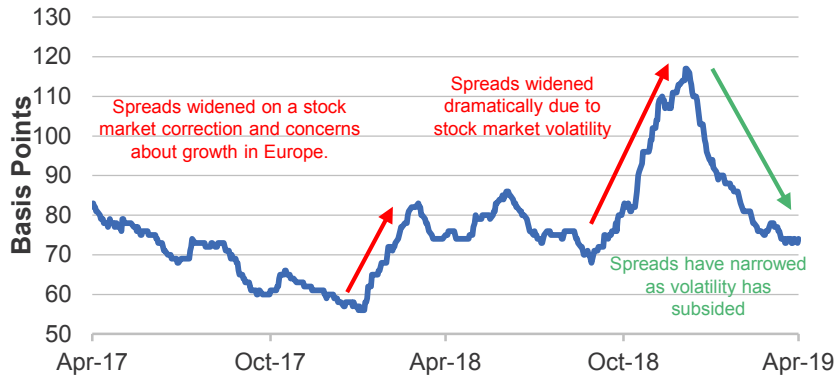


New or Topical Material

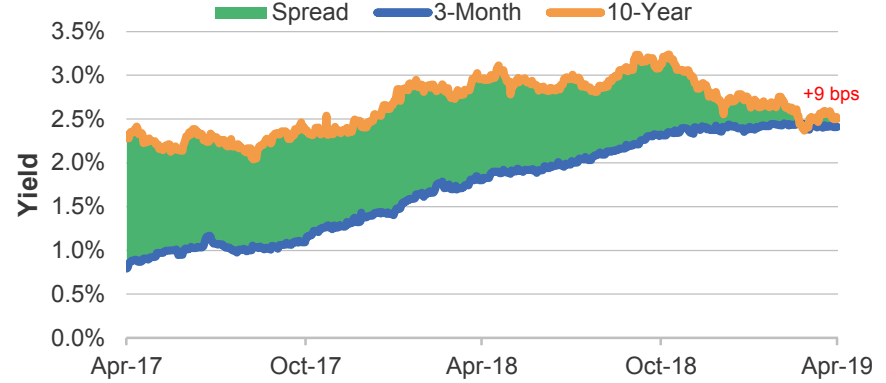


What We're Watching...

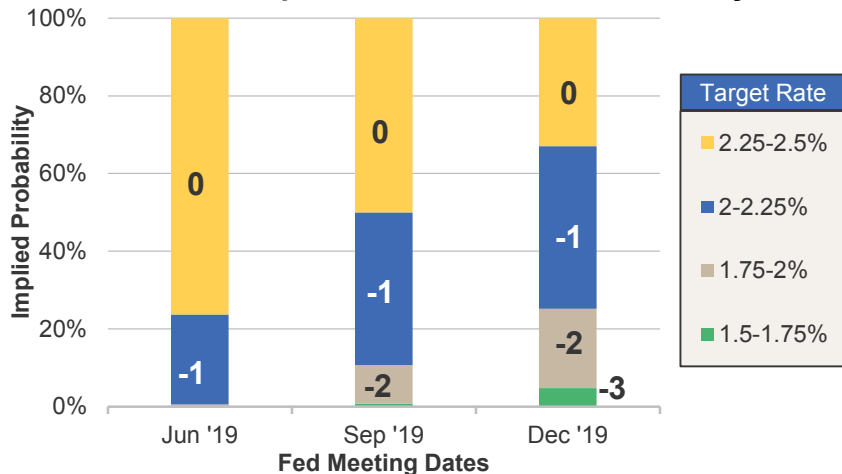
1-5 Year Corporate Spreads



Flattening Yield Curve (10-Yr vs. 3-Mo)



Market Implied Fed Rate Hike Probability



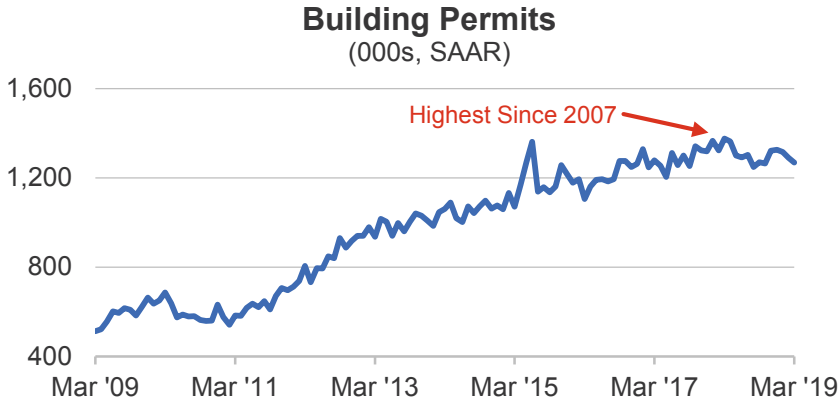
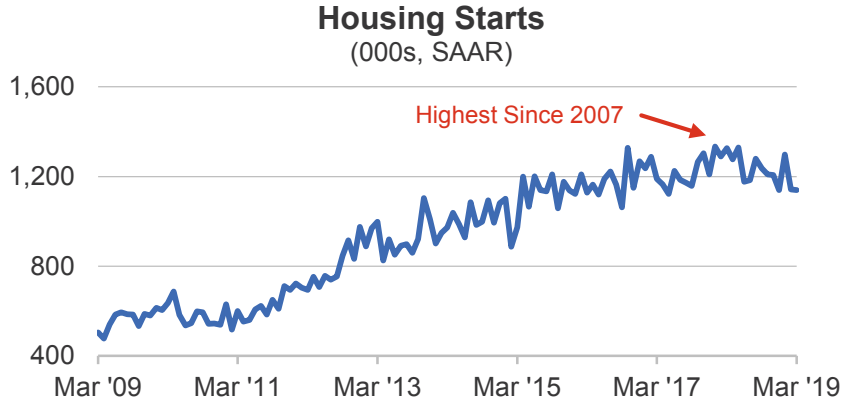
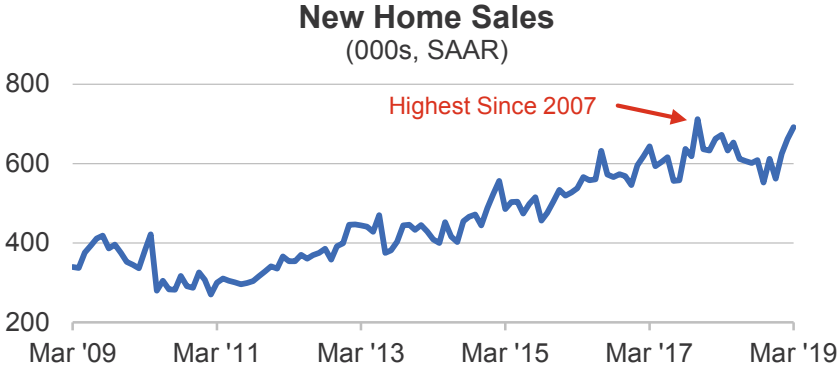
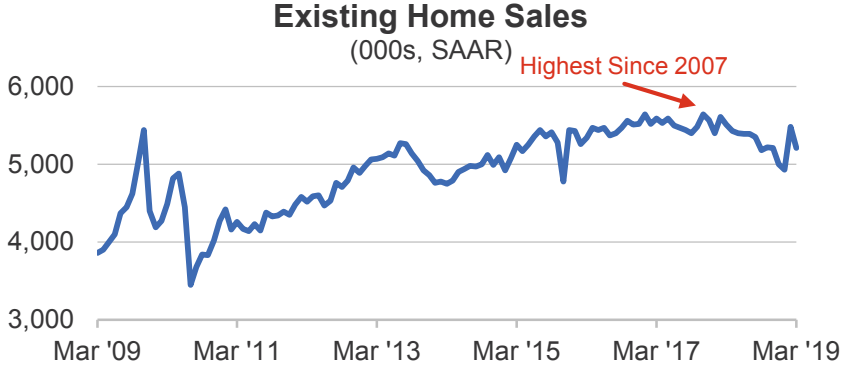
Yield Environment

Maturity	Treasury	Federal Agency	AA Corporate	A Corporate	BBB Corporate
3-Month	2.41%	2.41%	2.52%	2.64%	2.85%
1-Year	2.37%	2.30%	2.54%	2.65%	2.89%
2-Year	2.27%	2.29%	2.54%	2.68%	2.97%
3-Year	2.24%	2.26%	2.56%	2.70%	3.04%
5-Year	2.28%	2.29%	2.73%	2.88%	3.31%
10-Year	2.50%	2.66%	3.19%	3.41%	3.98%

Source: Bloomberg, yield spreads from ICE BofAML Indices, as of 04/30/19. Implied Fed rate hike probability, as of 04/30/2019.

Existing sales: ETSLOTL Index
New sales: NHSLTOT Index
Starts: NHSPSTOT Index
Permits: NHSPATOT Index

Housing Market



Source: Bloomberg, as of May 2019. SAAR is the seasonally adjusted annualized rate.



Oil Up; Other Commodity Prices Mixed

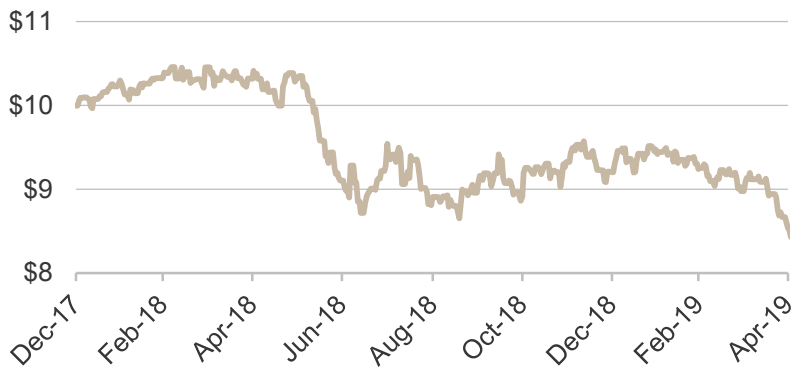
WTI Crude Oil (per barrel)



Gold (per oz.)



Soybeans (per bushel)



Avocados (per 10 Kg)

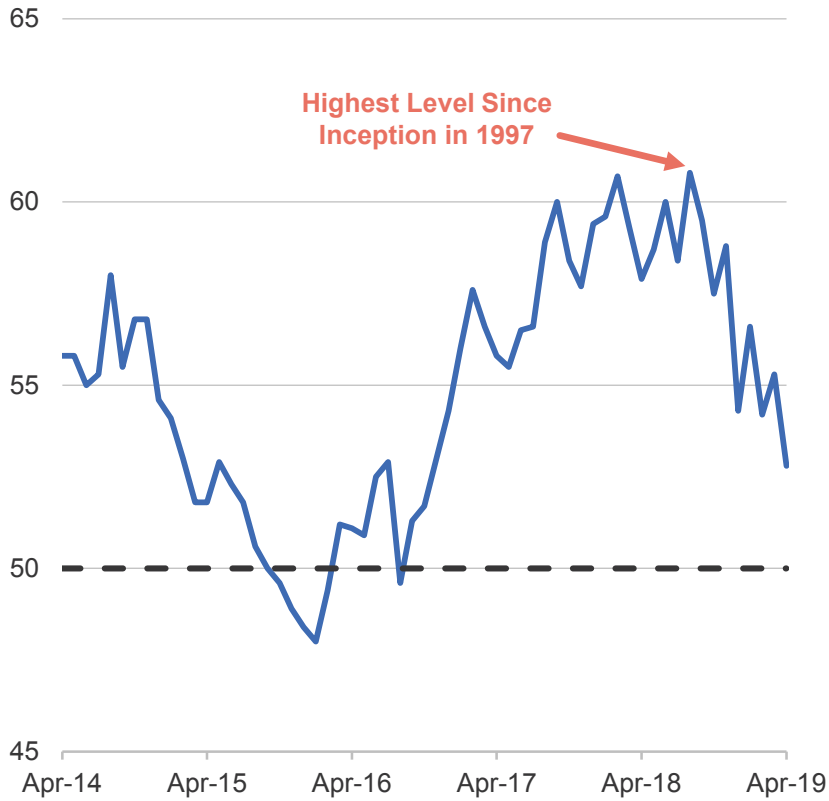


Source: Bloomberg, as of 4/30/19.

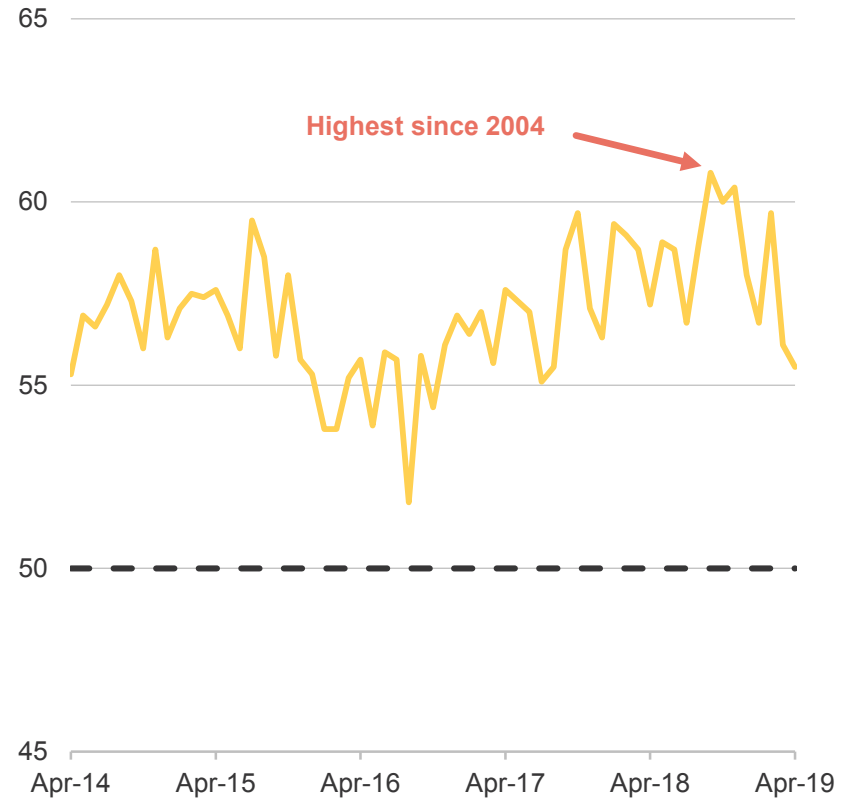


ISM Survey Indices Fall From Recent Strong Levels

ISM Manufacturing



ISM Non-Manufacturing

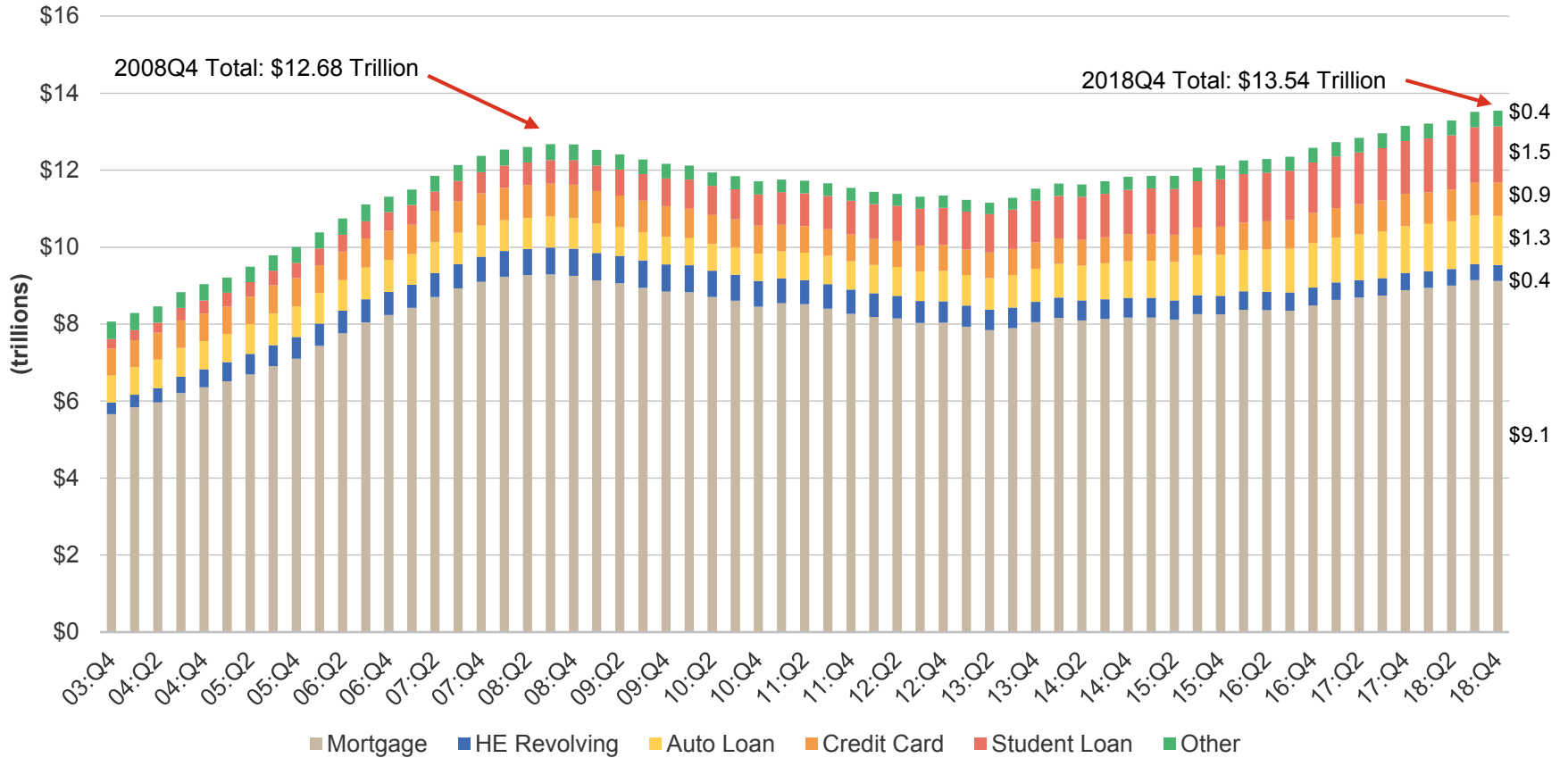


Source: Bloomberg, as of 04/30/19.



Consumer Debt Hits New Peak

Total Household Debt

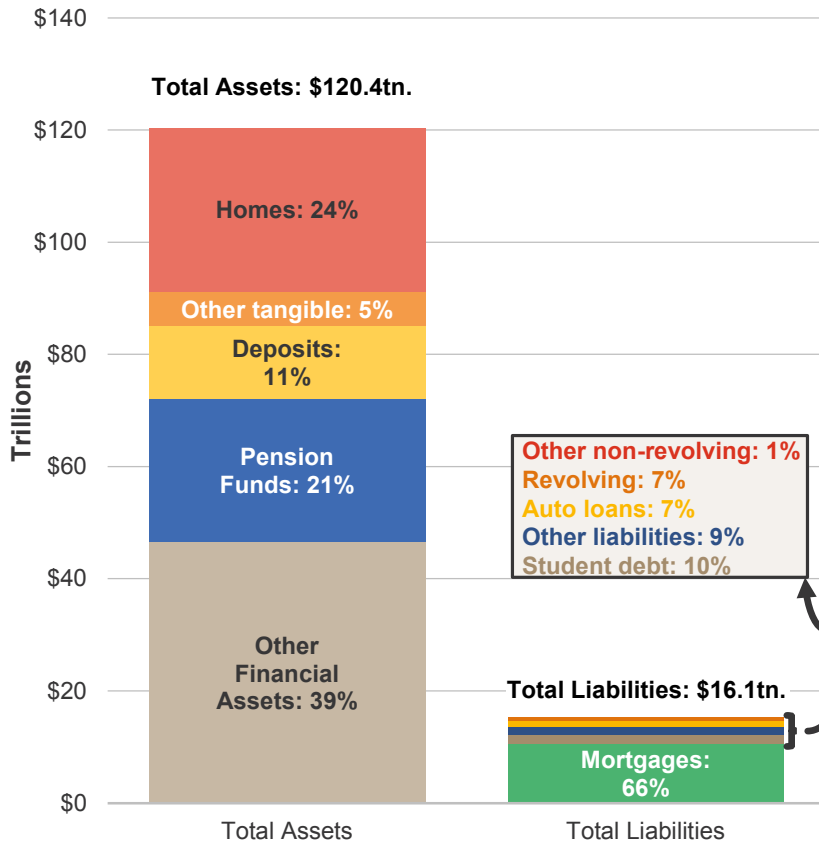


Source: Federal Reserve Bank of New York Consumer Credit Panel/Equifax, as of Q4 2018

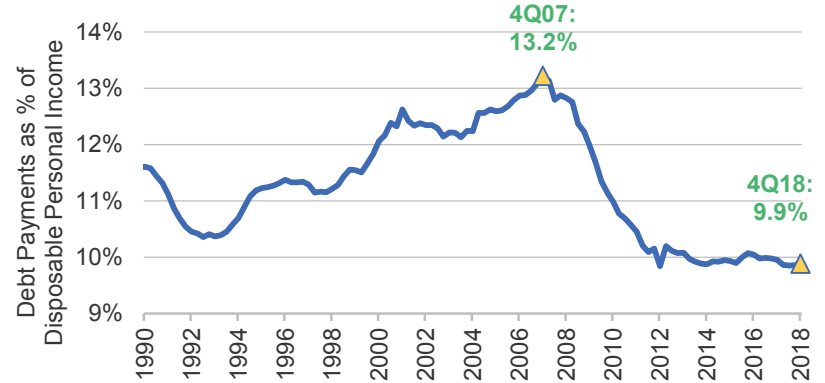


American Consumer Finances Are Strong

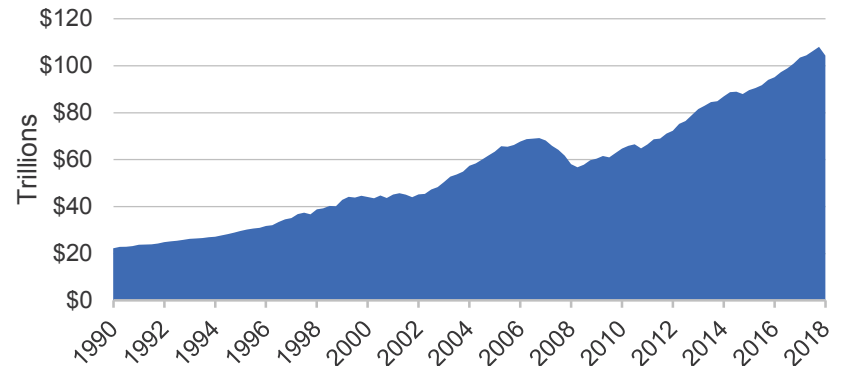
Consumer Balance Sheet - 4Q18



Household Debt Service Ratio



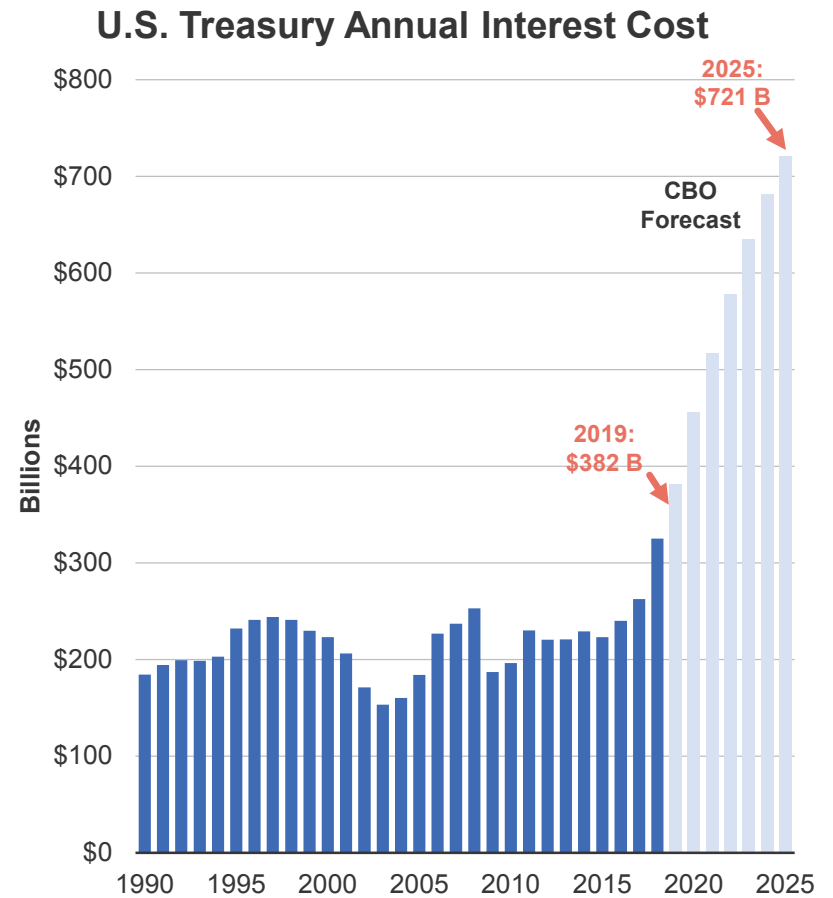
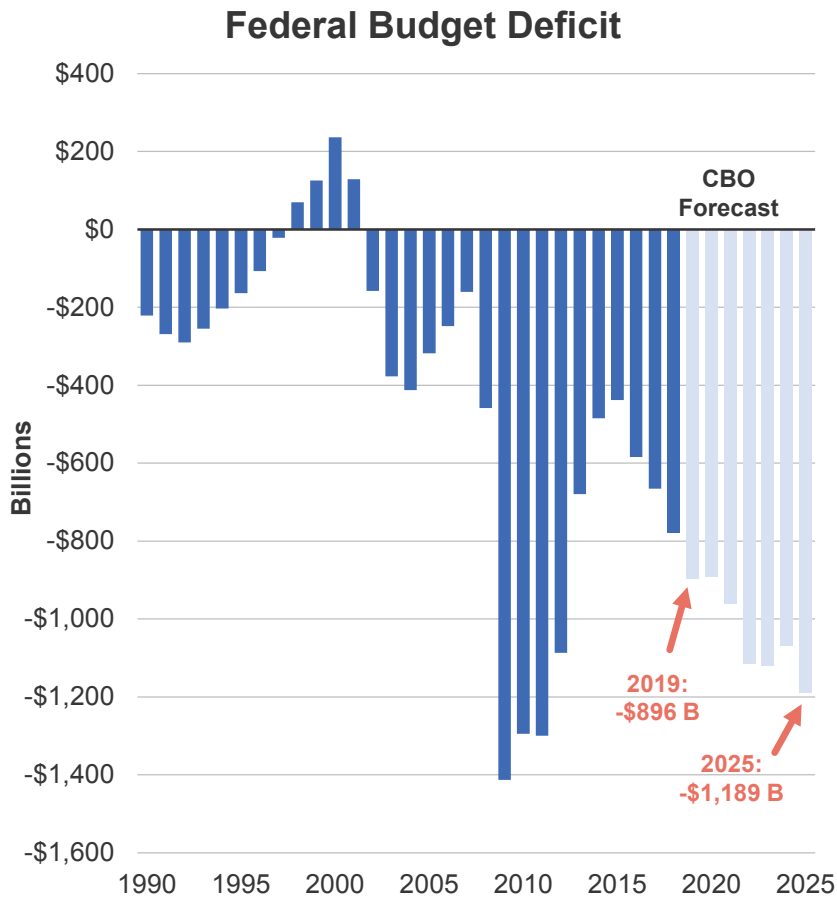
Household Net Worth



Source: Bloomberg, and Federal Reserve's Financial Accounts of the United States - Z.1 (2018:Q4). Consumer balance sheet includes households and nonprofit organizations. Revolving credit includes overdraft plans on checking accounts and other loans without a fixed repayment schedule. All data, except the household debt service ratio is not seasonally adjusted.



U.S. Federal Budget Deficit And Interest Cost Projected To Soar



Sources: Bureau of Fiscal Service, Congressional Budget Office. Data as of May 2019.

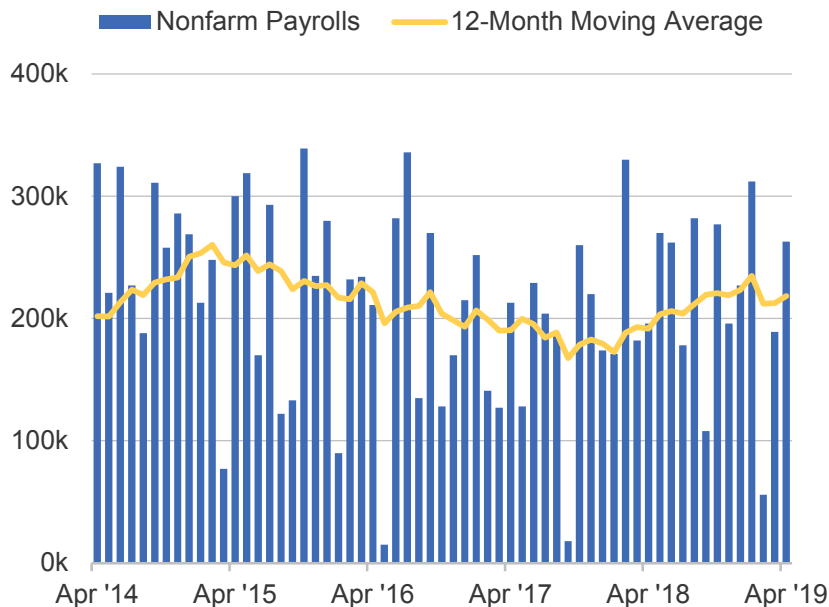


Archive

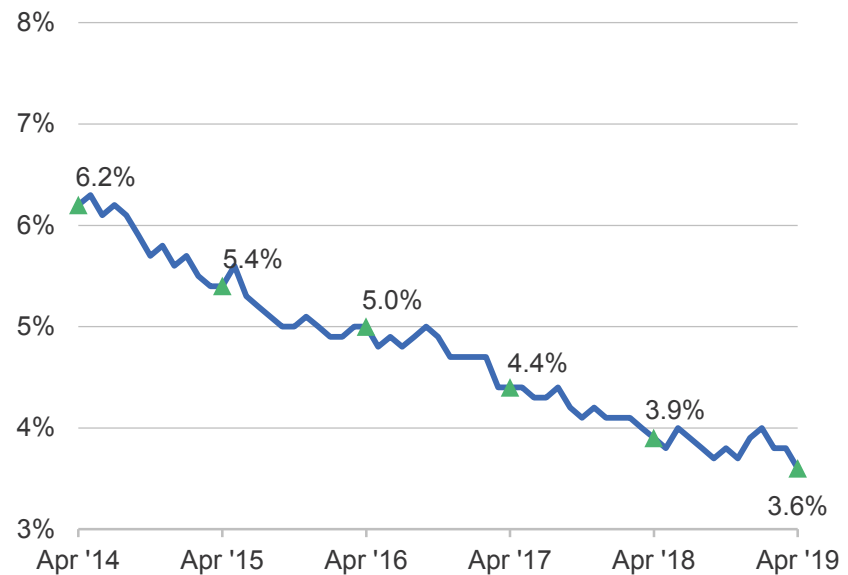
Unemployment Rate Drops to 49-Year Low in April

- The U.S. economy added 263,000 jobs in April, beating expectations of 190,000
 - The unemployment rate edged lower to from 3.8% in March to 3.6% in April.
 - Average hourly earnings YoY remained at 3.2% in April, still near cyclical highs.
- So far in 2019, job gains have averaged a solid 205,000.

Monthly Change in Nonfarm Payrolls



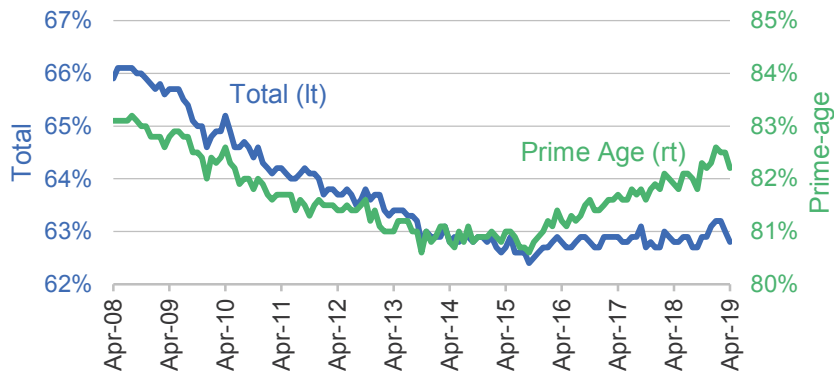
Unemployment Rate



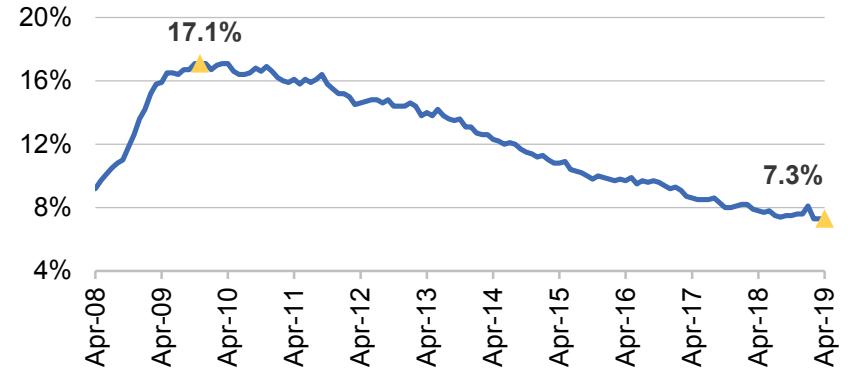
Source: Bloomberg, as of May 2019.

Employment Indicators

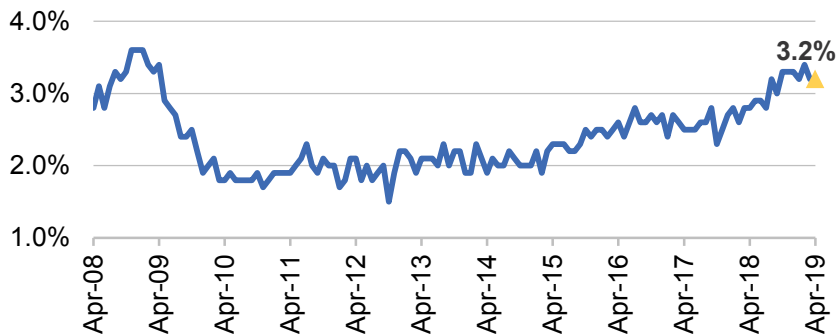
Labor Force Participation Rate



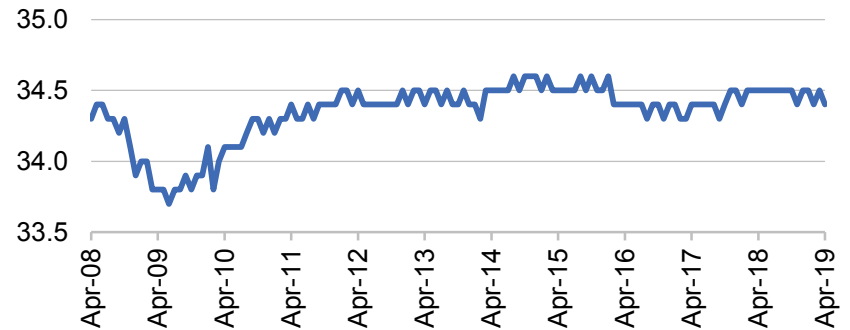
U-6 Underemployment Rate



Average Hourly Earnings (YoY %)



Total Private Sector Average Weekly Hours

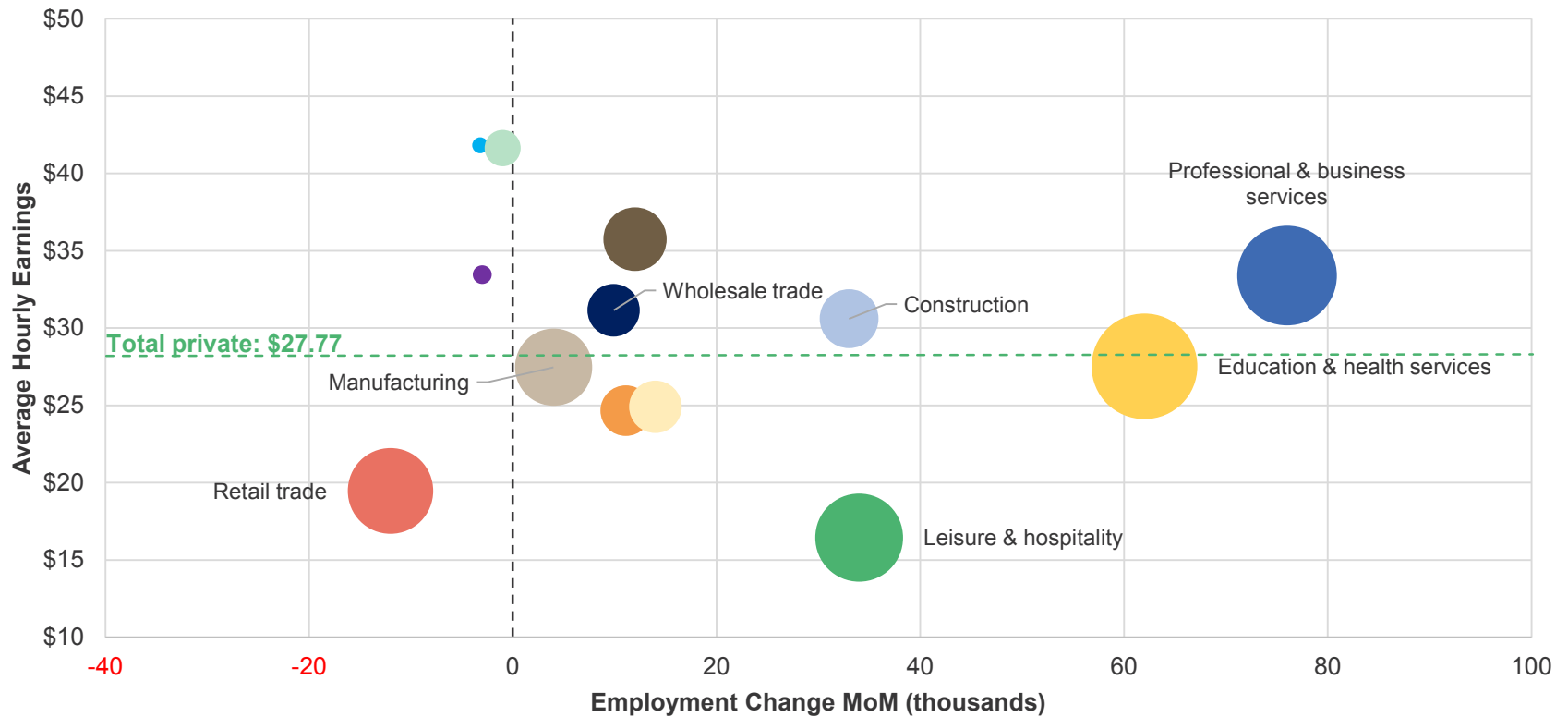


Source: Bloomberg, most recent data as of May 2019. BLS defines "prime-age" as individuals ranging from 25 – 54 years of age.



Employment and Average Hourly Earnings By Industry

- Natural Resources & Mining
- Wholesale trade
- Utilities
- Professional & business services
- Other services
- Construction
- Retail trade
- Information
- Education & health services
- Manufacturing
- Transportation and warehousing
- Financial and Insurance
- Leisure & hospitality



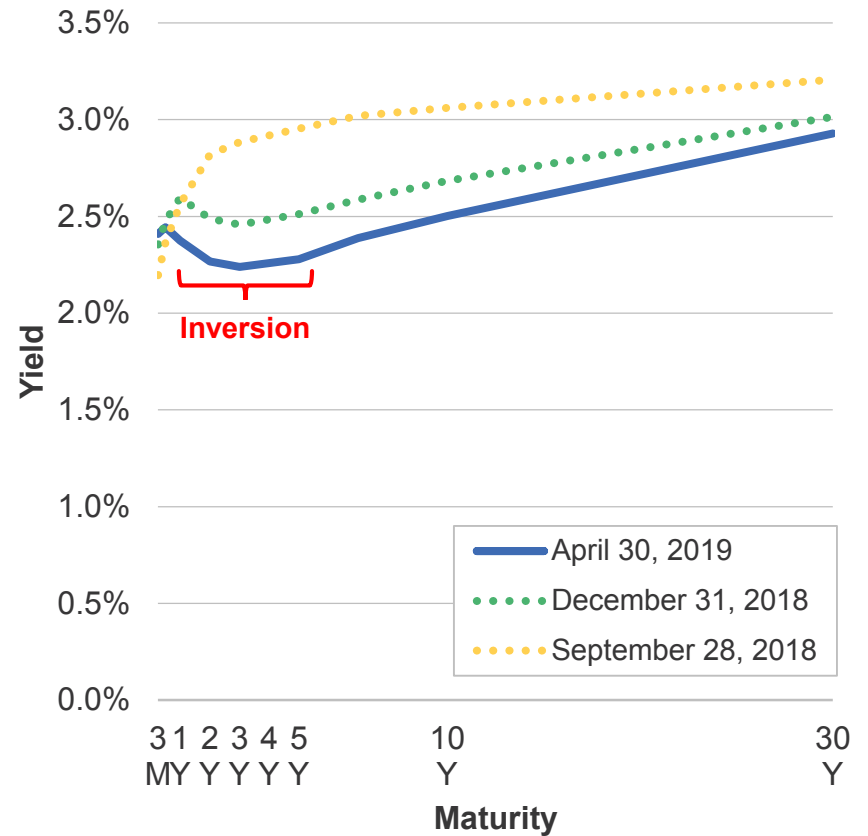
Source: Bloomberg, as of 04/30/2019. Employment and average hourly earnings by industry, seasonally adjusted. Bubble size represents employment level in thousands.



Yield Curve Remains Partially Inverted

Tenor	04/30/19	Year-End 12/31/18	Year-End 09/28/2018
3 month	2.41%	2.35%	2.20%
1 year	2.37%	2.60%	2.56%
2 year	2.27%	2.49%	2.82%
3 year	2.24%	2.46%	2.88%
5 year	2.28%	2.51%	2.95%
10 year	2.50%	2.68%	3.06%
30 year	2.93%	3.01%	3.21%

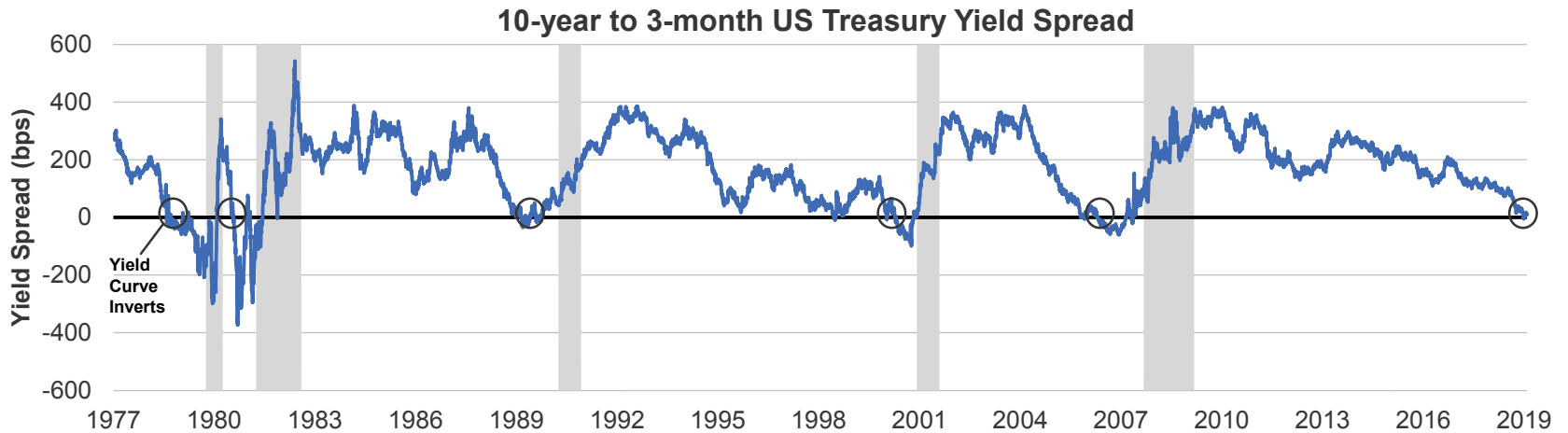
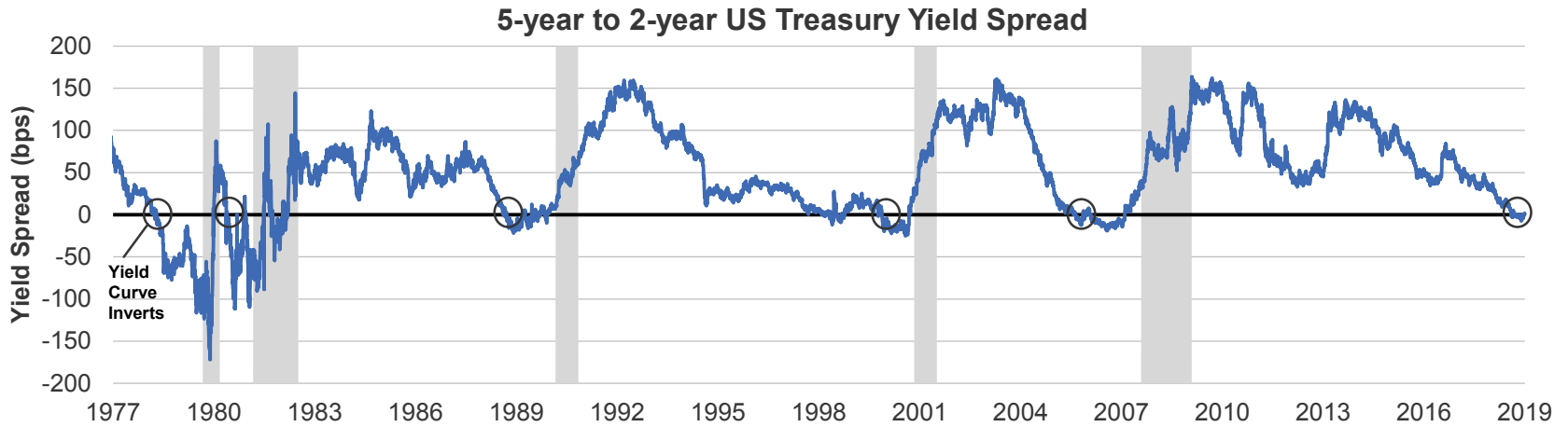
U.S. Treasury Yield Curve



Source: Bloomberg, as of 04/30/19.



Yield Curve Inversions Historically Precede Recessions

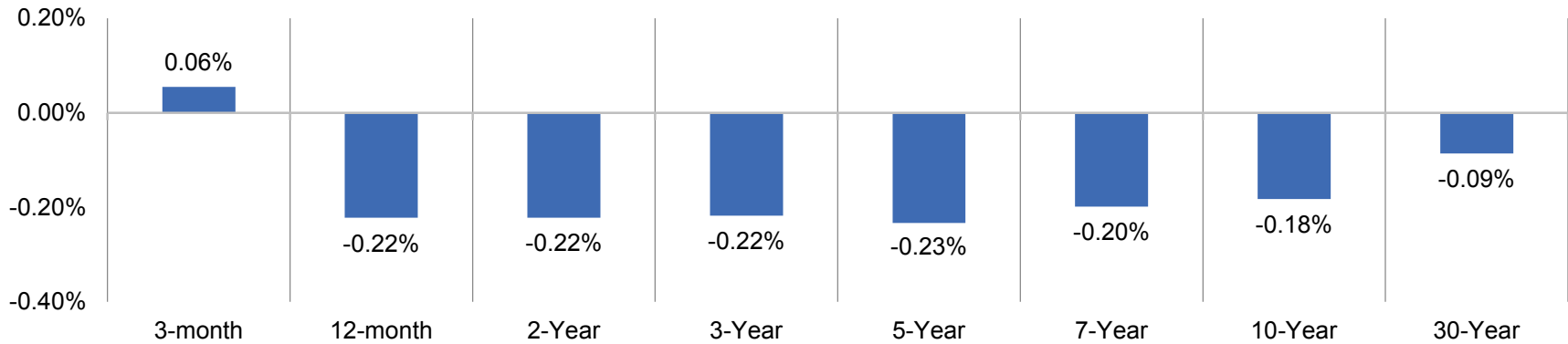


Source: Bloomberg, as of 04/30/2019.

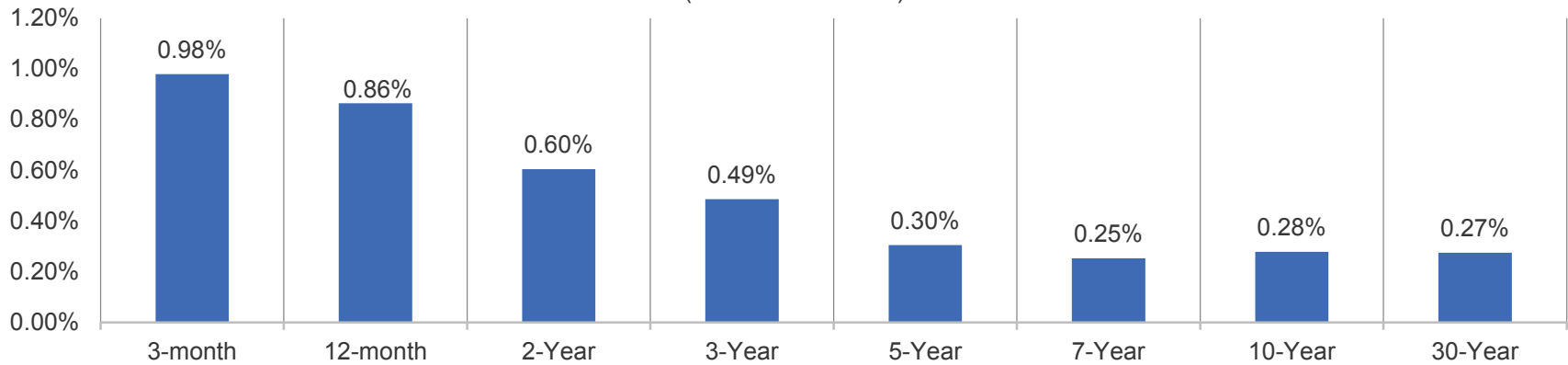


Yields Fall So Far in 2019

U.S. Treasury Yields
2019 YTD Change
(12/31/18-04/30/19)



2018 Change
(12/31/17- 12/31/18)



Source: Bloomberg, as of 04/30/19.



The Fed's Latest (March) Economic Projections Less Optimistic

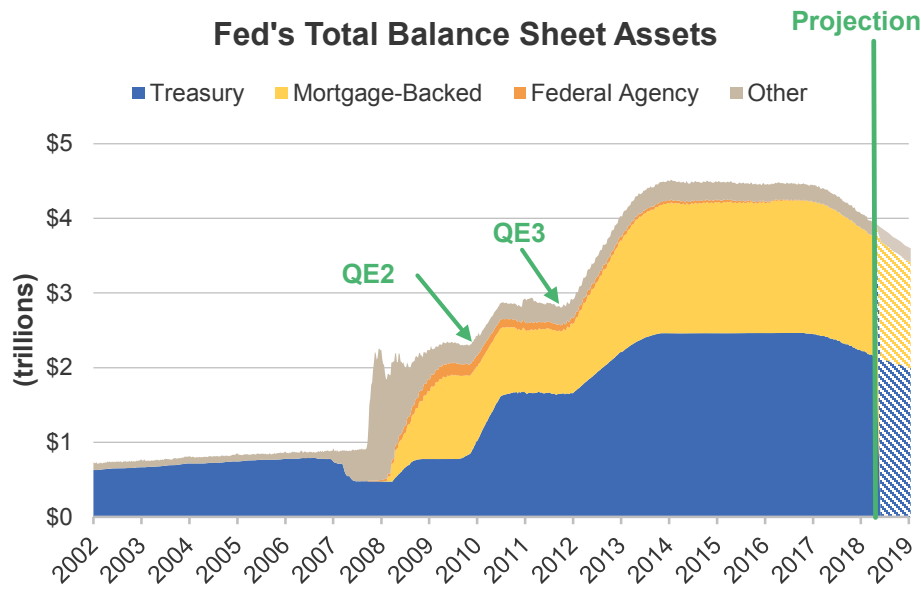
Indicator	2019		2020		2021		Longer run	
	Dec.	Mar.	Dec.	Mar.	Dec.	Mar.	Dec.	Mar.
Real GDP (YoY)	2.3%	2.1%	2.0%	1.9%	1.8%	1.8%	1.9%	1.9%
Unemployment Rate	3.5%	3.7%	3.6%	3.8%	3.8%	3.9%	4.4%	4.3%
PCE Inflation (YoY)	1.9%	1.8%	2.1%	2.0%	2.1%	2.0%	2.0%	2.0%
Core PCE (YoY)	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	-	-
Federal Funds Rate (Median)	2.9%	2.4%	3.1%	2.6%	3.1%	2.6%	2.8%	2.8%

Source: Federal Reserve, as of March 2019. Green denotes an improved projection in March compared to December, red for lower projection.



Fed's Balance Sheet Normalization Plan

- The Fed has been reducing their balance sheet by about \$50 billion per month by letting existing holdings of Treasuries and agency MBS roll off.
- Starting in May, the Fed will reduce that amount by \$15 billion, concluding the reduction of the holdings in the System Open Market Account (SOMA) at the end of September 2019.
- After that, it will shift, in part, reinvestment from principal payments on agency MBS into Treasuries but keep the overall balance sheet size stable.



(in billion)	Treasury Holdings	MBS Holdings	Total Fed Assets
Dec 2017 (Peak)	\$2,454	\$1,765	\$4,449
Apr 2019	\$2,154	\$1,583	\$3,928
Dec 2019 (Projected)	\$1,997	\$1,423*	\$3,611
Difference: 3/19-12/19	\$(157)	\$(160)*	\$(317)

*MBS projection assumes that principal payments will always exceed the cap over the horizon period (i.e. the monthly run off amount is equal to the cap). The calculated difference equals projected value minus current standing.

Source: PFM, Bloomberg, The Federal Reserve, FRB of St. Louis, as of 04/24/19. Projection is based on maturity schedule of Fed's Treasury holdings and caps on reinvestments as described in FOMC's June 2017 addendum to the Policy Normalization Principles and Plans. Dec 2017 refers to peak before normalization.

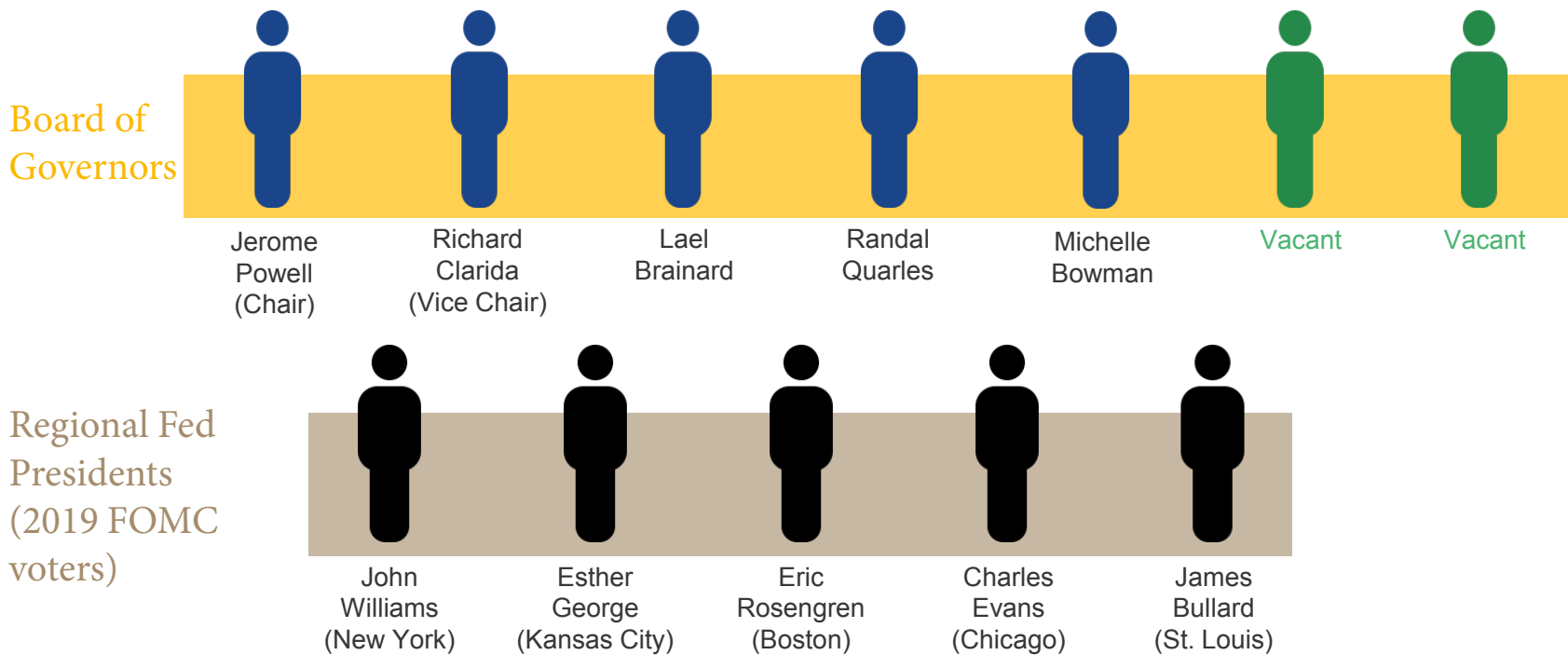


Fed Balance Sheet Normalization

- During the March meeting, the Fed also announced changes to their ongoing balance sheet reduction measures, which have been part of their monetary policy normalization plan since 2017
 - The Fed has been reducing their balance sheet by about \$50 billion per month by letting existing holdings of Treasuries and agency MBS roll off
 - Starting in May, the Fed will reduce that amount by \$15 billion, concluding the reduction of the holdings in the System Open Market Account (SOMA) at the end of September 2019
- After that, it will shift, in part, reinvestment from principal payments on agency MBS into Treasuries but keep the overall balance sheet size stable



The Federal Reserve Board and Federal Open Market Committee (FOMC)

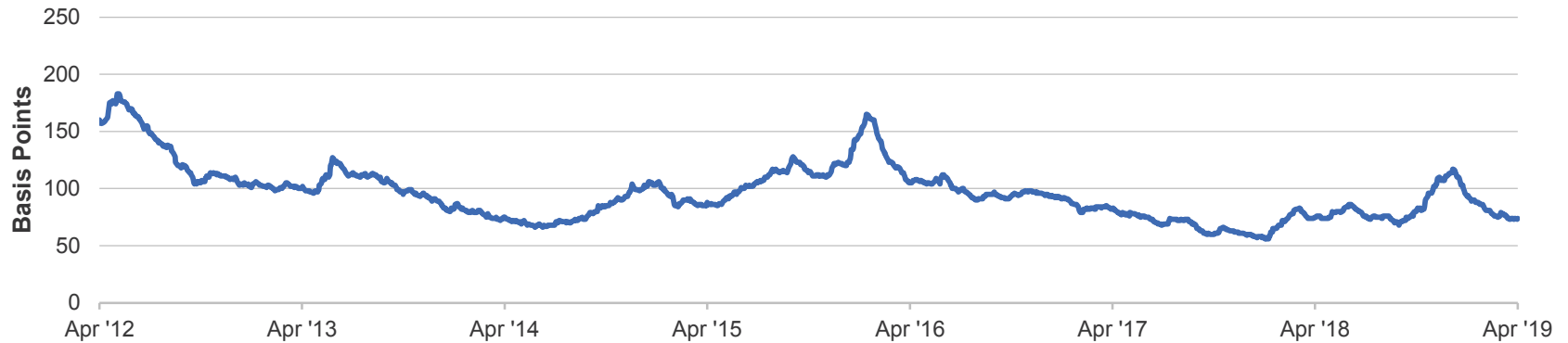


Source: The Federal Reserve.



Credit Spreads Narrow and Remain Low by Historical Standards

Yield Spread (OAS) of 1-5 Year Investment Grade Corporate Index



Yield Spread (OAS) of 0-5 Year AAA Asset-Backed Securities Index

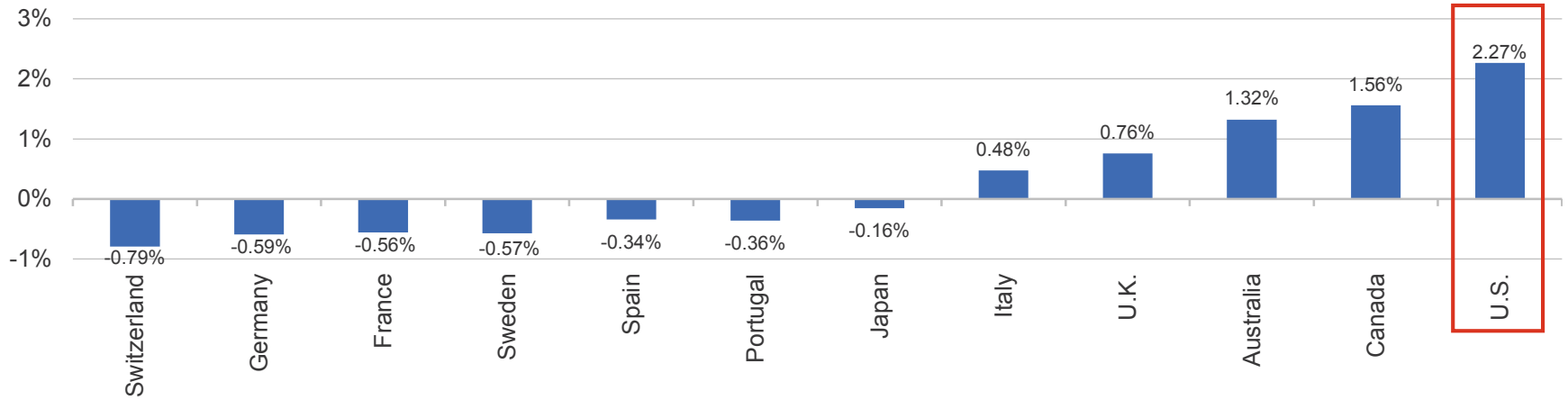


Source: Bloomberg, ICE BofAML Indices. OAS is option adjusted spread. As of 04/30/19.

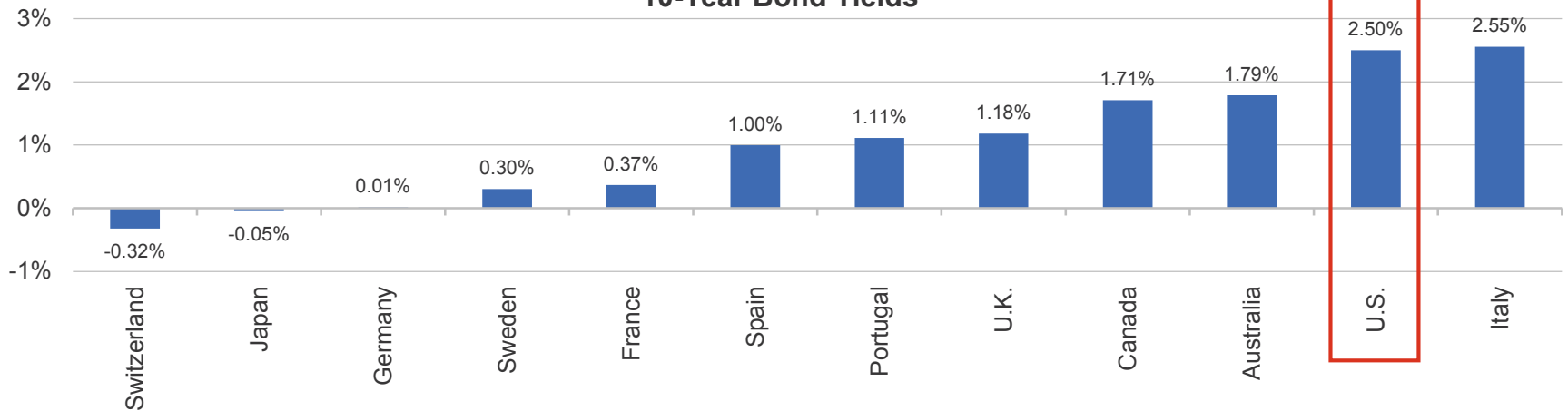


Global Interest Rates Remain Low

2-Year Bond Yields



10-Year Bond Yields

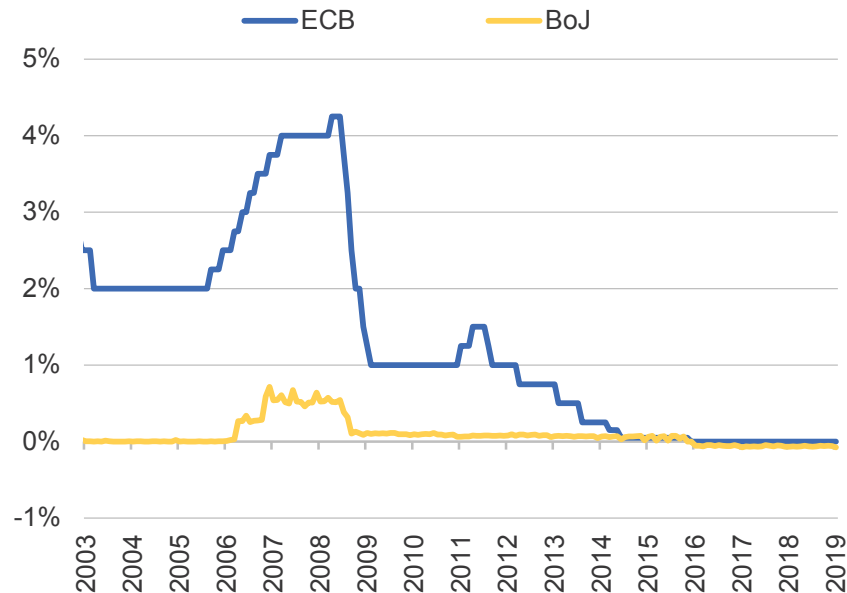


Source: Bloomberg, as of 04/30/19.

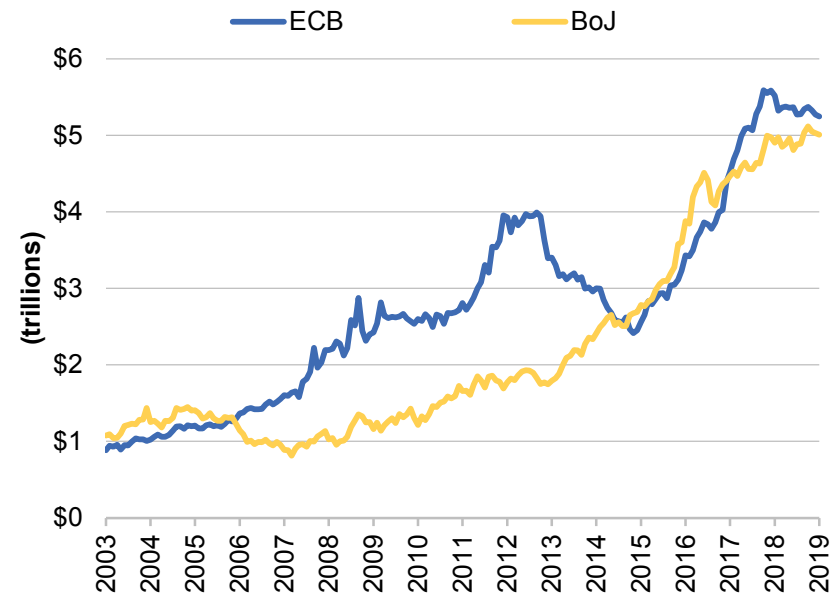
Global Central Bank Policies Remain Generally Accommodative

- The European Central Bank (ECB) sees rates “at their present levels at least through the end of 2019”. This extends the previous soft end date of summer and suggests that monetary policy will remain loose for that much longer.
- The Bank of Japan (BOJ) also kept its ultra-loose monetary policy unchanged with a target short-term rate of -0.1% and 10-year rate of 0%. While the monthly bond purchases were maintained, BOJ governor expressed willingness to extend the trading ranges to keep implementing the yield curve control policy. Sluggish inflation remains a major concerns with the BOJ cutting its forecast, indicating loose monetary conditions to persist for an extended period.

Central Bank Policy Rates



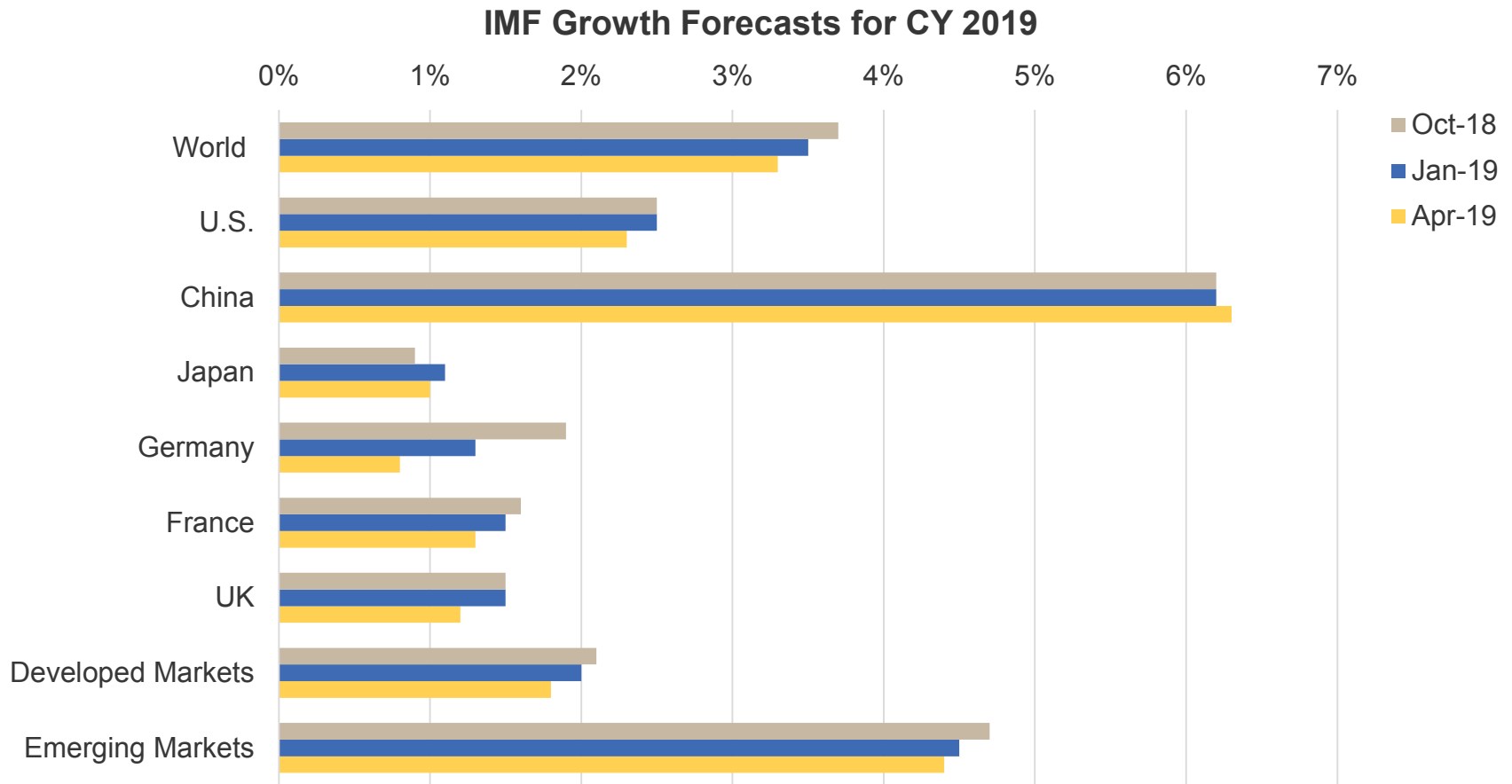
Central Bank Balance Sheet Assets



Source: Bloomberg, as of 04/30/19.



IMF Cuts Global Growth Forecasts Again



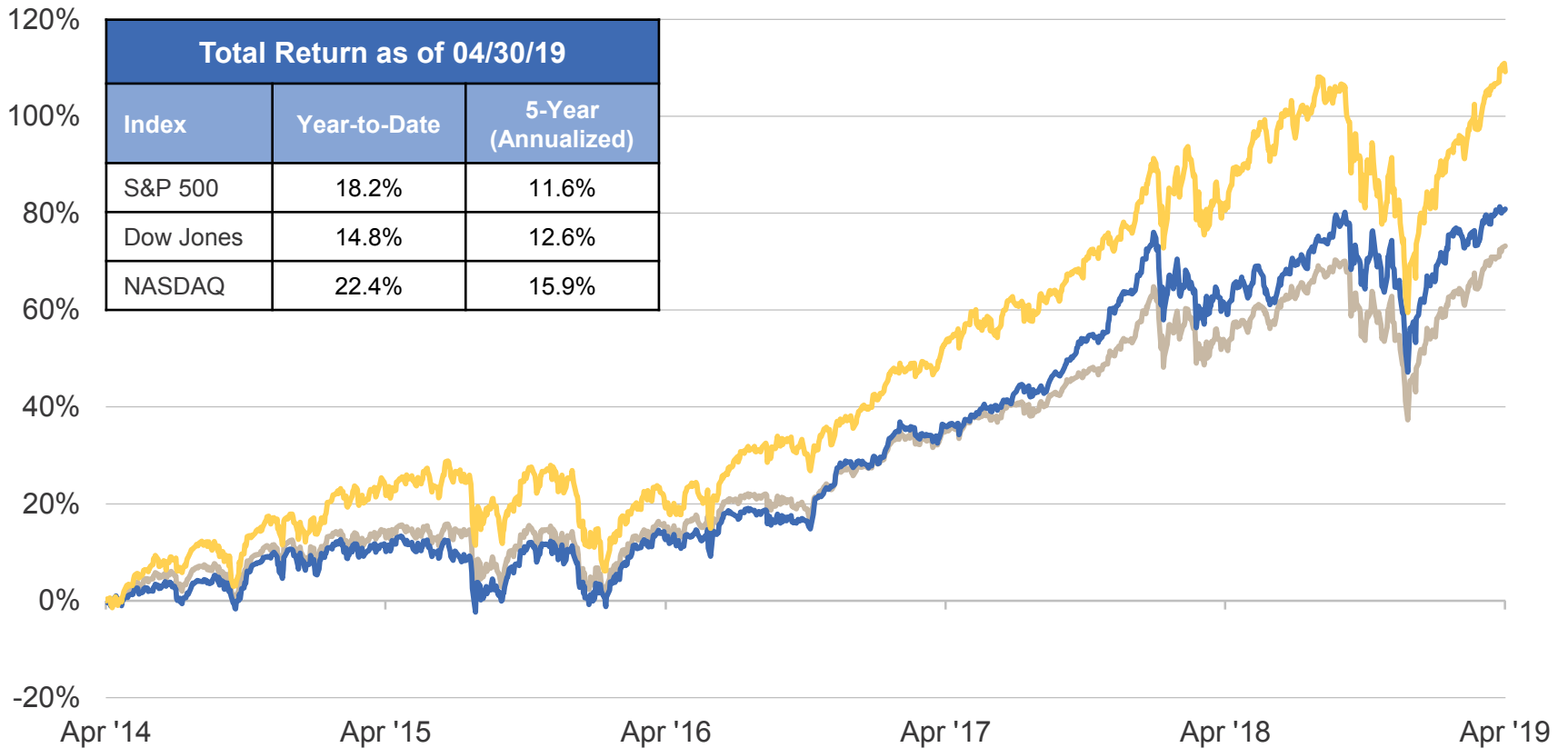
Source: IMF's World Economic Outlook (WEO) April 2019, January's Update, and WEO October 2018.



U.S. Equities Continue to Rebound

Cumulative 5-Year Total Return in Key U.S. Equity Indices

— S&P 500 — Dow Jones — NASDAQ

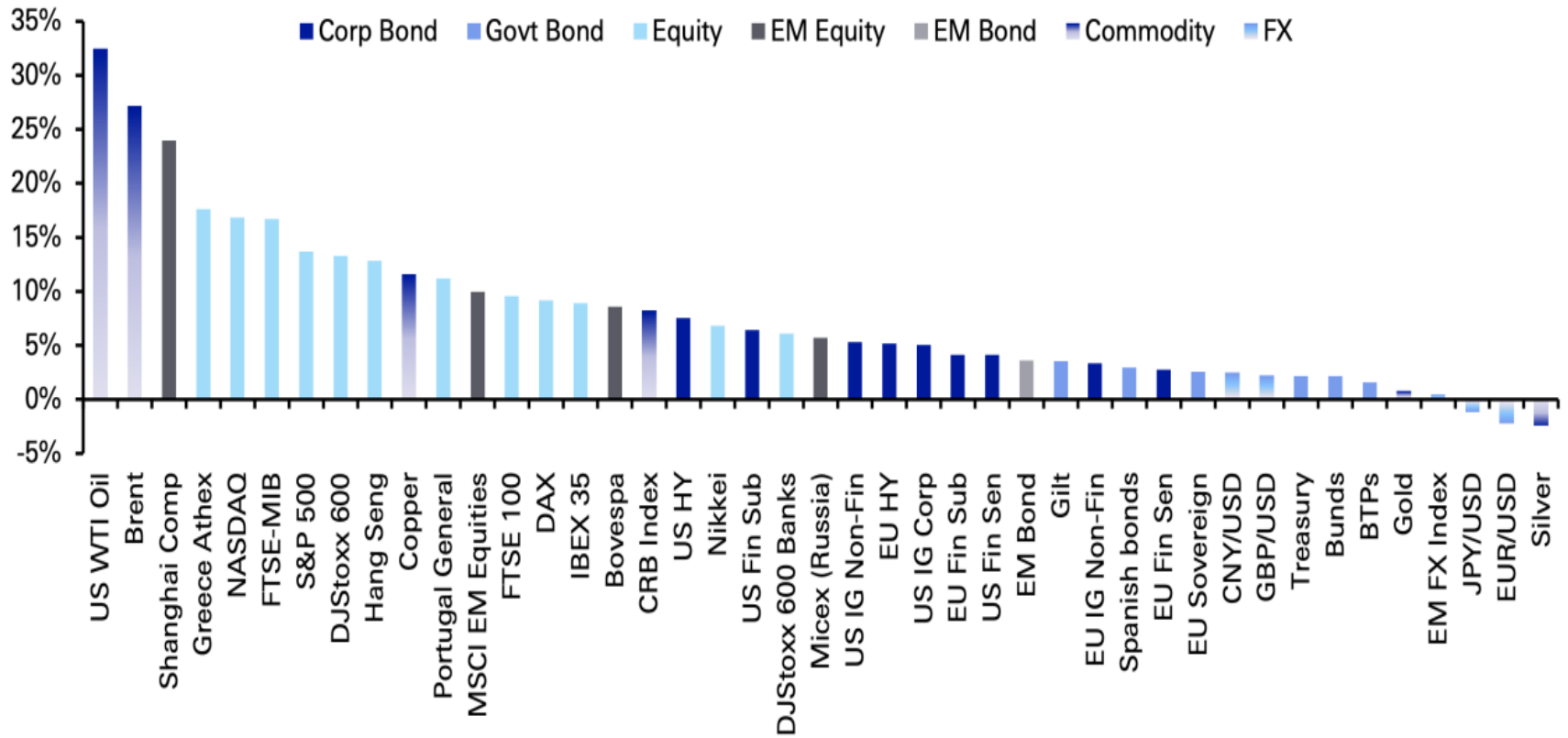


Source: Bloomberg, as of 04/30/19. Total Return is net of dividends.



Financial Markets Enjoy Strongest Start to the Year In Over a Decade

Figure 3: Total Return Performance of Major Global Financial Assets in Q1 (in Local Currency)

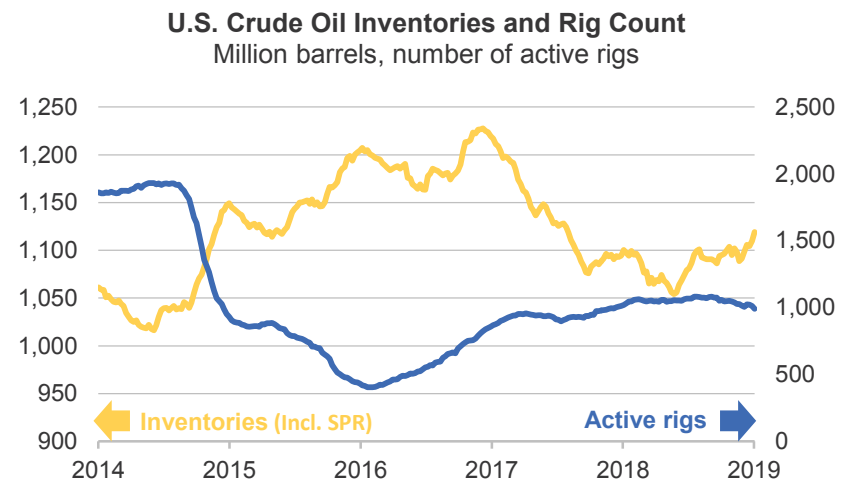
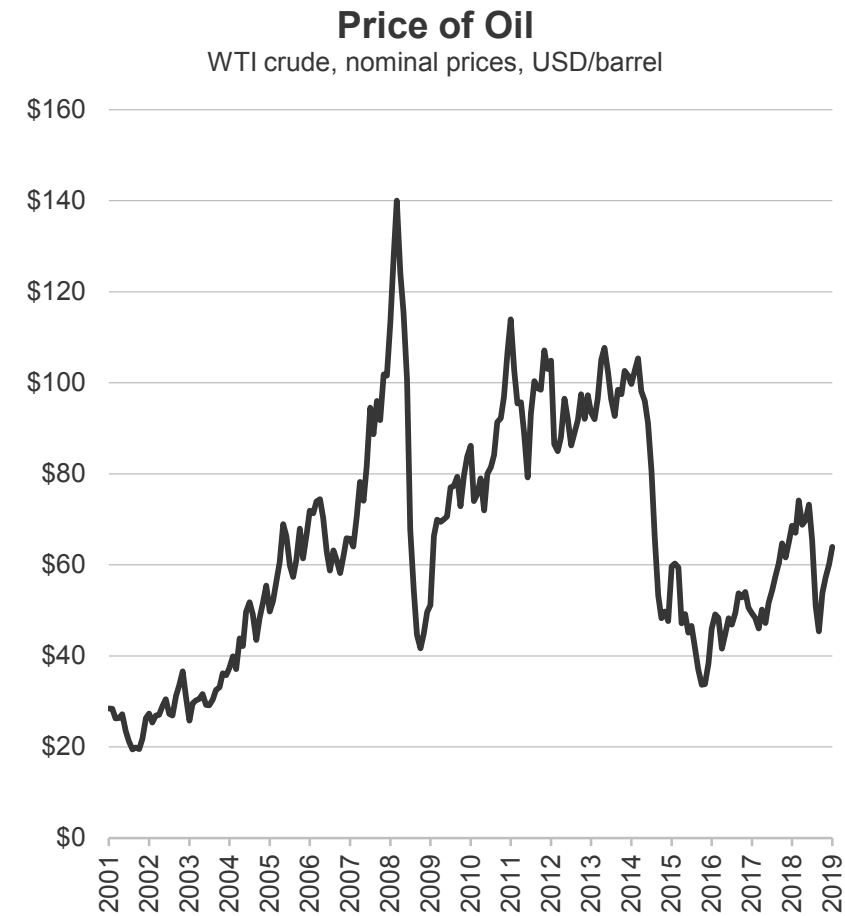


Source: Deutsche Bank, as of 3/31/19.



Oil Markets

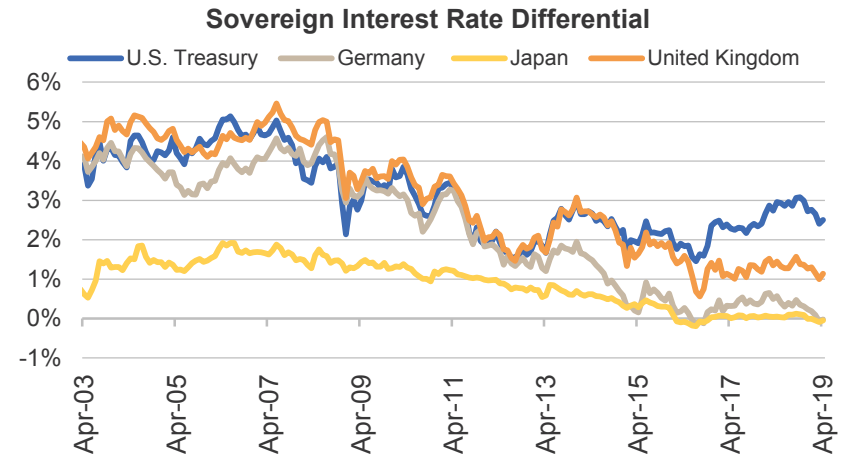
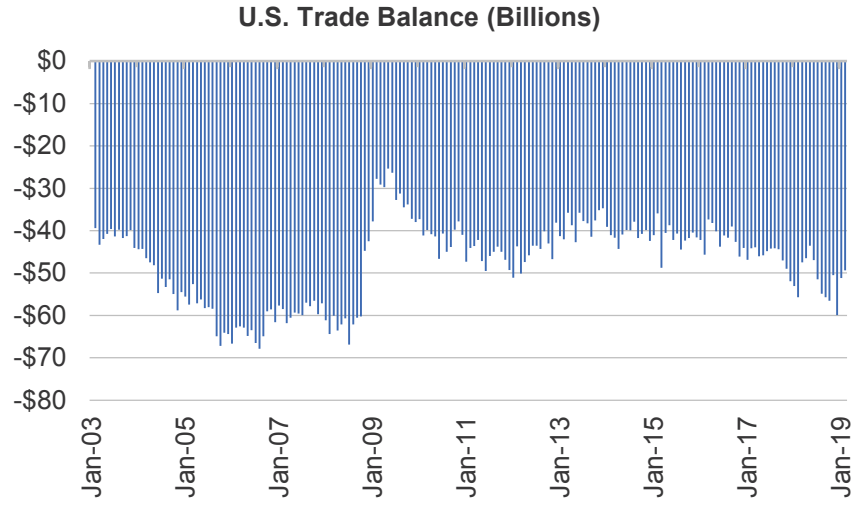
Production	2015	2016	2017	2018	2019*	Growth since '15
U.S.	15.1	14.8	15.7	17.9	19.8	29.8%
OPEC	36.4	37.4	37.3	37.3	35.9	2.4%
Global	97.0	97.4	98.0	100.5	101.6	5.1%
Consumption						
U.S.	19.5	19.7	20.0	20.4	20.8	7.6%
China	12.4	12.8	13.4	13.9	14.3	16.2%
Global	95.9	96.9	98.5	99.9	101.4	6.5%
Inventory	1.10	0.45	1.33	0.56	0.17	



*Forecasts are from the February 2019 EIA Short-Term Energy Outlook and start in 2019. U.S. crude oil inventories include the Strategic Petroleum Reserve. Active rig count includes both natural gas and oil rigs. WTI crude prices are monthly averages in USD using continuous contract NYM prices. Production and consumption denoted in million barrels per day. Data as of 04/30/2019.



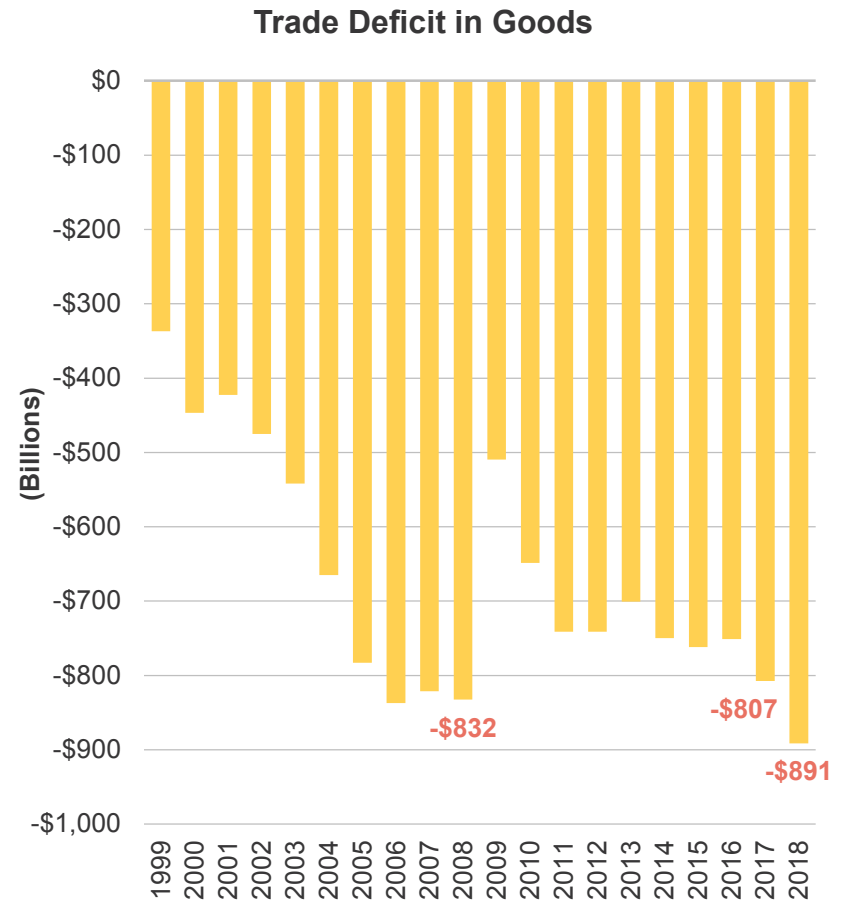
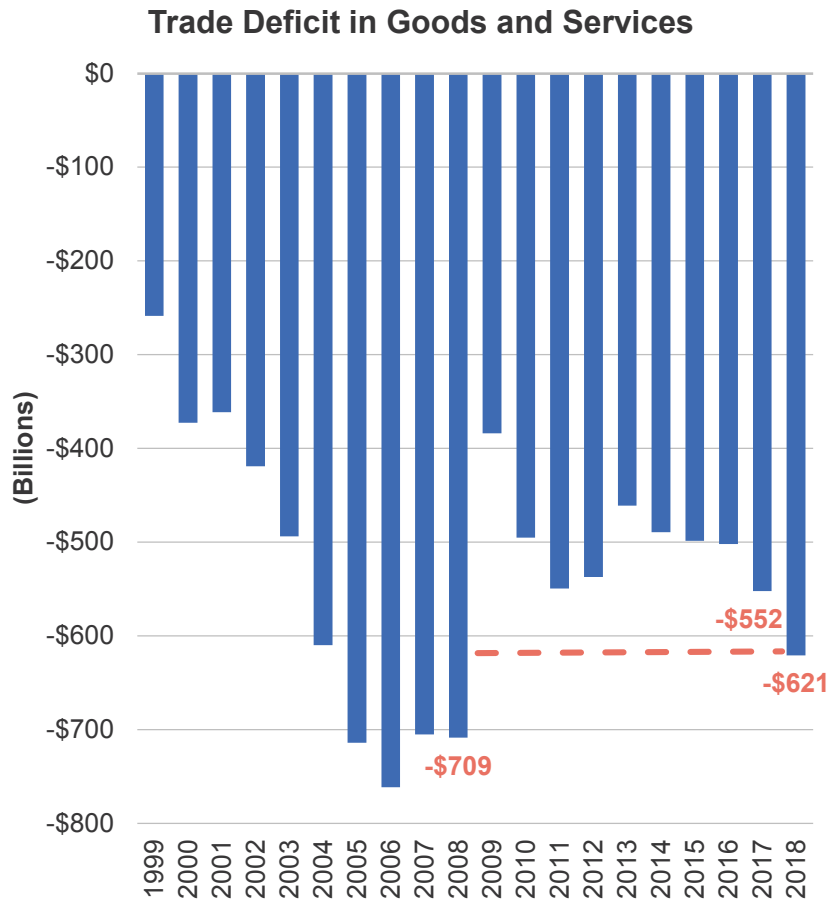
Factors Impacting the U.S. Dollar



Source: Bloomberg, as of 04/30/19.



2018 U.S. Trade Deficit Jumps To Its Highest Level In Ten Years



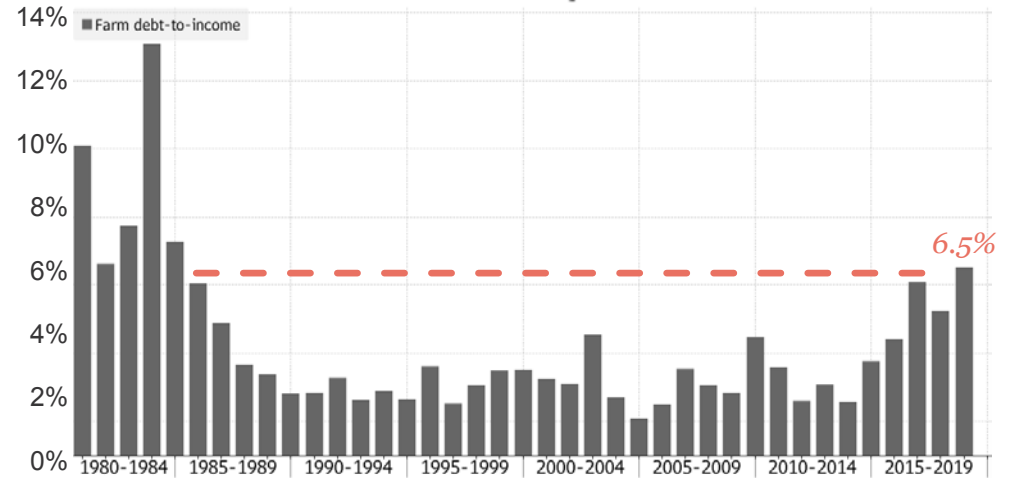
Source: Bloomberg, as of 01/31/19. The fiscal year ends September 30, 2019.



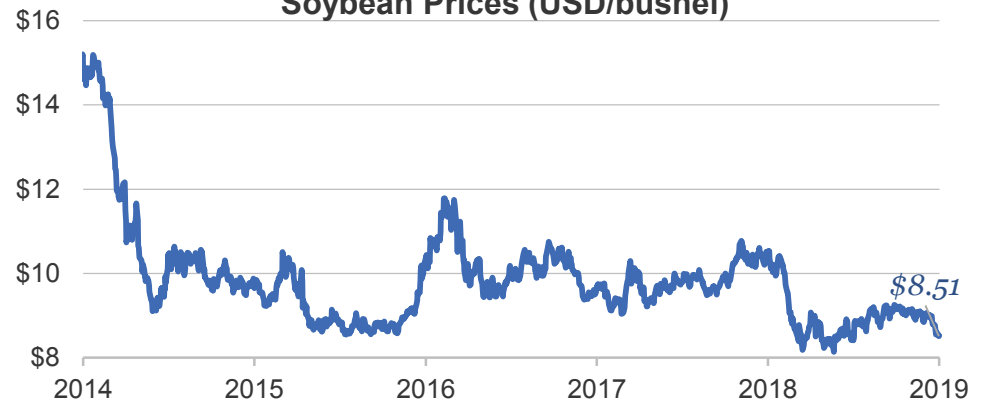
Agricultural Debt at Highest Level Since 1984

- Farmers are carrying the highest debt levels in over 30 years
- The trade war with China has hurt agricultural prices; soybean prices are approximately half of their 2012 prices
- In 2018, subsidies went into effect to ameliorate the negative consequences of the tariffs on farmers (soybean and hog exporters in particular); these subsidies are cut in the Administration's 2020 budget proposal

Farm Debt-to-Income Levels



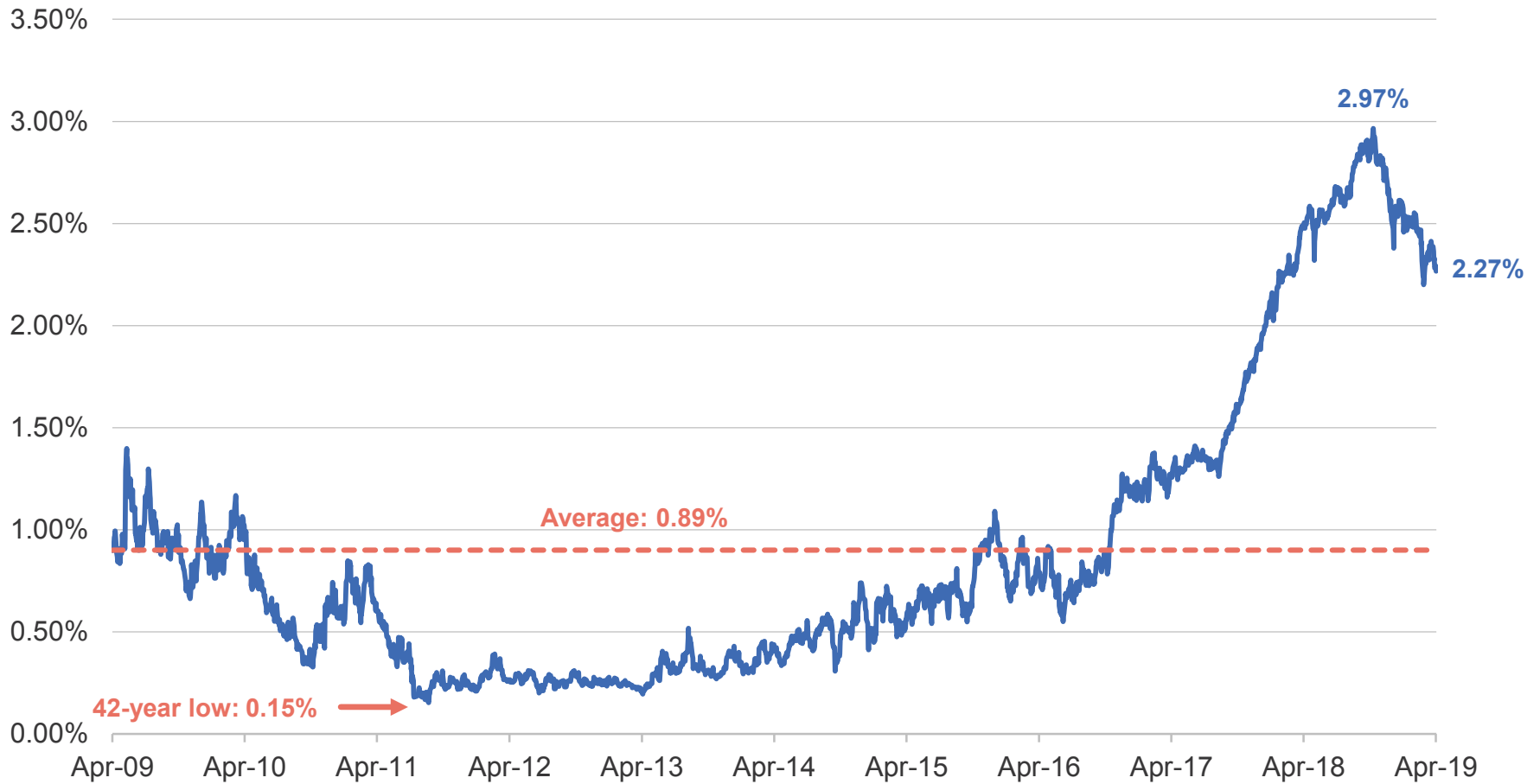
Soybean Prices (USD/bushel)



Source: Bloomberg, USDA, macrotrends.net.



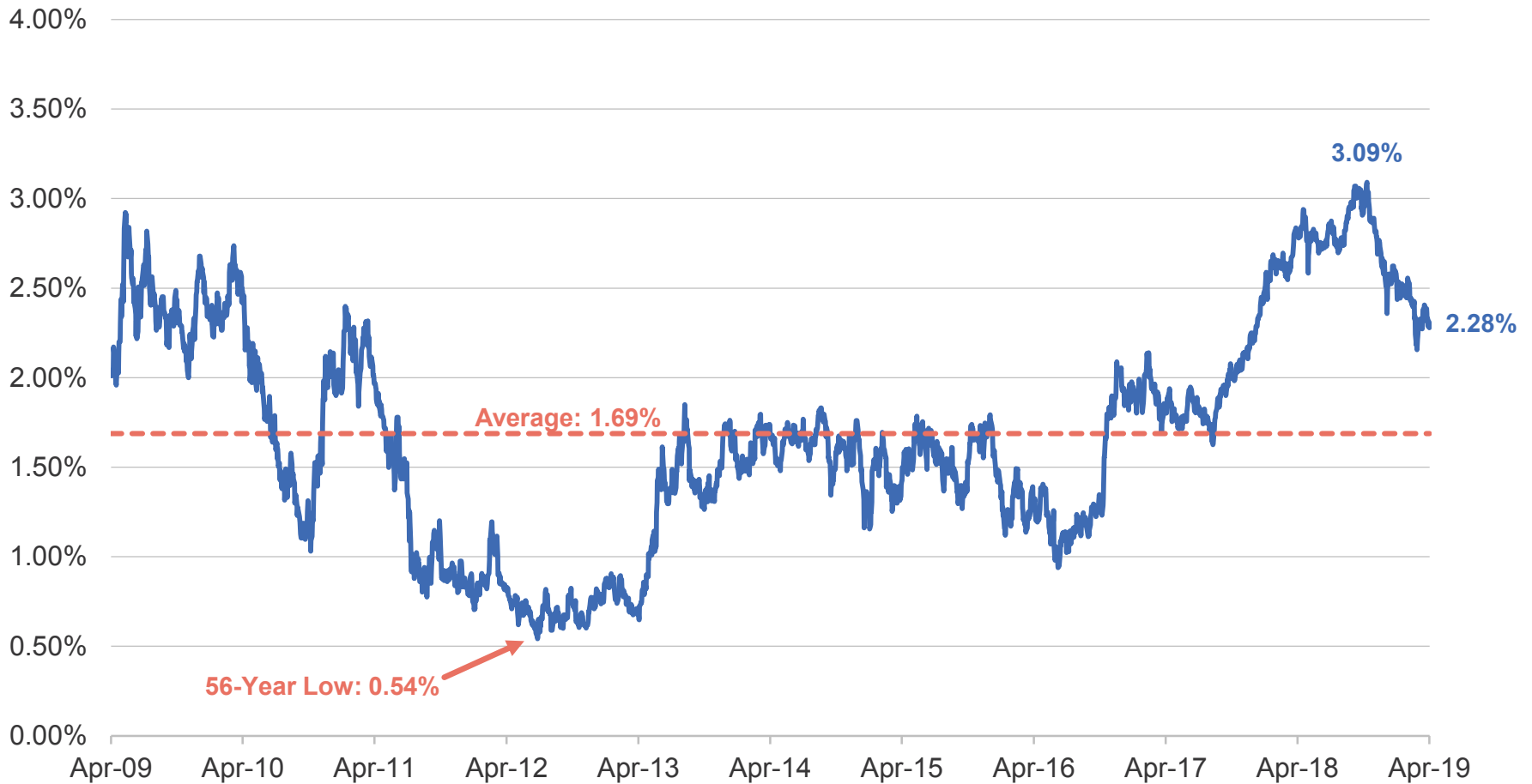
2-Year U.S. Treasury Yield



Source: Bloomberg, as of 04/30/19.



5-Year U.S. Treasury Yield



Source: Bloomberg, as of 04/30/19.



10-Year U.S. Treasury Yield



Source: Bloomberg, as of 04/30/19.



Key Inflation Indicators

Indicator	2016	2017	2018	Current YOY
PCE – Core	1.9%	1.6%	1.9%	1.6%
PCE – Aggregate	1.7%	1.8%	1.8%	1.5%
CPI – Core	2.2%	1.8%	2.2%	2.1%
CPI – Aggregate	2.1%	2.1%	1.9%	2.0%
PPI – Core	1.7%	2.2%	2.7%	2.4%
PPI – Aggregate	1.7%	2.5%	2.5%	2.2%
Gold	8.1%	13.5%	-1.6%	-2.4%
Crude Oil (WTI)	45.0%	12.5%	-24.8%	-6.8%
US\$ per Euro	-3.2%	14.1%	-4.5%	-7.1%
Avg. Hourly Earnings	2.7%	2.7%	3.3%	3.2%

Source: Bloomberg, most recent data as of May 2019. PCE, CPI,, PPI, hourly earnings, gold, oil, and euro are on a year-over-year basis.



1-3 Year Index Returns

April 30, 2019	Effective Duration	Yield	YTD	1 Month	3 Month	1 Year	3 Years	5 Years
U.S. Treasury	1.79	2.33%	1.19%	0.20%	0.92%	3.08%	1.05%	0.99%
Agency	1.61	2.34%	1.18%	0.21%	0.89%	3.15%	1.23%	1.12%
Non-callable	1.71	2.36%	1.19%	0.21%	0.90%	3.16%	1.19%	1.10%
Callable	1.20	2.24%	1.13%	0.21%	0.85%	3.10%	1.35%	1.21%
U.S. Treasury/Agency	1.78	2.33%	1.19%	0.20%	0.92%	3.09%	1.06%	1.00%
Corp A-AAA	1.82	2.76%	1.92%	0.27%	1.24%	3.91%	1.89%	1.73%
Corp AAA	1.98	2.52%	1.47%	0.22%	1.05%	3.42%	1.40%	1.38%
Corp AA	1.78	2.68%	1.78%	0.25%	1.14%	3.83%	1.74%	1.60%
Corp A	1.83	2.79%	1.99%	0.28%	1.28%	3.95%	1.95%	1.78%
Corp BBB	1.81	3.11%	2.54%	0.40%	1.78%	4.46%	2.60%	2.19%
Corp/Govt	1.80	2.49%	1.46%	0.24%	1.07%	3.40%	1.37%	1.25%
MBS 0 - 3	4.07	3.00%	1.86%	(0.33%)	1.09%	3.87%	1.63%	1.57%
ABS 0 - 3	1.11	2.69%	1.37%	0.28%	1.02%	3.24%	1.75%	1.45%
Corp/Govt/Mtge	1.81	2.49%	1.47%	0.24%	1.07%	3.41%	1.37%	1.26%
Supranationals	1.86	2.40%	1.30%	0.21%	1.02%	3.44%	1.34%	1.20%

Source: ICE BofAML Indices. Returns greater than one year are annualized.



1-5 Year Index Returns

April 30, 2019	Effective Duration	Yield	YTD	1 Month	3 Month	1 Year	3 Years	5 Years
U.S. Treasury	2.54	2.32%	1.38%	0.16%	1.05%	3.66%	1.02%	1.27%
Agency	1.91	2.31%	1.30%	0.19%	0.99%	3.45%	1.24%	1.33%
<i>Non-callable</i>	2.08	2.36%	1.32%	0.18%	1.01%	3.45%	1.21%	1.32%
<i>Callable</i>	1.30	2.13%	1.22%	0.19%	0.92%	3.44%	1.35%	1.37%
U.S. Treasury/Agency	2.52	2.32%	1.37%	0.16%	1.05%	3.66%	1.04%	1.27%
Corp A-AAA	2.56	2.84%	2.55%	0.27%	1.55%	4.64%	2.03%	2.12%
<i>Corp AAA</i>	2.75	2.56%	1.93%	0.21%	1.24%	4.25%	1.45%	1.77%
<i>Corp AA</i>	2.40	2.71%	2.18%	0.20%	1.29%	4.37%	1.81%	1.96%
<i>Corp A</i>	2.60	2.89%	2.68%	0.30%	1.64%	4.73%	2.11%	2.18%
<i>Corp BBB</i>	2.68	3.27%	3.58%	0.51%	2.41%	5.37%	2.99%	2.64%
Corp/Govt	2.55	2.54%	1.87%	0.23%	1.32%	4.08%	1.47%	1.60%
MBS 0 - 5	3.61	2.97%	1.94%	(0.01%)	1.21%	3.86%	1.37%	1.86%
ABS 0 - 5	1.34	2.71%	1.46%	0.29%	1.11%	3.43%	1.78%	1.56%
Corp/Govt/Mtge	2.69	2.60%	1.87%	0.20%	1.31%	4.06%	1.46%	1.64%
Supranationals	2.52	2.50%	1.71%	0.23%	1.30%	4.23%	1.52%	1.56%

Source: ICE BofAML Indices. Returns greater than one year are annualized.



World Equity Index Returns

April 30, 2019	Country	MTD	QTD	YTD	1 Month	3 Month	1 Year	3 Years	5 Years
Americas									
Dow Jones Industrial Average	United States	2.7%	2.7%	14.8%	2.7%	7.0%	12.6%	17.1%	12.6%
S&P 500 Index	United States	4.0%	4.0%	18.2%	4.0%	9.5%	13.5%	14.9%	11.6%
NASDAQ Composite Index	United States	4.8%	4.8%	22.4%	4.8%	11.5%	15.8%	20.6%	15.9%
Russell 2000 Index	United States	3.4%	3.4%	18.5%	3.4%	6.5%	4.6%	13.6%	8.6%
S&P/TSX Composite Index	Canada	2.9%	2.9%	18.8%	2.9%	5.4%	4.8%	6.7%	1.4%
BRAZIL IBOVESPA INDEX	Brazil	0.0%	0.0%	7.8%	0.0%	(8.4%)	(1.0%)	16.2%	1.2%
Europe									
Euro Stoxx 50 Pr	Europe Union	5.4%	5.4%	16.0%	5.4%	9.9%	(4.6%)	8.2%	1.2%
FTSE 100 INDEX	United Kingdom	2.7%	2.7%	14.6%	2.7%	7.4%	(2.3%)	6.2%	0.6%
CAC 40 INDEX	France	4.9%	4.9%	16.5%	4.9%	10.4%	(3.1%)	10.9%	3.4%
DAX INDEX	Germany	7.1%	7.1%	14.6%	7.1%	8.2%	(9.3%)	6.4%	0.8%
IBEX 35 INDEX	Spain	4.5%	4.5%	11.5%	4.5%	4.6%	(7.3%)	5.5%	(1.9%)
FTSE MIB INDEX	Italy	3.3%	3.3%	18.2%	3.3%	9.2%	(12.6%)	8.6%	(0.9%)
AEX-Index	Netherlands	5.0%	5.0%	16.4%	5.0%	9.1%	(1.3%)	12.2%	6.5%
OMX STOCKHOLM 30 INDEX	Sweden	6.6%	6.6%	15.5%	6.6%	8.4%	2.0%	5.3%	0.2%
SWISS MARKET INDEX	Switzerland	2.0%	2.0%	14.8%	2.0%	8.9%	10.0%	8.4%	3.2%
Asia / Pacific									
NIKKEI 225	Japan	4.2%	4.2%	11.1%	4.2%	5.5%	(1.1%)	11.2%	9.4%
HANG SENG INDEX	Hong Kong	2.3%	2.3%	15.2%	2.3%	6.7%	(0.2%)	15.9%	9.7%
S&P/ASX 200 INDEX	Australia	1.7%	1.7%	14.1%	1.7%	6.4%	4.6%	9.9%	3.3%

Source: Bloomberg. Returns greater than one year are annualized.



Disclosures

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