Loop Capital

Municipal Strategy Report

A Monthly Analytical Services Division Publication *June 2019*

Is Fed's "Pause" the One that "Refreshes"?

We believe that the economy will respond and return to its previous stronger growth mode in the next couple of months. The major threat continues to be trade. The most likely outcome on trade negotiations, however, is worse now than it was two months ago. An adverse trade outcome, or protracted negotiations, could tip the economy into slow growth mode. Our outlook hinges on the strength of the labor market, the health of the consumer balance sheet, and a reasonable outcome on trade that occurs sooner than later.

By Chris Mier, CFA | Strategist

A central debate recently has been the extent to which the recent slowing in the economy has been transitory or one that represents a downshift to a new slower trend rate of growth. The recent data suggests to us that the slowing has been transitory, and that stronger growth will resume in the second half of the year. Our view is guided by progress in reducing the inventory overhang and improvement in interest rate sensitive sectors (housing) that are being boosted by an 80 basis point decline in yields.

The economy continues to enjoy a very strong labor market, rising wages, and a well-positioned consumer with a strong balance sheet. Confidence surveys have begun to improve, the S&P 500 is 530 points above the December low (even after recent decline), interest rates are lower, and the fading memories of the government shutdown and poor winter weather contributes to the sense of relief.

The NFIB Survey in April struck a surprisingly stronger tone. The survey cited rising actual earnings changes, actual sales changes, actual price changes (admittedly small) and improving inventory conditions. This is a shot across the bow of the deceleration thesis. Furthermore, the Fed's pause has "refreshed", with a notable easing of financial conditions. The breadth of central bank accommodation, and recent favorable data from Germany, provide hope for a stabilizing European economy.

Notable concerns remain. The trade war has significant potential for economic damage. Business investment has slowed. Gas prices have sapped disposable personal income available for consumption. And then there is the escalating battle between the Administration and the Fed, with the central bank's independence hanging in the balance.

Recognizing these concerns, the strength of the labor market and the consumer's capacity to spend remain compelling arguments that there will be no recession in 2019. With inflation likely to rise modestly over the balance of the year, the Fed will be on hold for all of 2019 and 2020.

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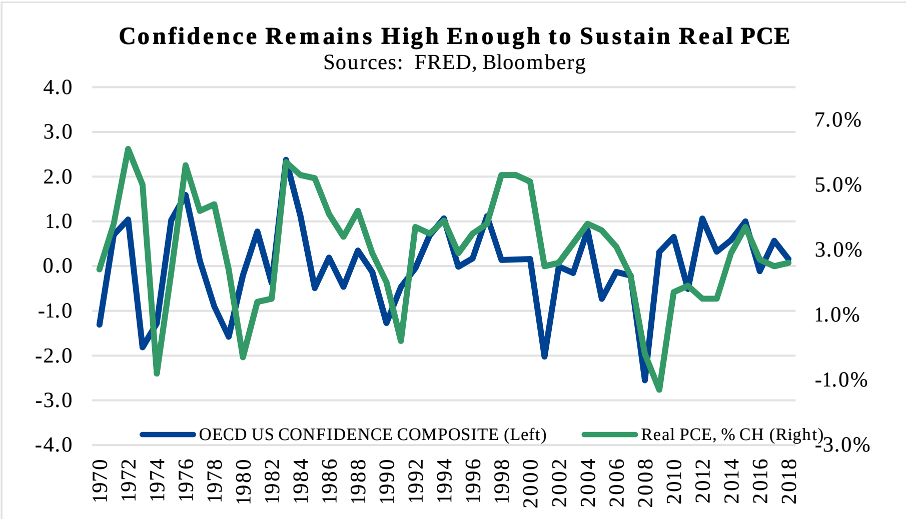
Is Fed's "Pause" the One that "Refreshes"?

Making the Case — No Fed, No Recession

1. Labor Market shows no sign of slowing. The Unemployment Rate is at 3.6%, its lowest level since December 1969. Initial Jobless Claims are at half-century lows as well, while job openings are close to record levels. Despite slowing manufacturing employment, unemployment will trend lower and pressure will continue to build for increased wages.



2. Wage increases evident in the Employment Cost Index, and minimum wage increases in many states, bode well for rising disposable income, confidence, and spending.
3. Consumer balance sheets remain extremely strong in terms of consumer debt to GDP ratio, debt service requirements relative to income, the savings rate and (still) high confidence.
4. Declining interest rates have boosted housing activity and should help autos in time.
5. Business Fixed Investment is slowing, but acceptable growth should continue through 2019.
6. Real Output Per Hour of All Persons rose to 3.6% in 1Q19 from 4Q15 low.
7. Financial conditions are more accommodative, and back to early October levels.
8. Fiscal policy still prividing some stimulus through much of 2019.

Conclusion

The escalating trade disputes, now on multiple fronts, have impacted financial markets. Tariff-related inflation has not spread to non-trade sectors, however. Simulations run by Bloomberg estimate an escalation could reduce US GDP by 0.4% by mid-2021, absent a Fed response. No provision for changes in supply chains and adjustments to consumer preferences are made in the model, though. We rest our hopes on a stronger 2H19 solidly on the consumer balance sheet fundamentals and on the strength of the labor market. These two factors alone should be sufficient to offset adverse movements in investment spending and deliver growth of around 2.5% for all of 2019. Additionally, state government spending should provide an additional kick to GDP, albeit relatively small. Finally, affordability and low mortgage rates are supportive of an improvement in housing market conditions. The Fed's pause, we believe, will refresh.

The slogan, "The Pause that Refreshes" was a popular marketing slogan for Coca-Cola in various forms beginning in 1924 and extending to 1947. That exact configuration of the slogan was used in 1929.

Economic and Interest Rate Forecast — June 2019

Factors Supportive of Lower Rates

US retail sales fell 0.2% in April as consumers cut back spending on cars, appliances and clothing.

Durable goods orders fell 2.1% in April, the most in 6 months, driven by a decline in the transportation sector, partially caused by Boeing's widely publicized problems.

Purchasing managers index dropped 2 points to 50.6 in May, its lowest level since September 2009, as trade issues eroded business confidence.

Industrial production fell 0.5% in April due to stockpiles of unsold merchandise, while capacity utilization declined.

The threat of tariffs on Mexican exports to the U.S., along with escalating U.S.—China trade dispute, have disrupted financial markets as investors brace for economic consequences.

Factors Supportive of Higher Rates

Despite disappointing May nonfarm payrolls of 75K, the job market remains solid, with unemployment at a 50-yr low and plenty of job openings.

The University of Michigan economic indicator unexpectedly rose 5 points to 102.4 in May, its 15-year high.

Personal income and spending exceeded expectations in April, increasing by 0.5% and 0.3%, respectively, indicating that U.S. households continue to spend at comfortable pace.

Congressional leaders and White House officials are negotiating a spending cap and debt limit agreements to avoid a $125 billion cut in fiscal 2020 discretionary spending from current levels due to sequestration.

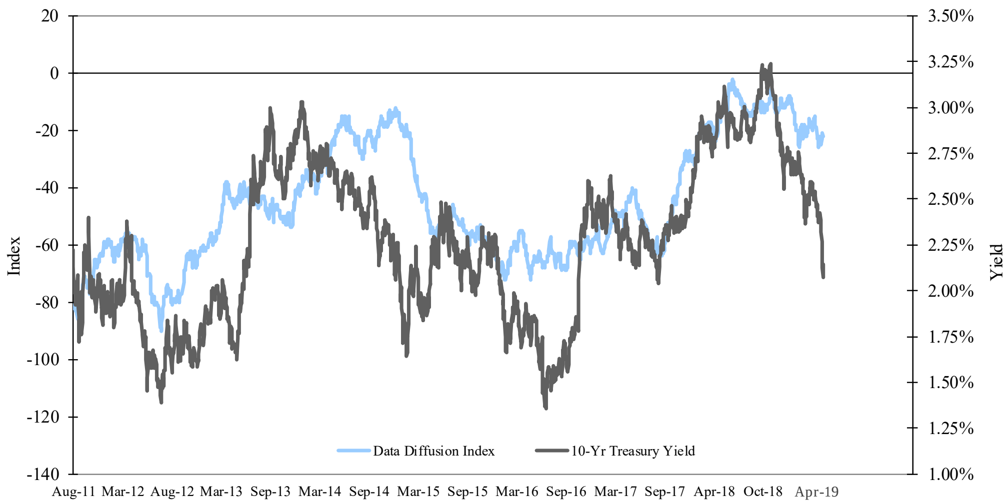
Figure 1 **Economic and Interest Rate Forecast — June 2019** ***No Fed Through 2020***

	3Q'17	4Q'17	1Q'18	2Q'18	3Q'18	4Q'18	1Q'19	2Q'19	3Q'19	4Q'19	1Q'20	2Q'20	3Q'20	4Q'20	Avg'17	Avg'18	Avg'19	Avg'20
Economic Forecasts																		
Real GDP	2.8	2.3	2.2	4.2	3.4	2.2	3.2	2.2	2.3	2.0	2.2	2.1	2.0	2.0	2.2	2.9	2.7	2.1
Core PCE Deflator	1.5	1.6	1.7	1.9	2.0	1.9	1.7	1.5	1.8	1.7	1.8	1.9	1.9	1.9	1.6	1.9	1.7	1.9
Unemployment Rate*	4.3	4.1	4.1	3.9	3.8	3.8	3.9	3.5	3.5	3.4	3.5	3.4	3.4	3.4	4.4	3.9	3.6	3.4
Nonfarm Payrolls (chg in 1000s)	409	654	683	728	568	700	557	525	470	460	450	420	350	300	2,164	2,679	2,012	1,520
S&P 500*	2,467	2,603	2,733	2,703	2,850	2,699	2,725	2,890	2,952	2,966	2,985	2,999	3,011	3,032	2,449	2,746	2,883	3,007
Short-Term Interest Rates*																		
Fed Funds Target (%)	1.16	1.20	1.44	1.74	1.92	2.18	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	1.00	1.82	2.38	2.38
3-Month LIBOR (%)	1.31	1.46	1.93	2.34	2.34	2.62	2.69	2.61	2.63	2.63	2.63	2.63	2.63	2.63	1.26	2.31	2.64	2.63
7-Day SIFMA (%)	0.82	1.05	1.21	1.46	1.35	1.63	1.55	1.65	1.60	1.75	1.75	1.85	1.90	1.90	0.85	1.41	1.64	1.85
Treasury Interest Rates*																		
2-Year Treasury (%)	1.36	1.69	2.15	2.47	2.66	2.80	2.49	2.41	2.45	2.48	2.50	2.51	2.52	2.53	1.39	2.52	2.46	2.51
3-Year Treasury (%)	1.51	1.81	2.30	2.61	2.74	2.84	2.46	2.35	2.41	2.48	2.54	2.57	2.58	2.60	1.57	2.62	2.42	2.57
5-Year Treasury (%)	1.81	2.06	2.53	2.77	2.81	2.88	2.46	2.35	2.44	2.52	2.60	2.65	2.66	2.67	1.91	2.75	2.44	2.65
7-Year Treasury (%)	2.06	2.25	2.68	2.88	2.88	2.97	2.52	2.45	2.50	2.58	2.63	2.66	2.68	2.71	2.16	2.85	2.51	2.67
10-Year Treasury (%)	2.24	2.37	2.76	2.92	2.92	3.04	2.65	2.55	2.60	2.65	2.68	2.72	2.74	2.77	2.33	2.91	2.61	2.73
30-Year Treasury (%)	2.82	2.82	3.03	3.09	3.06	3.27	3.01	2.76	2.87	2.91	3.02	3.13	3.15	3.18	2.89	3.11	2.89	3.12
Municipal Interest Rates*																		
30-Year MMD (%)	2.75	2.71	2.91	2.99	3.04	3.27	2.95	2.54	2.66	2.72	2.84	2.96	2.99	3.06	2.85	3.05	2.72	2.96
Muni Yield Curve Slope (%)	1.93	1.58	1.51	1.36	1.47	1.40	1.34	1.04	1.01	0.92	1.09	1.11	1.09	1.16	1.93	1.44	1.08	1.11

P: Preliminary Data
* 3-month average
Source: Loop Capital Markets' Analytical Services Division and Short-Term Desk. Black Text: Actual Blue Text: Forecast as of May 28, 2019

Market Review *Data Diffusion | ADS Index*

Figure 2 **Data Diffusion Index vs. 10-Yr Treasury Yield**

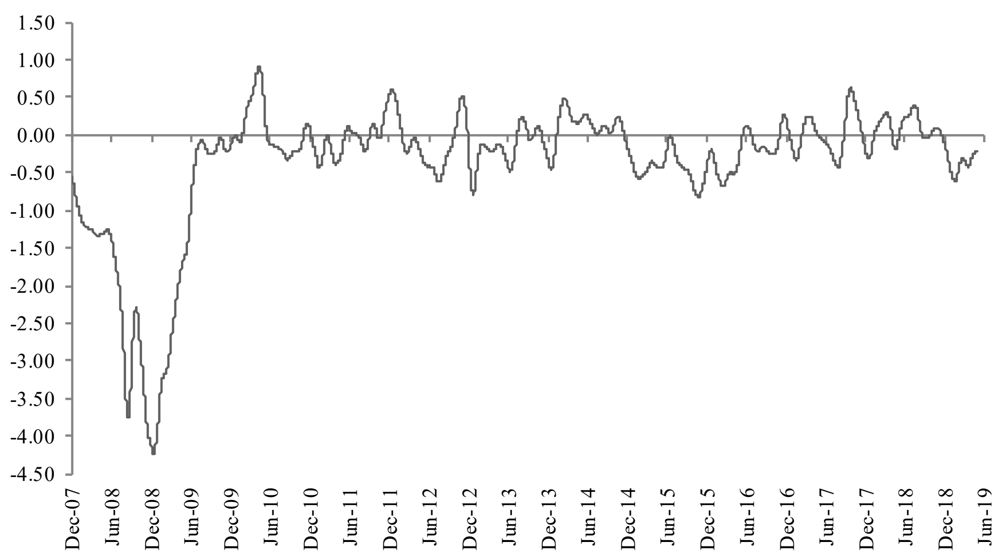


Sources: FRED, Loop Capital Markets

The 10-yr Treasury yield decoupled from economic fundamentals and dropped sharply over the last few weeks on trade war fears.

Data Diffusion Index: We calculate the Data Diffusion Index based on 30 different weekly, monthly and quarterly economic releases, such as construction spending, capacity utilization and new home sales. If the number came above the consensus estimate (which is positive for economic growth) the index would increase by one, and vice versa. The Treasury yield is expected to track the data diffusion index (the yields would increase as the economy exceeds expectations and vice versa).

Figure 3 **Aruoba-Diebold-Scotti Business Conditions Index (12/31/2007 — 05/25/2019)**



Source: Federal Reserve Bank of Philadelphia

After trending up for several years, the ADS index weakened from December through mid-February. It partially recovered since that time, but remains below the trend growth rate of about 2%.

Reading the ADS Index: The index is designed to track real business conditions at high frequency. Its underlying (seasonally adjusted) economic indicators (weekly initial jobless claims; monthly payroll employment, industrial production, personal income less transfer payments, manufacturing and trade sales; and quarterly real GDP) blend high and low-frequency information and stock and flow data.

Escalating U.S.—China Trade Conflict

By Ivan Gulich | Senior Vice President

Background

The U.S. raised tariffs on $200 billion of Chinese imports from 10% to 25% on May 10. In announcing the move, President Trump also threatened to impose 25% tariff on virtually all goods imported from China "shortly".[1]

The escalation of the trade conflict came as negotiators reached an impasse. The United States has reported that China abruptly withdrew its consent for most important commitments in a previously negotiated draft of the trade agreement. China refused to accept monitoring mechanism to evaluate the nation's progress in fulfilling its trade agreement commitments. Other points of disagreement include intellectual property protection, forced technology transfer, targets for reducing trade imbalance and currency manipulation.

China has responded to Administration's move with their own retaliatory tariffs, raising import duties on 5,140 U.S. goods worth $60 billion, effective June 1. There is a concern that China could create non-tariff barriers to U.S. imports in the form of increased inspections and investigations, which would result in extensive delays in clearing customs.

Tariff impact on U.S. soybean exports to China

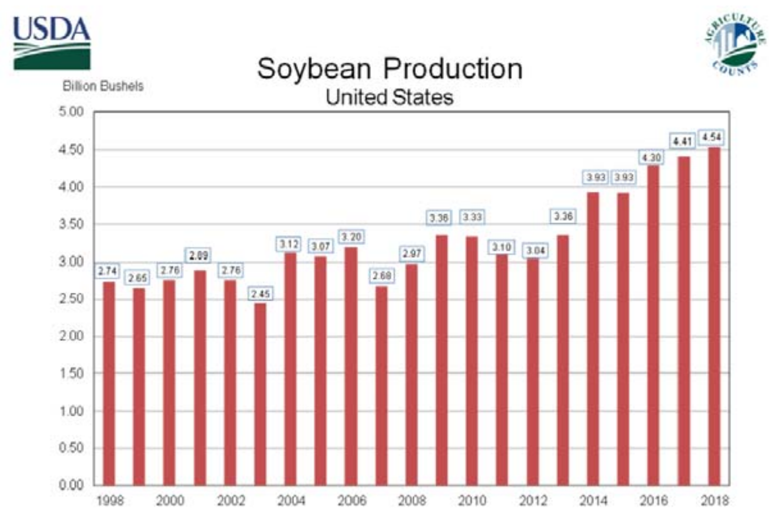
China is the largest soybean consumer in the world. Soybeans are used for the extraction of edible oil and bean products, while soybean meal, the by-product of oil extraction, is used to feed livestock.

China produces only about one-eighth of domestic consumption of soybeans. Outdated agricultural technologies and small-scale planting make domestic production non-competitive compared to farming in North and South America. China imported 33 million tons of soybeans from the U.S. in 2017, equal to about 30% of domestic consumption. Brazil was the largest supplier, exporting 51 million tons of the commodity to China.[2]

In July 2018, the Chinese government imposed a 25% retaliatory tariff on U.S. goods, including soybeans, leaving farmers sitting on a stockpile of the crop. As U.S. farmers became uncompetitive versus South American farmers, soybean exports to the Asian nation ground to a halt. China experienced an epidemic of deadly swine fever, which further reduced the demand for livestock feed, as 30% of pork supply was lost.

Limited buying resumed as two nations agreed to a truce last December, with China importing about 14 million tons of U.S. soybeans since that time, which was interpreted as a sign of goodwill.[3] While China pledged to import additional 10 million tons of the commodity this year, purchases have stopped after the U.S. hiked tariffs from 10% to 25% on $200 billion worth of Chinese imports effective May 10.[4]

U.S. soybean production increased by about one-third from 2013, (when prices peaked at $17 per bushel) to record 123 million tons in 2018, when the value of the crop was $39.1 billion.[5]

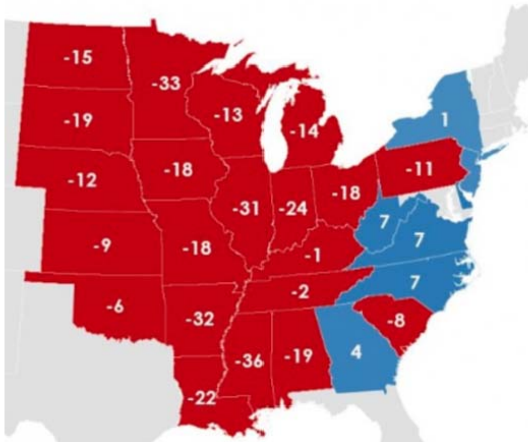


Soybean production USDA

The loss of Chinese market put a downward pressure on prices, which declined by about 18% in July 2018, when China imposed retaliatory tariffs, but have subsequently stabilized. Soybean futures dipped briefly below $8 per bushel in mid-May, but quickly recovered, as heavy rains and floods in the Midwest prevented farmers from planting the crop.

[1] Spencer Kimball: Trump says tariffs on $200 billion of Chinese goods will increase to 25%, blames slow progress in trade talks, CNBC, May 5, 2019
[2] Analytical Report on Soybean Import in China, 2018-2022, Research and Markets, November 2018
[3] China's April soybean imports from U.S. up 15.9% month-on-month, Brazilian imports soar, Reuters, May 25, 2019
[4] China Puts U.S. Soy Buying on Hold as Tariff War Escalates, Bloomberg, May 30, 2019
[5] Chuck Jones: Trump's Handouts Won't Be Enough To Save American Soybean Farmers As Prices Hit New Lows, Forbes, May 26, 2019

2019 Soybean Plantings vs. Historic 5-year Average



Source: Farm Bureau

About 27% of U.S. soybean production used to be exported to China, bringing about $10.5 billion in revenue. Soybean production was hurt much more by Chinese retaliatory actions than production of other crops. For example, wheat exports were not impacted by recent escalation since China stopped importing this commodity before the tariffs were implemented in 2018.

In an effort to contain political fallout, Trump Administration rolled out two relief packages for farmers. The first, $12 billion-dollar package covered payments through October 31, 2018. USDA officials unveiled another $16 billion trade relief package for farmers on May 23, 2019. $14.5 billion is earmarked for direct payments to farmers who grow corn, soybeans, wheat and other commodities and will be paid out in 3 separate tranches, starting in late July. $1.4 billion will be spent on food purchases, while $100 million is allocated for development of foreign markets.[6]

Farmers' lost profits due to the trade conflict with China are smaller than the payments they will receive from the federal government. By arranging this, the Administration has successfully eliminated a source of political exploitation available to challengers. New tariffs announced in May will also bring additional $30 billion to U.S. Treasury annually.

While the curtailment of exports will reduce traffic at western ports and rail traffic carrying grain from the Midwest, the impact is likely to be moderate.

Soft commodity prices and tariff barriers reduced demand for agricultural equipment, as farmers are reluctant to upgrade machinery while their incomes are depressed.

Competition over Technology

The U.S.-China trade conflict, initially centered around trade imbalance, has evolved into a fight over control of technology and telecommunications.

Huawei Technologies, the world's biggest manufacturer of network equipment, is at the forefront of development of 5G technology that promises download speeds of up to 100 times faster than the existing, decade-old 4G technology. Implementing 5G system in Asia and worldwide would boost development and deployment of driverless vehicles, remote robotic surgery and artificial intelligence.

Huawei relies on critical U.S. components such as chips, and software such as Google's Android operating system, to develop the 5G network.

Washington believes that Huawei engaged in activities "contrary to US national security or foreign policy interests", that the firm is backed by the Chinese military and that it is likely to add "back doors" into network equipment to allow monitoring of communication of Chinese strategic rivals.[7] The company was accused of stealing trade secrets, wire fraud and obstruction of justice.

The Administration, through the action of the US Commerce Department, barred U.S. firms from purchasing from and selling to Huawei and 68 of its non-US affiliates on May 16, with a 3-month reprieve. The move was designed to put pressure on Chinese negotiators, with Trump indicating that Huawei could be included in the final trade deal. This move could potentially cripple Huawei's ability to develop the next generation of telecommunications products and Chinese aspirations for high-tech leadership.

Another Chinese telecom company, ZTE, almost collapsed after the U.S. prohibited sale of high-tech components last year. The sales resumed after ZTE paid a $1 billion fine for violating U.S. sanctions against Iran and North Korea.

The U.S. is considering a similar ban against Chinese manufacturers of CCTV and face recognition equipment.

U.S. investment restrictions, export controls and tariffs are putting strain on high-end supply chains centered around China, which could over time migrate to other countries. While Chinese President Xi Jinping responded with a push to develop Chinese intellectual property and high technology, industry insiders think

[6] Humeyra Pamuk: Trump administration announces $16 billion farm aid plan to offset trade war losses, Reuters, May 23, 2019

[7] Bhavan Jaipragas: If Donald Trump kills off Chinese firm Huawei, do Asia's 5G dreams die?, South China Morning Post, May 25, 2019

that it would take more than a decade for the nation to catch up with the West in the semiconductor industry.
While restriction on sales of components and software to China will initially harm U.S. suppliers, these high-tech firms will be able to market their products to Chinese competitors.

The Outlook

The imposition of tariffs and escalation of the trade conflict has been going on for about a year now, as U.S. initiated trade conflicts with South Korea, NAFTA partners and the European Union. Unfazed by potential consequences of recent escalation of trade conflict with China, Trump announced brand new tariff on all goods arriving from Mexico on May 30 in an effort to pressure the southern neighbor to do more to stop illegal immigration into the U.S. The tariff would start at 5% effective June 10, increase to 10% on July 1, and subsequently rise by 5% per month up to 25% cap on October 1. The Mexican economy, heavily reliant on exports to the U.S., contracted 0.2% in Q1'19[8] and would suffer greatly under the new tariff regime.

Tariff pressure on trading partners had an intended effect, as Korea, Mexico and Canada grudgingly agreed to accommodate some U.S. demands in an effort to avoid tariffs. Chinese reluctance to yield to U.S. demands, especially as it relates to sensitive issues of technology transfer and intellectual property probably reflects policymakers' view that concessions would jeopardize their plan of transforming China into a technological superpower. No further talks have been scheduled since the last negotiating round ended in acrimony and the U.S. hiked tariffs.

Despite trade turmoil, the U.S. economy expanded over the last 3 quarters at solid annual rate of close to 3%, disproving the validity of economists' predictions to the contrary. Since exports to China represent less than 1% of U.S. GDP, retaliatory tariffs have a very small impact on the economy. Tariffs on Chinese products bring about $5 billion per month to the U.S Treasury, which is more than sufficient to support vulnerable sectors of the economy, such as agriculture, that are disproportionally harmed by the trade conflict. The president has signaled he is content leaving the duties in place, arguing they will damage China more than the U.S.

China's threat to restrict exports of rare minerals to the U.S. would have a limited impact. The U.S. is not a large importer of rare minerals used in consumer electronics, which for the most part is no longer produced domestically. These minerals are not actually rare, but can be imported from Malaysia and Japan, or mined elsewhere including the U.S., but at a much higher cost.[9]

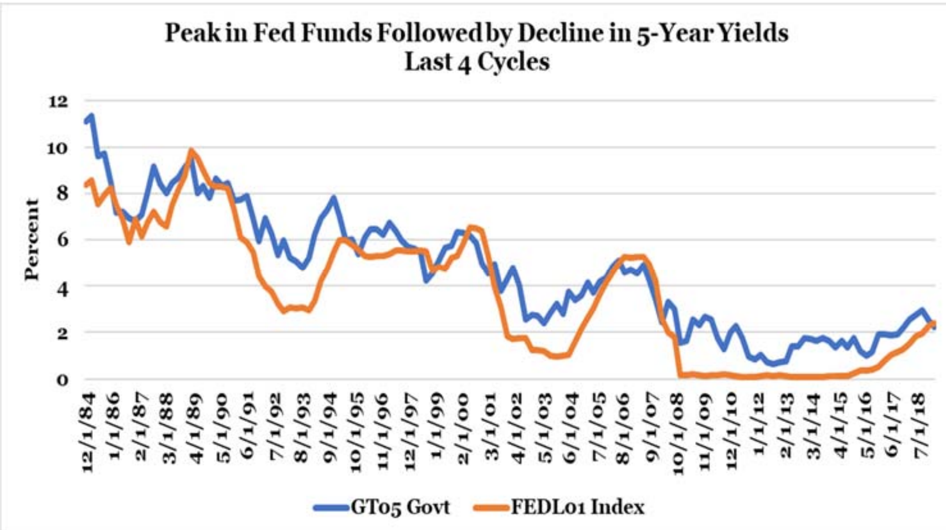
Trump's hardball tactics, the Huawei controversy and Chinese intransigence indicate that the conflict between two nations is no longer limited to trade imbalance, but encompasses a wide range of issues that reflect strategic competition. This makes a negotiated settlement even more difficult, especially after recent breakdown in talks amid mutual recriminations. There is at least a fifty-fifty chance that the U.S. will impose tariffs on more than 50% of Chinese goods that are currently imported duty-free. As the standoff continues, the hope that a comprehensive trade agreement will be reached in the foreseeable future is receding.

Despite investors' skittishness reflected in stock market gyrations, we think that escalating trade conflict will have only a marginal impact on the U.S. economy, unless the trade wars expand and become too protracted. The outlook for Chinese economy, which has been struggling with slowing growth and structural problems for some time, is more challenging due to the trade dispute and increasing strategic competition with the U.S.

[8] AFP: Mexico confirms economy shrank in Q1, in blow to 'AMLO', May 24, 2019
[9] Tom DiChristopher: Why China's rare earths threat is no game changer in the trade war, CNBC, June 3, 2019

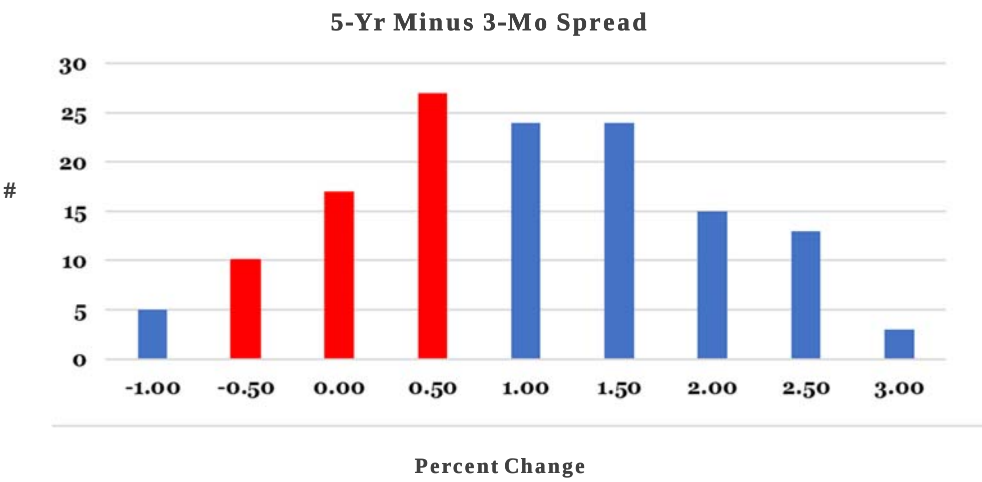
Treasury Curve Dynamics

By Chris Mier, CFA | Strategist

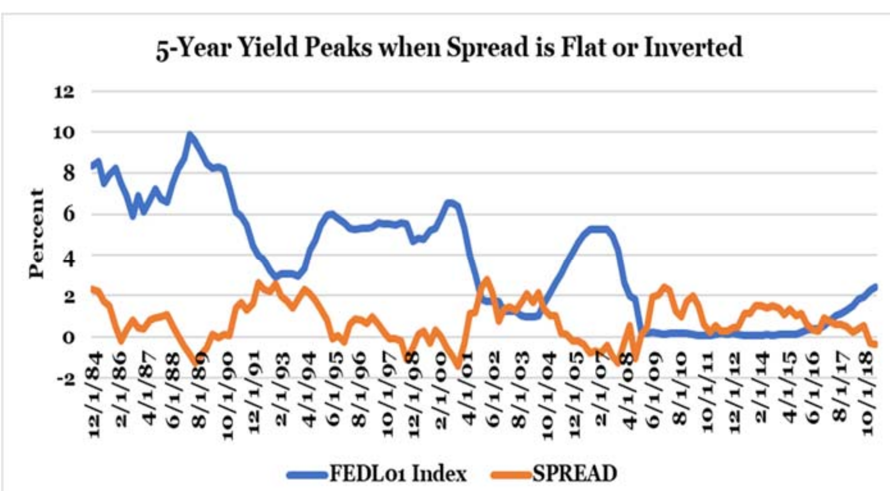


Over the last four tightening cycles the 5-yr Treasury note has peaked close to the peak in the Fed Funds rate.

The graph shows that a flat yield curve, when the Fed Funds rate is close to the 5-yr yield, is a “transitional” curve that is either on its way towards a steepening or a tightening.



The histogram highlights this point. Only 39% of the time is the curve “flat”, as defined using a fairly liberal range — from -0.50% to 0.50%. In general, the yield curve is positively sloped.



This chart shows that the 5-yr yield peaks when the spread is flat or inverted.

The series of charts demonstrate that when the yield curve slope is close to zero, the 5-yr is highly likely to add positive total return relative to a series of 3-month LIBOR notes.

First Opioid Trial Begins with Considerable Potential Impact for Muni Market

By Rachel Barkley | Senior Vice President

The first notable trial has begun with the State of Oklahoma v. Johnson & Johnson and Janssen Pharmaceuticals, among others. The case will be decided solely by Judge Thad Balkman as it is not a jury trial.

Oklahoma claims the manufacturers caused a public nuisance, which require between $12.7B and $17.5B over the next 20 to 30 years to abate.[10] In 2016, Oklahoma had 21.5 deaths per 100,000 residents attributable to drug overdoses, which is on par with national statistics.[11] Opioids were found to be involved with roughly two-thirds of drug overdose deaths nationally.

Defendants in the case are expected to argue that the state cannot prove causation as the medications are FDA-approved with labeling detailing their potential risks. Instead, the companies point the finger at doctors who overprescribed the medication and illegal narcotics. Further, court documents claim Oklahoma's public nuisance statute regulates real property, not products, and allows the state to purse abatement for conduct, not effects resulting from conduct.[12] Defendants also contend that the state is unable to prove joint and several liability as it is difficult to apportion blame between the relevant parties in the case.

Oklahoma has already reached settlements with the other two original defendants in the case: Purdue Pharma and Teva Pharmaceuticals (CJ-2017-816). Purdue Pharma, the maker of OxyContin, will pay roughly $275M to Oklahoma. The majority of this ($103MM) will go to fund the National Center for Addiction Studies and Treatment at Oklahoma State University (OSU), Tulsa. Cities and counties will receive $73MM to cover litigation costs. Moody's has commented that the settlement is a credit positive for OSU and Oklahoma cities and counties. [13]

Teva, which makes generic opioids, settled with the state for $85M this month. While the terms of the settlement with Teva are still being finalized, the Oklahoma Attorney General has stated the state will use the funds to address the opioid epidemic.[14]

Additionally, analysts should also keep an eye on the multi-district litigation (MDL) 2804, which consists of over 1,700 federal lawsuits being overseen by Judge Dan Polster in the United States District Court Northern District of Ohio Eastern Division. More than 40 states are currently involved in the lawsuit, along with hundreds of local governments, several Native American tribes, hospital districts, and health plans.[15] The first bellwether trial in MDL 2804, currently set for October, will be the County of Summit, Ohio, et al. v. Purdue Pharma L.P. et al. (Case No. 18-0p-45090), which includes the City of Cleveland, Summit County and Cuyahoga County, Ohio as plaintiffs.[16] A second bellwether cases for the MDL will involve the City of Huntington and Cabell County, West Virginia.[17]

The current Oklahoma trial will serve as a harbinger for future cases as the first-time evidence will be made public against the opioid industry. It has thus far been kept confidential through the settlement process. The depth of evidence against the opioid manufacturers, including any potential evidence of fraudulent marketing, will be a key determinant not only of how this case is decided, but the thousands of additional cases against the industry which are currently in progress. Additionally, the size of any settlement would likely serve as a benchmark in future cases.

Future settlements and trial decisions involving monetary penalties are highly likely, including in MDL 2804 in which Judge Polster has stated his support for a settlement.[18] It remains unclear whether any monetary settlement or award would be structured similarly to the Tobacco MSA by agreeing to accept payment from the defendants in perpetuity in exchange for a shield from future litigation. The amount of the settlement, the defendants included in the settlement, the timeline of payments, and the perceived likelihood of full payment will be key determinants of the structure of any future payouts. The long-term credit implications for governments related to the current lawsuits will depend on the amount of the settlement and how the money is used by governments.

[10] First Big Trial in Opioid Crisis Set to Kick Off in Oklahoma. Wall Street Journal. May 27, 2019.
[11] Centers for Disease Control
[12] Trial Brief of Defendants Johnson & Johnson and Janssen Pharmaceuticals Inc. Redacted Version. Filed May 24, 2019.
[13] Opioid settlement credit positive for Oklahoma State University, local government. Moody's Investors Service. April 5, 2019.
[14] Teva to pay $85m to Oklahoma over opioid use. The Financial Times. May 26, 2019.
[15] Can a Judge Solve the Opioid Crisis? New York Times. May 7, 2018.
[16] Case 1:17-md-02804-DAP Doc# 876 Filed: Aug.13, 2018.
[17] West Virginia cases picked for 2nd federal opioid trial. Reuters. January 2, 2019.
[18] Can a Judge Solve the Opioid Crisis? New York Times. May 7, 2018.

Growth in Political Will Not a Match for Growing Pension Risks

By Chris Mier, CFA | Strategist

Has the willpower of states to grab the pension bull by the horns increased over the last few years? Probably yes. The number of attempts to reign in pension costs continues unabated across numerous states. While efforts increase, are they up to the task? The political will has grown, but unfortunately so have the challenges.

A slew of pension risks is beginning to expand in the framework of the current economic and financial environment. In the last six months:

1. Treasury rates have fallen so discount rates should, in theory, be gradually lowered, resulting in larger Net Pension Liabilities.

2. Given the volatility of the stock market and declining corporate profitability, the expected return on investments is likely to be viewed as much lower given the fallen rates, slowing in the economy, trade wars, and greater uncertainty in the marketplace. While those estimates won't be forthcoming until year-end, 7% Investment Rate Assumptions may have to fall.

3. Almost all fixed income investments yield less than the drain rate on plans (the percentage of payouts to retirees relative to plan assets). This will continue to drive plans to take greater investment risk.

4. States and local units that have tried to bring budgets back into balance through layoffs have compounded the problem in the short run by reducing the contributions coming from employees.

5. New mortality tables being put into effect will show longer life expectancy and increase NPL and ARC requirements.

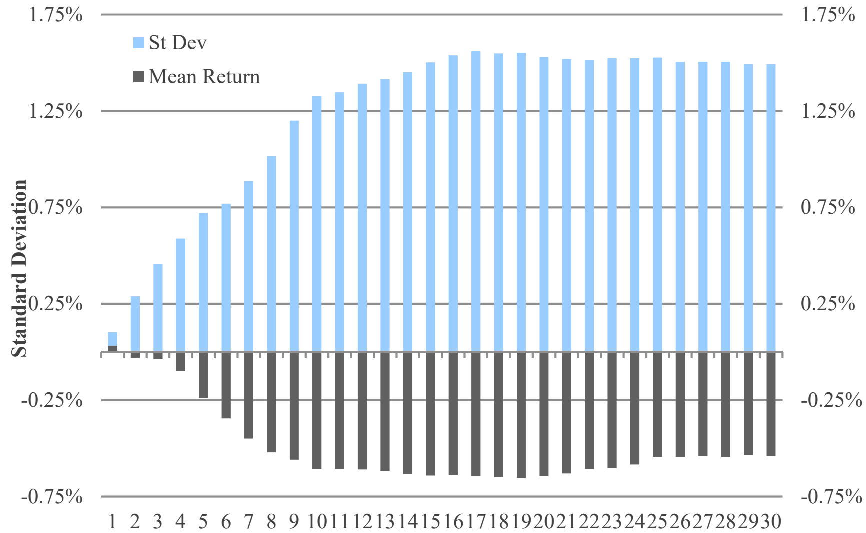
6. The improvement in wage growth and the increase in minimum wage rates that has taken place in over 20 states will make it harder to contain the wage demands of covered employees.

7. The demographics continue to exact a toll as the number of retirees mount while the addition to payrolls slows.

The environment is getting harder. To keep pace many states will not only have to make their required contributions but exceed them if any progress is to be made towards higher funded levels. This is occurring at a time when the national economy is slowing, and many are projecting a recession in late 2019 or 2020. While some states are well prepared for the possibility of a recession, others are not. Adding the increasing burden of pensions on top of this scenario creates more than the usual level of concerns.

Market Review *Historical Monthly Bond Price Changes*

Figure 4 **Muni Benchmark Callable Scale — Average Bond Price Changes (June)**



Sources: Loop Capital Markets, TM3

We show historical bond price changes for each point on the muni benchmark callable curve during the month of June for the last 18 years.

The returns in June were negative 3/4 of the time, with bond prices declining, on average, 0.50% across the curve.

Figure 5 **Muni Benchmark Callable Scale — Average Bond Price Changes (June)**

AAA MMD - MONTHLY PRICE CHANGE

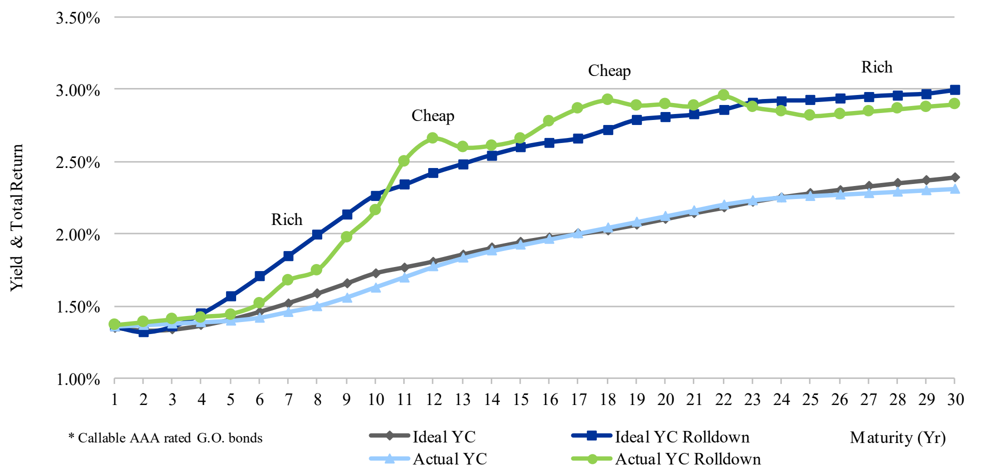
Maturity	5	10	15	20	25	30
Jun-01	0.22%	0.16%	0.39%	0.38%	0.38%	0.38%
Jun-02	0.97%	1.18%	0.93%	0.38%	0.15%	0.15%
Jun-03	-0.40%	-1.04%	-1.58%	-1.41%	-0.86%	-0.86%
Jun-04	0.00%	-0.16%	0.08%	-0.08%	-0.16%	-0.23%
Jun-05	0.18%	0.32%	0.32%	-0.08%	0.00%	0.00%
Jun-06	-0.79%	-0.94%	-0.79%	-0.86%	-0.78%	-0.78%
Jun-07	-0.53%	-1.26%	-1.10%	-1.25%	-1.33%	-1.49%
Jun-08	-1.41%	-1.81%	-1.41%	-1.41%	-1.63%	-1.63%
Jun-09	-0.45%	-2.07%	-1.58%	-1.02%	-0.94%	-0.86%
Jun-10	0.13%	0.08%	-0.48%	-0.71%	-0.16%	-0.16%
Jun-11	-0.23%	-0.81%	-0.64%	-0.32%	-0.32%	-0.39%
Jun-12	-0.18%	-0.57%	-0.89%	-0.96%	-0.64%	-0.64%
Jun-13	-2.05%	-3.75%	-4.95%	-5.31%	-4.84%	-4.60%
Jun-14	-0.23%	-0.97%	-0.73%	-0.40%	-0.40%	-0.24%
Jun-15	0.14%	-0.73%	-0.56%	-0.64%	-0.88%	-0.96%
Jun-16	0.91%	2.59%	2.83%	2.98%	3.57%	3.56%
Jun-17	-0.58%	-0.73%	-0.89%	-0.48%	-0.40%	-0.40%
Jun-18	0.00%	-0.41%	-0.48%	-0.40%	-0.56%	-0.56%
Mean	-0.24%	-0.61%	-0.64%	-0.64%	-0.54%	-0.54%
St Dev	0.72%	1.33%	1.50%	1.53%	1.53%	1.49%

Sources: Loop Capital Markets, TM3

The 15 to 20-yr range had the lowest expected return and was also the most volatile.

Market Review *The Yield Curve*

Figure 6 **1-Year Forward Roll-down—Muni Benchmark Curve* (June 3, 2019)**

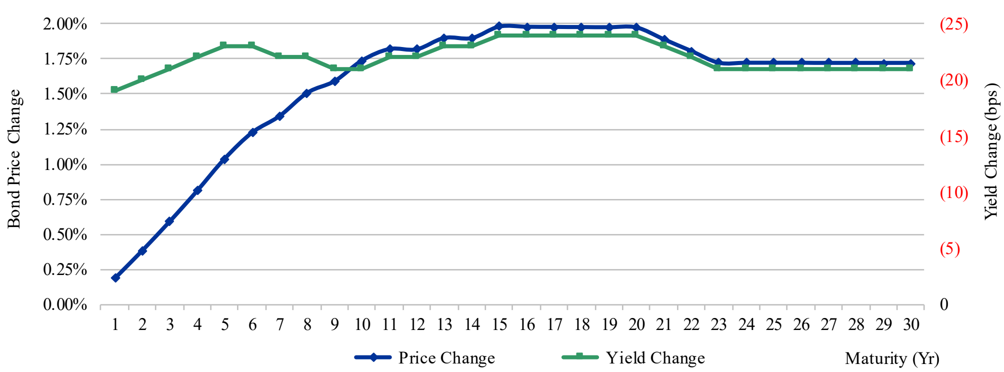


Sources: Loop Capital Markets, TM3 | *Callable AAA-rated G.O. bonds

The yield curve shows rich (5 to 10-yr and 24+ yr) and cheap (11 to 22-yr) points on the AAA MMD curve, based on one year holding period returns and assuming no change in the yield curve. 22-yr maturity offers the highest expected total return.

Actual returns will depend on the level and shape of the yield curve a year from now.

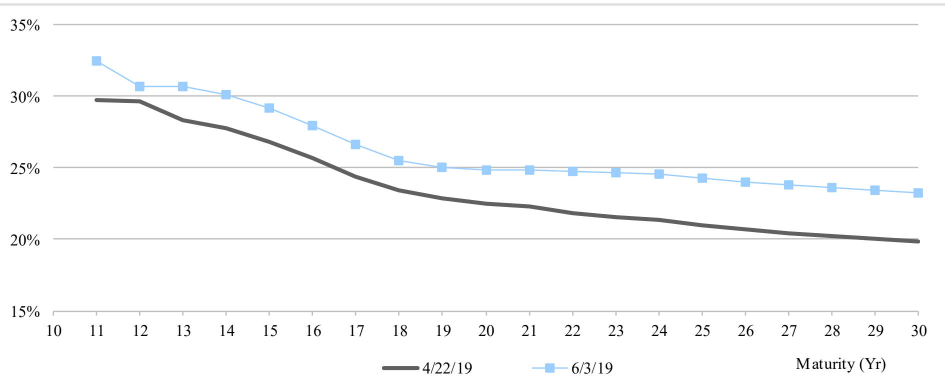
Figure 7 **Monthly Price Change — AAA GO Bonds* (05/03/19 — 06/03/19)**



Sources: Loop Capital Markets, TM3 | *Price Change Only

Muni bonds appreciated across the curve in May and beginning of June, as yields declined by 22 bps, on average.

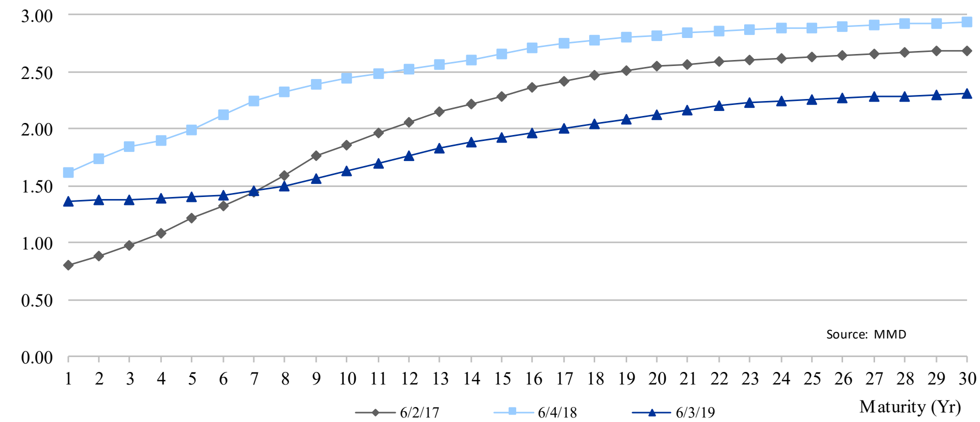
Figure 8 **Implied Municipal Volatilities**



Sources: Loop Capital Markets, TM3 | *10-year call

Implied volatilities rose across the curve last month as yields declined and the intrinsic value of the call increased.

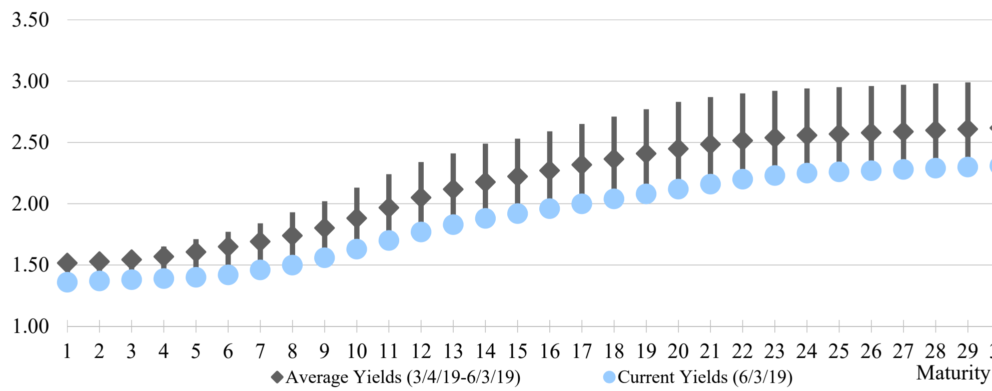
Figure 9 **Current vs. Historical Municipal Yield Curves (%)**



Source: TM3

Yields are about 65 bps lower, on average, then they were 12 months ago. The yields are currently lower across much of the curve compared to June 2017 as well.

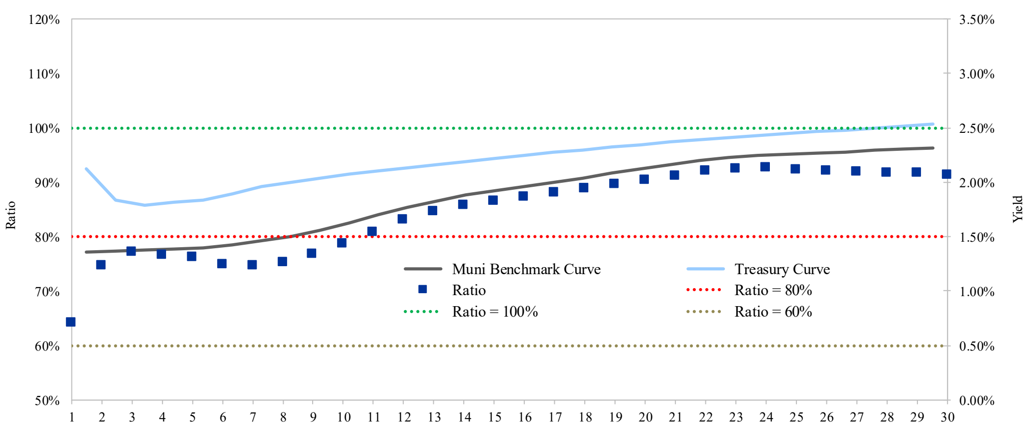
Figure 10 **3-Month Average Benchmark Muni Curve Yield**



Source: TM3

The yields are close to their lowest levels in 3 months across the muni curve.

Figure 11 **Muni and Treasury Yield Curves and Ratios**

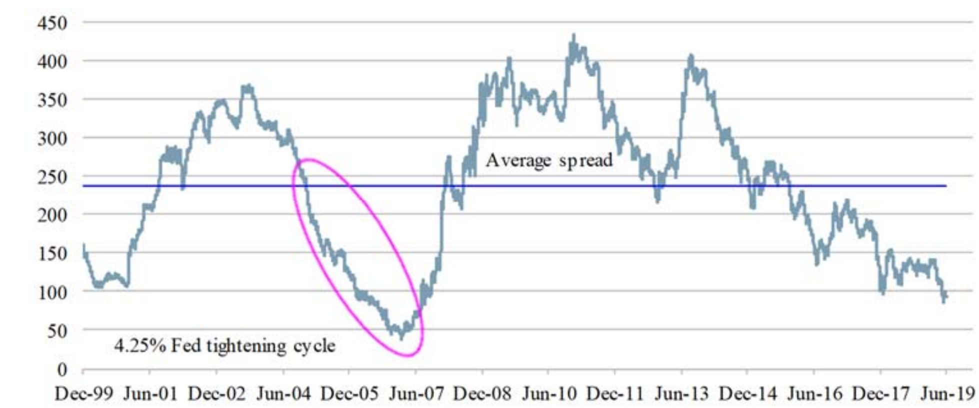


Sources: Eikon, TM3

As the spread between Treasuries and munis widened, M/T ratios declined across the curve.

Market Conditions

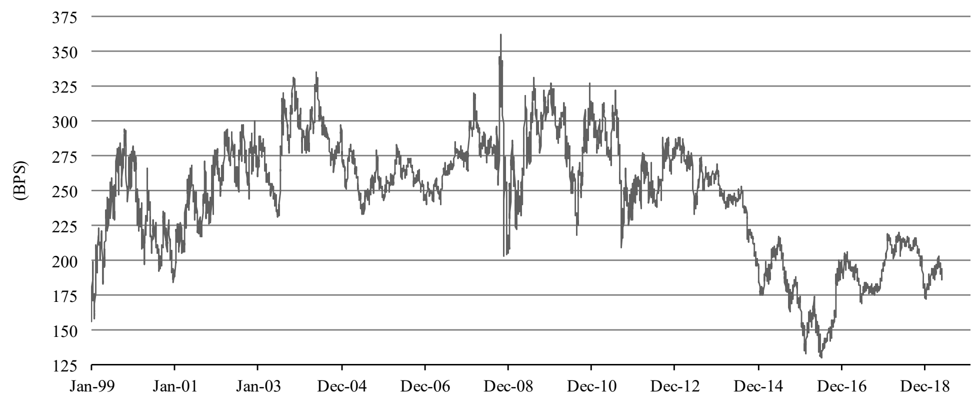
Figure 12 **2 to 30-Yr Muni Spread (bps)**



Source: TM3

The slope of the curve declined close to its flattest level since 2007.

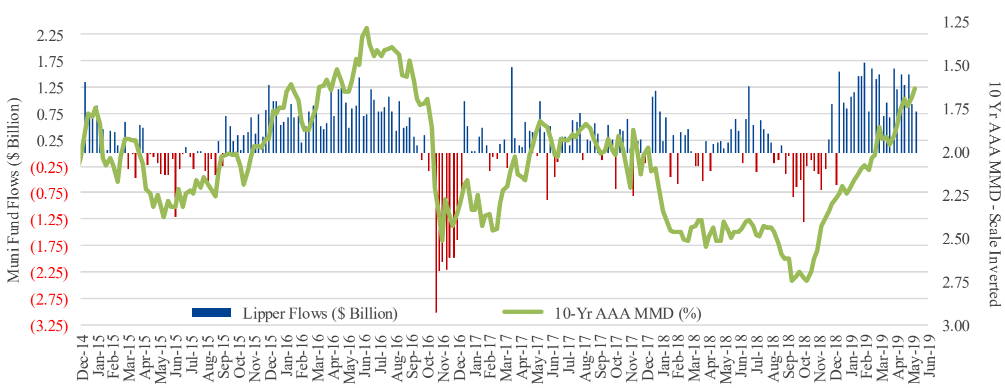
Figure 13 **Inflation Expectations**



Source: FRED

Fed's five-year forward breakeven inflation rate, derived from TIPS and regular Treasury yields, is currently 1.86%.

Figure 14 **Lipper Weekly Municipal Mutual Fund Flows ($ Billion)**



Source: Lipper

A remarkable trend of very strong muni fund inflows continued in May. Twenty-two consecutive weeks of net inflows boosted fund assets by about $26.6 billion.

Loop Capital Markets Upcoming Negotiated Calendar

Date	Par Amount ($ mil)	Issue	Loop Capital's Role
Week of 6-10	106.0	The City of St. Louis Airport Revenue Bonds (AMT and Non-AMT)	Co-Senior Manager
6/11/19	433.9	Department of Airports of the City of Los Angeles Sub. Revenue Bonds (AMT, Non-AMT)	Co-Manager
6/12/19	785.0	Kansas City Ind. Dev. Auth. Airport Special Obligation Bonds (AMT and Non-AMT)	Co-Manager
6/12/19	70.9	Massachusetts Housing Finance Agency Housing Bonds, 2009 Series A (Non-AMT)	Co-Manager
6/13/19	300.0	State of North Carolina (Build NC) Limited Obligation Bonds Series 2019A	Co-Manager

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