Loop Capital

# Municipal Strategy Report

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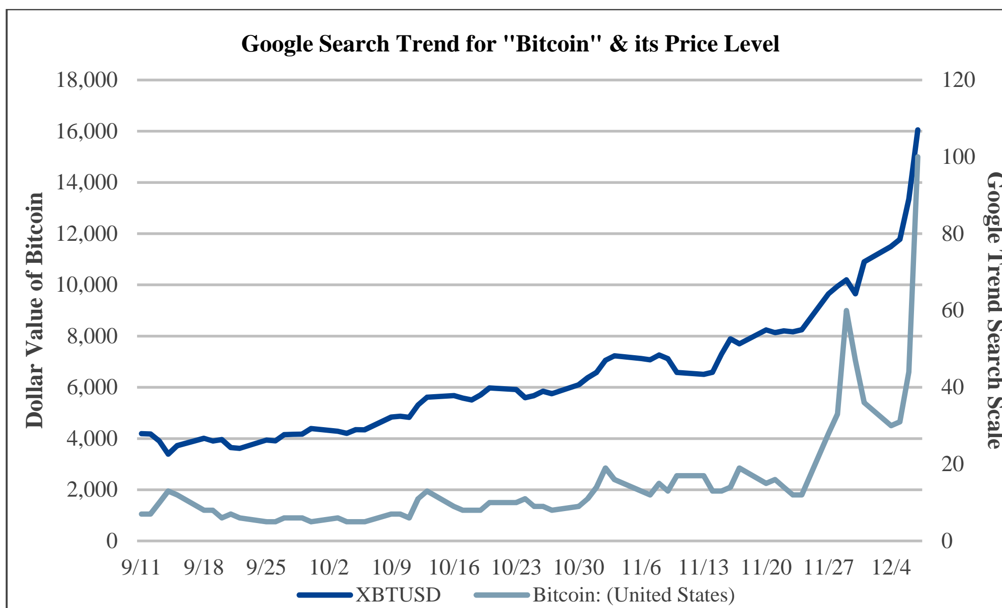
## Bitcoin…Seventh Wonder?

*The financial world has become Bitcoin-enamored in a way reminiscent of past popular fascinations with the hula hoop, the rock band Devo, and Echinacea—all popular culture phenomena that had their day before being downgraded to the commonplace. Unlike the hula hoop, the opportunity to lose real money (by "real", I mean large quantities and quickly) exists with Bitcoin in the same way that it did centuries ago during the Tulip Mania. Bitcoin has no intrinsic value and is subject to the "greater fool theory" where prices for a good are not determined by intrinsic value, but by the {manic} expectations of those who are trading it. With the Wall Street Journal reporting that Katy Perry has consulted Warren Buffett on cryptocurrencies, is it too early to recommend that investors dust off their copies of "Extraordinary Popular Delusions and the Madness of Crowds", by Charles Mackay"?*

*By Chris Mier, CFA | Strategist*

***Figure 1 Daily Tally of Google Searches for "Bitcoin" Explain 77% of the Movement in its Price***

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# Bitcoin…Seventh Wonder?

The eventual price collapse of Bitcoin, which has been increasing in value at a daily rate exceeding 2% per day since September 11th, will represent a punishing demonstration of why children should not be allowed to play with matches. The explosion of interest in Bitcoin and the meteoric rise in its price, its association with Katy Perry and Winklevoss twins, and the visceral sense of disaster that a few of us must get in reading about Bitcoin has all the makings of a Coen Brothers movie. Like Fargo, the eventual price collapse will be a bloody, strange, and entertaining tragicomedy. If I am wrong, it won't be the first great investment opportunity I missed, but if I am right, then my Elvis Presley US Stamps that were misprinted (the ones where Elvis' hair hovers above his head due to a typesetting problem) will have finally outperformed something.

Lacking intimate familiarity with cryptocurrencies, I am willing to cast my lot with Jamie Dimon, of JPMorgan Chase, who told CNBC that he was "not going to talk about bitcoin anymore" after causing a stir in September by calling the digital currency a "fraud." Dimon followed up with a more recent comment on CNBC, saying if people are "stupid enough to buy it," they will pay the price for it in the future. It is worth noting that Dimon also said that the block chain technology that enables cryptocurrencies like Bitcoin is a valid technology. One should separate the current speculative fervor from the eventual adoption of useful crypto-related technologies, which are separate issues.

**"Let Me Count the Ways"**

Why do I hate Bitcoin? Let's start with the fact that Bitcoin has no real value. Because of that, trading in Bitcoin is a pure speculation, not an investment. While the US Dollar may be criticized as a fiat currency without intrinsic value, it does enjoy the benefit of being legally sanctioned as money by the Federal government, which establishes policies to promote and enforce its value. In the case of the dollar, the US government's interests and mine are fairly closely aligned. The government's need to borrow and my need to settle debts "both public and private" create a "double coincidence of wants" where the government and I both want money to be worth something and to be held in high regard by the global financial community such that it sustains stable recognition of its value. A "fiat" currency means the currency has official status by virtue of a decree of the central government. No such declaration has been made by any credible source in support of Bitcoin.

Rather, a cryptocurrency gives you the exact opposite of a greenback. Bitcoin, and the various other lesser known "cryptos," offer you a decentralized, non-governmental currency that relies on complex technological architecture for settlement and record-keeping, coupled with an immutable a decision rule on its monetary growth. Bitcoin is programmed to be "mined" according to roughly a 1% per year fixed growth rate through 2040. Cryptocurrencies offer a monetary system that is outside government and the monetary authorities. Part of their allure, and their practical value in use for illegal purposes on the dark web, arises directly from the extra-legal world in which it operates. A **Blockgeeks** blogger declared that the Bitcoin payment system "…is an attack on the control of central banks and governments over the monetary transactions of their citizens". This is the world from which Bitcoin slithered out from.

Jeffrey Sessions testified to the Senate Judiciary Committee several months ago that "[Dark web users} use bitcoins and other untraceable financial capabilities and it is a big problem." Sessions referenced AlphaBay, which was shut down in a law enforcement action, saying that AlphaBay's client base was 240,000 accounts engaged in selling "for the most part illegal substances and guns…"

I am sure that the dark market would exist without cryptocurrencies, but I wonder if cryptocurrencies would exist without the dark market?

**But what about the Advancement of Technology?**

The development of cryptocurrencies, including Bitcoin, has spawned new technologies that are not been without possible beneficial usage at some point. The block chain settlement process potentially offers lower cost, greater efficiencies in settlement and clearing. The technologies could be used as a means of providing a parallel system to defend against threats of cyber-attack on the current system, as well as other cost-saving possibilities.

The Bank for International Settlements' **Committee on Payment and Market Infrastructures** provides an unvarnished and unbiased analysis of cryptocurrencies, focusing on the technologies that have been developed to enable cryptocurrencies to function, in a study called **"Distributed ledger technology in payment, clearing, and settlement"** in February of 2017. Saying that "DLT may radically change how assets are maintained and stored, obligations are discharged, contracts are enforced, and risks are managed", the report adds that the use of DLT "does not come without risks."

Specific areas identified in the report regarding the risks to be further investigated include: operational and security risks, settlement

issues, legal risk, governance, data management and protection, and potential broader financial market implications.

The cryptocurrency technology that has been developed represents a potential breakthrough that can be applied to the current global monetary system of transactions, clearing and settlement. The development and utilization of any of this technology, however, is a long-term process that requires lengthy testing and due diligence.

When the tulip mania was in full swing, your purchase of a precious contract for an exotic bulb at 10 times the average person's salary had reasonable assurance that delivery would occur under prevailing settlement practices. It is not yet clear that Bitcoin, or other cryptocurrencies, offer the same protections, although at some point, they may.

**Conclusion**

With time and appropriate investigation there will no doubt be technologies that have been developed as part of the birth of the cryptocurrency market that will provide benefits applicable to mainstream banking transaction and settlement process. Taking a flyer on the current price of bitcoin, however, does not constitute a peak into the future and a thoughtful investment in the new technologies under development. I am personally reluctant to invest in any product that was created by someone who's "real identity remains a mystery to this day" (Blockgeeks). Credit the mysterious "Satoshi Nakamoto" with a creative innovation, but my plan is to continue use "Benjamins."

# Economic and Interest Rate Forecast—December 2017

## Factors Supportive of Lower Rates

The FOMC is still waiting for confirmation that inflation is approaching 2%. A slowdown in progress would result in a reduced pace of Fed reduction in monetary accommodation.

The yield curve has been flattening with anticipation of Fed tightening, suppressing any increase in interest rates on the long end of the yield curve.

The CRB Index, having peaked on September 8th at 1.2036, has moved sideways to slightly lower despite continuing strength in the US economy.

## Factors Supportive of Higher Rates

Nonfarm payrolls surged 228K in November. Most of the influence of hurricanes has dissipated. Recent moving averages for employment gains have exceeded those in the early part of the year. The labor force participation rate has stabilized.

The composition of the FOMC will change to a new more hawkish persuasion in 2018. Given the probability of a stimulative tax plan going into effect, continued high optimism and sustained strength in labor markets, we now see the Fed boosting rates three times in 2018, a change from our previous forecast.

Auto sales have continued at an annual pace over 17M units despite occasional interruption due to creative financing by manufacturers, fleet replacement, and demand related to hurricane rebuild.

WTI crude oil futures have rallied 30% since mid-summer.

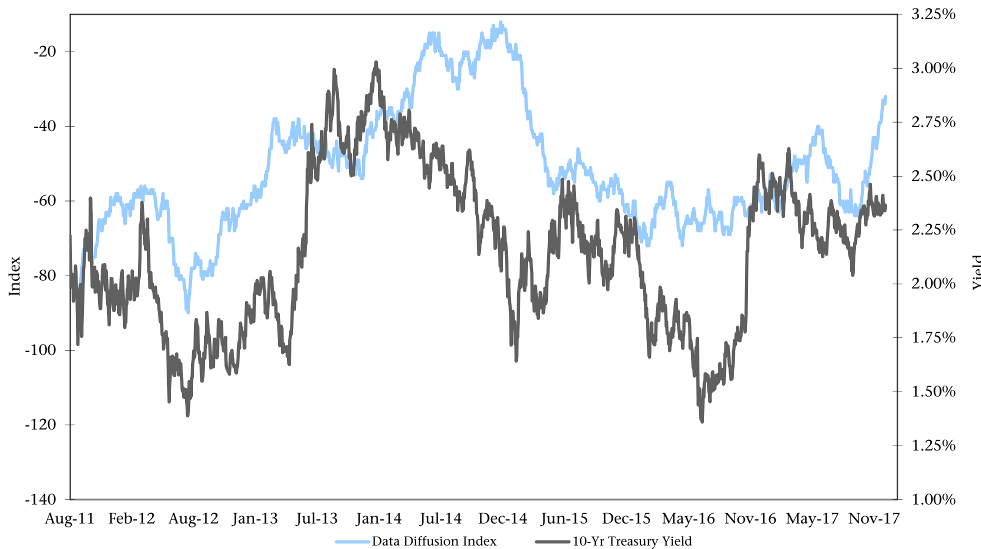
*Figure 1* **Economic and Interest Rate Forecast—December 2017**

| | 1Q'17 | 2Q'17 | 3Q'17 | 4Q'17 | 1Q'18 | 2Q'18 | 3Q'18 | 4Q'18 | 1Q'19 | 2Q'19 | 3Q'19 | 4Q'19 | Avg'17 | Avg'18 | Avg'19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Economic Forecasts** | | | | | | | | | | | | | | | |
| Real GDP | 1.2 | 3.1 | 3.3 | 2.8 | 2.8 | 2.3 | 2.7 | 2.8 | 2.6 | 2.3 | 2.3 | 2.4 | 2.6 | 2.7 | 2.4 |
| Core PCE Deflator | 1.8 | 1.5 | 1.4 | 1.5 | 1.5 | 1.7 | 1.8 | 1.9 | 2.0 | 2.1 | 1.9 | 2.0 | 1.6 | 1.7 | 2.0 |
| Unemployment Rate* | 4.7 | 4.4 | 4.3 | 4.1 | 4.1 | 4.1 | 4.0 | 3.9 | 3.8 | 3.7 | 3.7 | 3.7 | 4.4 | 4.0 | 3.7 |
| Nonfarm Payrolls (chg in 1000s) | 498 | 562 | 384 | 630 | 505 | 475 | 460 | 450 | 440 | 435 | 435 | 450 | 2,074 | 1,890 | 1,760 |
| S&P 500 | 2,327 | 2,398 | 2,467 | 2,600 | 2,641 | 2,683 | 2,726 | 2,769 | 2,813 | 2,858 | 2,903 | 2,949 | 2,448 | 2,705 | 2,881 |
| **Short-Term Interest Rates*** | | | | | | | | | | | | | | | |
| Fed Funds Target (%) | 0.70 | 0.95 | 1.16 | 1.21 | 1.41 | 1.46 | 1.67 | 1.94 | 2.16 | 2.21 | 2.41 | 2.45 | 1.01 | 1.62 | 2.31 |
| 3-Month LIBOR (%) | 1.07 | 1.21 | 1.31 | 1.43 | 1.54 | 1.58 | 1.77 | 2.04 | 2.26 | 2.31 | 2.51 | 2.55 | 1.26 | 1.74 | 2.41 |
| 7-Day SIFMA (%) | 0.69 | 0.84 | 0.82 | 0.95 | 1.10 | 1.25 | 1.40 | 1.55 | 1.60 | 1.75 | 1.80 | 1.90 | 0.82 | 1.33 | 1.76 |
| **Treasury Interest Rates*** | | | | | | | | | | | | | | | |
| 2-Year Treasury (%) | 1.24 | 1.29 | 1.36 | 1.66 | 1.82 | 1.86 | 2.02 | 2.24 | 2.42 | 2.46 | 2.62 | 2.65 | 1.39 | 1.98 | 2.54 |
| 3-Year Treasury (%) | 1.51 | 1.47 | 1.51 | 1.78 | 1.95 | 1.99 | 2.13 | 2.33 | 2.50 | 2.54 | 2.68 | 2.71 | 1.56 | 2.10 | 2.61 |
| 5-Year Treasury (%) | 1.94 | 1.81 | 1.81 | 2.04 | 2.16 | 2.20 | 2.33 | 2.50 | 2.64 | 2.68 | 2.80 | 2.82 | 1.90 | 2.30 | 2.74 |
| 7-Year Treasury (%) | 2.25 | 2.07 | 2.06 | 2.23 | 2.31 | 2.34 | 2.47 | 2.63 | 2.77 | 2.81 | 2.93 | 2.94 | 2.15 | 2.44 | 2.86 |
| 10-Year Treasury (%) | 2.44 | 2.26 | 2.24 | 2.36 | 2.48 | 2.51 | 2.63 | 2.79 | 2.93 | 2.96 | 3.08 | 3.09 | 2.32 | 2.60 | 3.01 |
| 30-Year Treasury (%) | 3.05 | 2.90 | 2.82 | 2.82 | 2.94 | 2.97 | 3.10 | 3.26 | 3.39 | 3.42 | 3.54 | 3.56 | 2.89 | 3.07 | 3.48 |
| **Municipal Interest Rates*** | | | | | | | | | | | | | | | |
| 30-Year MMD (%) | 3.08 | 2.86 | 2.75 | 2.71 | 2.81 | 2.83 | 2.94 | 3.08 | 3.19 | 3.20 | 3.30 | 3.31 | 2.85 | 2.91 | 3.25 |
| Muni Yield Curve Slope (%) | 2.21 | 2.02 | 1.93 | 1.62 | 1.69 | 1.56 | 1.52 | 1.51 | 1.57 | 1.43 | 1.48 | 1.39 | 1.94 | 1.57 | 1.47 |

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 December 8, 2017

# Market Review *Data Diffusion | ADS Index*

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

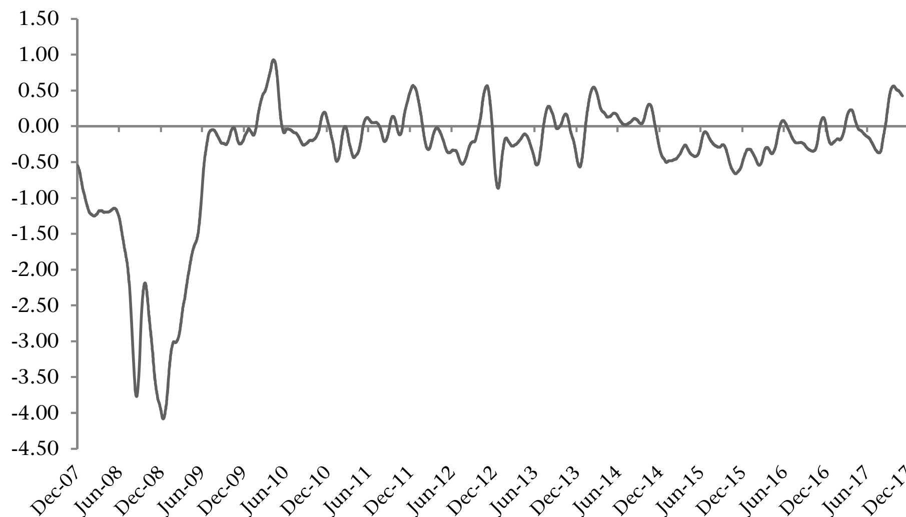



Source: FRED, Loop Capital Markets

Quarter-to-date data diffusion index rose 30 points, as releases came in much better than expected. During the same period, 10-yr Treasury yield remained essentially unchanged, resulting in a disconnect between the 2 metrics.

**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—12/2/2017)**




Source: Federal Reserve Bank of Philadelphia

After declining to -0.37 in late August, ADS index staged a robust recovery, surging to the highest level since March 2014. The reading is consistent with other indicators that point to a strengthening economy. The comparison is relative to trend growth of about 2%, represented by the flat line.

**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.

# Minnesota Makes COPs Debt Service Payment Despite Lack of Funding

*By Rachel Barkley | Vice President*

The state passed a $45.6B General Fund fiscal 2018-2019 budget in May. However, Governor Dayton, a member of the Democratic-Farmer-Labor Party, vetoed funding for the Republican-controlled Legislature ($129MM) in an attempt to have them return for a special session to renegotiate tax cuts. The Legislature had previously passed the Omnibus Tax Bill, which will increase the threshold for the estate tax from its current level of $1.8MM to $3MM by 2020. The bill included a measure that would have denied appropriations to the Department of Revenue if it had been vetoed, leading the Governor to allow it to become law despite his opposition. Governor Dayton also cited his objection to bills eliminating the automatic indexing of tobacco taxes to inflation, freezing the statewide property tax levy on business property (C-I property), providing driver's licenses to undocumented residents and amending the teacher license provision.[1]

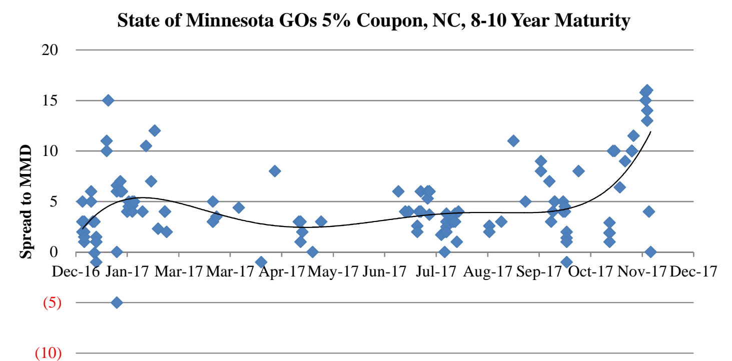
The defunding of the Legislature was particularly important for bondholders as it draws from this funding revenue to pay debt service on $80MM of outstanding COPs (NR/AA/AA+ M/S/F). S&P placed its ratings on Minnesota on a negative rating watch in June due to the non-appropriation of COPs debt service.[2]

The matter was taken to court. The Ramsey County District Court (62-CV-17-3601) found the Governor's veto unconstitutional as it violated the state constitution's separation of powers clause and issued an injunction requiring emergency temporary funding for the Legislature through at least October 1st. [3] The parties agreed that during the appeal period, the Department of Management and Budget (MMB) would continue to fund the Legislature at a level equal to fiscal 2017 base funding and the Legislature could petition the district court as needed for extraordinary and unanticipated expenses.[4] This allowed COPs debt service payments to continue on a timely basis for the past few months.

The Supreme Court reversed the lower court's ruling in November, finding the Governor did not violate the state constitution and bringing the Legislature's funding issues to a head. However, funding for the December 1st $1.9MM debt service payment had been set aside and was made in full. The Legislature has announced that it will borrow $20MM from a legislative agency, the Legislative Coordinating Commission, to fund itself until the beginning of the next legislative session, which begins February 20th.

The next debt service payment on the COPS, totaling $4.1MM, is scheduled for June 1st. This should give the government ample time to resolve the budget dispute. In addition, there is a precedent requiring debt service payments to continue to be made despite government turbulence. A budget impasse in 2011 led to government shutdown for 20 days. At that time, the Ramsey County District Court ruled that the state was required to continue funding all critical services during the shutdown, which included debt service payments.[5] Fitch Ratings stated in December that an inability to come to an agreement on legislative funding would likely result in a downgrade of not just the 2014 COPS, but also the state GO.[6]

The 2014 COPs don't trade frequently enough to determine any meaningful trends, while spreads on Minnesota's GO bonds over the past year have remained within a 15 basis point spread to the MMD AAA scale.




*Source: Bloomberg, Eikon, TM3 and Loop Capital*

[1] Letter to Leaders. Office of Governor Mark Dayton, May 30, 2017.
[2] Minnesota AA+ General Obligation Debt Rating On Watch Negative On Nonappropriation Of Certificates of Participation. S&P Global Ratings. June 15, 2017.
[3] *Ninetieth Minn. State Senate v. Dayton*, 62-CV-17-3601.
[4] Ninetieth Minn. State Senate v. Dayton, No. 62-CV-17-3601, Stipulation and Order 2
[5] Temporary Funding Core Functions of the Executive Branch of the State of Minnesota. Ramsey County District Court. 62-CV-11-5203.
[6] Minnesota's Unresolved Political Dispute Clouds Next Legislative Session. Fitch Ratings. December 6, 2017.

# Housing Market Update: A Cloud Hanging Over the Current Economy

*By Rachel Barkley | Vice President*

Despite the overall positive economic environment, home sales remain down year-over-year due to low supply and escalating prices, affecting home sales, construction activity and ultimately, property tax bases.

Total October existing-home sales increased 2% in October on a month-over-month basis to an annual rate of 5.48 million.[7] This is the highest annualized level since June's 5.51 million, although it is 0.9% below October 2016 levels. All four major regions (Northeast, South, Midwest and West) realized monthly gains, while the West is the lone region with a YoY increase in sales. The South, which had the largest YoY decrease, was affected by recent storms. NAR expects home sales in Texas and Florida to recover to pre-hurricane levels by the end of the year.

**Annualized Home Sale Levels**
**October 2017**

| Region | Annualized Level in 000s | YoY % Change |
| --- | --- | --- |
| South | 2,160 | -1.8% |
| Midwest | 1,310 | -1.5% |
| West | 1,270 | 0.8% |
| Northeast | 740 | 0% |

*Source: National Association of Realtors*

Total housing inventory has fallen for 29 consecutive months and is now down 10.4% YoY. Available inventory is currently equal to 3.9 months of supply, well below the industry equilibrium of six months.

The median price for an existing single-family home has risen 5.4% YoY to $248,300. Regionally, the West realized the largest YoY increase at 7.8% and remains the highest cost region with a median price of $375,100. The Midwest, which has the lowest median price of $194,700, had the second largest YOY increase of 7.1%. The Northeast's 6.6% increase brought its median price to $272,800, while the South had the smallest YoY growth (4.6%), increasing the median price to $214,900.

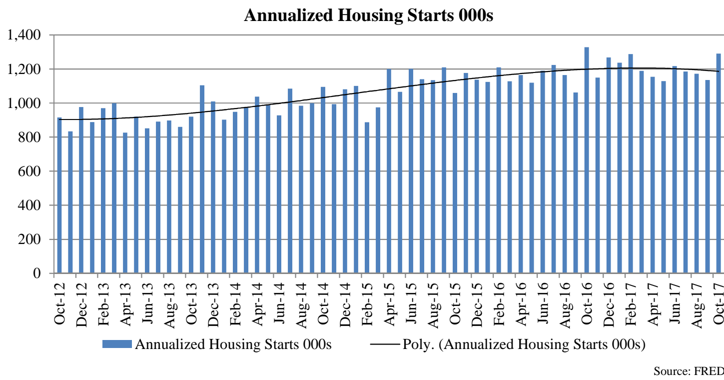
First-time buyers have represented 34% of buyers YTD, the fourth lowest percentage since 1981 and below the 36-year average of 39%.[8] Survey findings from the National Association of Realtors (NAR) indicate student debt is delaying young adults' ability to buy homes by roughly seven years. First-time home buyers now have a median age of 32. New household formation is particularly important as it spurs additional purchases, such as furniture and appliances, at a greater rate than those moving between houses. New homeowners also allow current homeowners the ability to move to larger houses by purchasing their starter-homes.

The slowdown in sales is beginning to affect local governments' property tax bases. Moody's expects local government property tax revenue to increase between 2% and 4% in 2018, a slowdown from the past three years.[9] This is particularly important as property taxes typically account for the largest source of local government funding.

There are some positive signs for the market going forward. The ability to secure a mortgage appears to be less difficult for buyers, with 34% indicating they experienced obstacles in the approval process, down from 37% a year prior.[10] Home prices also remain relatively affordable despite the recent increase in buyers. The Federal Reserve Bank's housing affordability index, currently stands at 160.7, indicating a family earning the median family income has 160.7% of the income necessary to qualify for a conventional loan, assuming a 20% down payment. [11]

In 2018, inventory will need to increase at a more rapid rate in order to prevent a further slowdown in sales, with an increase of roughly a million units needed to increase inventory to a six month supply. However, rising construction costs and a lack of available labor have hampered construction efforts. [12] Housing starts for October were equivalent to a 1.29 million annualized rate, the highest level YTD, although they remain 2.9% below the year prior.[13] Housing starts typically peak in the last quarter of the year, in anticipation of the upcoming Spring-Summer selling season.

[7] National Association of Realtors
[8] First-time Buyers Stifled by Low Supply, Affordability: 2017 Buyer and Seller Survey. NAR.
[9] 2018 outlook stable as tax revenue grows slowly; pressures intensify for some issuers. Moody's Investors Service. December 6, 2017.
[10] First-time Buyers Stifled by Low Supply, Affordability: 2017 Buyer and Seller Survey. NAR.
[11] FRED
[12] NAR
[13] FRED



Source: FRED

Housing building permits indicate housing starts will increase in coming months. An annualized rate of 1.32 million of housing permits were authorized in October, above the October level of housing starts and a 2.4% increase in authorized permits from the year prior.[14]

The impact of the potential federal tax reform, including limiting the deduction for home loan debt and either the elimination or limitation of deducting local property tax from federal tax liabilities, may also affect home sales in 2018, although the extent of this is still unknown.

[14] FRED

# Fires, Like Hurricanes, Have Names Too

*By Maura Murrihy, CFA | Vice President*

Closing in on Los Angeles, the latest wildfires are called Thomas, Creek, Rye, Skirball, and Ventura. Others named after their neighborhoods Lilac, Liberty and Sweetwater have swept toward San Diego and are taking on a life of their own. They rage on, fueled by high gusts of up to 60-80 miles per hour called "purple" winds and are driving into some of the most densely populated and most expensive areas of Los Angeles and now are heading north into Santa Barbara.

*Southern California Fires--Partial Damage Estimates*

| Fire | Primary Location | Acres Destroyed |
|---|---|---|
| Thomas | Ventura/Santa Barbara Counties | 230.0 |
| Creek | Slymar, LA Cty | 15.0 |
| Rye** | LA Cty | 6.0 |
| Skirball | Bel Air, LA Cty | 0.5 |
| Lilac | Bansall, San Diego Cty | 4.1 |
| Liberty | Murrieta, Riverside Cty | 0.3 |
| Sweetwater | Denasco, San Diego Cty | NA |

*As of Monday 12/10

**6K structures at risk — Source: Bloomberg

## Chronology

The first fire began on Monday, 12/4, near Thomas Aquinas College in Santa Paula, according to the Los Angeles Times. By late Wednesday evening, 12/6, CA weather experts had issued a red flag warning for most of Southwest CA, specifically the areas of LA County, San Fernando Valley and Ventura County. The alarm, expected to be reclassified to an even direr purple alert shortly, lasts until Sunday 12/10 and cites "extremely critical risk" of fire weather, its most severe classification.[15] In an extremely unusual move, the Comptroller of the Currency declared on December 7th authorized banks and savings and loans to close at their discretion as long as necessary for public safety. By 12/8, President Trump had declared a state of emergency. Following the migration of flames northward to Santa Barbara County on 12/11, officials revised their estimate of containment from 15% back down to 10%.

What is different this year is a massive drought which dates back to March 2017 and has rendered land extremely vulnerable to the slightest brush fire. The emergency can be blamed on "Santa Ana Winds,"[16] which move from east to west over the Sierra Mountains leading to exceptionally dry conditions.[17] One UCLA climatologist said it was the second driest quarter-to-date on record. Southern California has suffered a severe drought since last March. According to one meteorologist, "there is no hope of rain out there at least until the winter solstice" on 12/21. [18]

At this writing, hundreds of thousands have been put on alert and 212,000 have been evacuated. On December 5th, one such wildfire erupted near Interstate 405, causing highway closures and emergency evacuations. The highways is the major artery connecting downtown Los Angeles with the San Fernando Valley and other residential areas. Another fire affecting Ventura and Ojai, ballooned to 65,000 acres, destroying 150 buildings and putting another 12,000 in peril.[19] On Sunday morning, 12/9, only 15% of the largest fire, Thomas, had been contained but by 12/11, that percentage was downgraded to 10% after it had begun to spread northward to Santa Barbara County. Data analytics provider CoreLogic has estimated that there are over 86,000 homes at risk from Thomas, Rye and Creek; the cost to reconstruct these homes is pegged at $28 billion. The raging wildfires in Southern California have damaged about more than 255,000 acres.

## The Fallout

So far in 2017, California has seen other extensive destruction caused by wildfire. The latest December crisis in LA follows the most destructive wildfire in California history two months ago. Until now the state's most devastating wildfire, this October disaster resulted in more than 40 fatalities.[20] [21]

***"The forecast for Thursday (12/8) is purple. We've never used purple before... We're talking winds that can surface that can be 80 miles an hour. There will be no ability to fight fires in these kinds of winds."***

***– CA Dept. of Forestry and Fire Protection***

[15] www.spc.noaa.gov/products/fire

[16] Paige Austin. "Santa Ana Wind: 'We've Never Used Purple Before." Pasadena Patch. December 7, 2017.

[17] Randy Besnik. "Southern California's Fire Situation Is About to Worsen with 'Epic' Winds Predicted." The Washington Post. December 6, 2017.

[18] Brian K. Sullivan. "Winds Fan Southern Claifornia Wildfires While East Coast Chills." Bloomberg. December 11, 2017.

[19] Richard Perez-Pena. "California Fires: Blaze Breaks Out Near Getty Center in Los Angeles." New York Times. December 6, 2017.

[20] Christopher Palmeri, Jennifer Kaplan and Mark Chediak. "L.A. Fires Halt Filming, Menace Crops Send Edison Punging." Bloomberg News. December 7, 2017.

[21] Dale Kasler. "Wine Country Wildfire Costs Now Top $9 Billion, Costliest in California History." Sacramento Bee. December 6, 2017.

The website AccuWeather has predicted that "the economic toll of the (entire) 2017 wildfire season in California will rise to $180 billion," about 7% of California's total GDP.[22] The latest round of wildfires has damaged over 255,000 by last count. It is too early to gauge the magnitude of recent economic loss. However, the Wine Country disaster in Sacramento Valley in October, which caused 245,000 acres of damage and destroyed more than 8,000 residences, gives a frame of reference. The risk modeling firm RMS has estimated the economic loss attributable to Northern California at $3-6 billion, which would mean that it was one of the largest natural disasters in the state's history. The current December disaster is on its way to surpassing that threshold.

Another consequence will be for insurers with California exposure, although property-casualty stocks seem to be taking the news in stride with the S&P500 P&C Index (S5PROP) off just -1.1% from a 12-month high achieved on 12/4/17. To be sure, it has been a rough year for property-casualty companies' catastrophe (CAT) losses following Hurricanes Harvey and Irma, in addition to the Wine Country wildfires in Northern California in October. (Some believe the unusual large spate of CATs will lead to further hardening of P&C rates and that all this bad news will translate to good news for the industry.)

According to Bloomberg, the top insurers in California are State Farm, Farmers, CSAA, Travelers, Allstate and Chubb. So far, insurance claims for the blazes in Sonoma Valley and Napa Valley have reached $9.4 billion according to California Insurance Commissioner Dave Jones, approximately one-third of which has been already paid out to policy holders for damaged property.[23] Travelers has disclosed October wildfire CATs at $525-675 million, American International Group expects $500 million and Allstate has disclosed that that of its $516 million pretax CAT losses in 3Q'17, 90% relate to the Northern California wildfires.[24]

The personal loss to residents may be harsher going forward because Congress is now in the process of attempting to eliminate the tax deduction for personal casualty losses, including those from natural disasters such as earthquakes and wildfires.

The current risk to the LA and broader Southern CA economies is difficult to quantify at this early juncture. But the implications for agriculture are stark. Ventura County is a major citrus producer and accounts for one-third of the state's avocado production. The ratings agency Standard & Poor's acknowledged that agricultural communities have a longer path to recovery and are dependent on outside aid from the US and the state as well as from insurance proceeds. The city of Jacksonville, Florida is still waiting for Federal hurricane relief from FEMA, not for Hurricane Irma from September 2017 but from Hurricane Matthew in 2016.[25]

But Californian utility stocks are taking it on the chin, particularly in the wake of a November 30th regulatory judgement by the California Public Utility Commission, which voted 5-to-0 to disallow Sempra Energy from passing on wildfire-related costs to consumers in a case dating back to a 2007 disaster. The judgement was made under the legal theory of "inverse condemnation," which means that even if a utility is not negligent, it can be held liable for damages if utility equipment causes substantial damage.

This ruling could set a critical and disastrous legal precedent for utility companies going forward. The largest utility, Pacific Gas and Electric (PGE) has been pummeled this quarter, losing one-quarter of its market capitalization, because investor now fear that it will be held liable for a broad range of costs of the October fires in Northern California, including fire suppression expenses, personal injury damages and other costs. Its third quarter 10Q recently stated that PCG could be liable for up to $13 billion. (The CPUC has been asking PCG for information about power lines not proactively shut off last October.) Edison International (EIX) is particularly exposed to Southern California; its stock plunged 13% from a recent high on 11/14, reflecting investors' concerns that its power lines could be responsible.

On 12/11, ratings agency Fitch commented on how the issue of inverse condemnation could raise black clouds of uncertainty for many years, especially because of the length of the regulatory oversight process. (No ratings or outlooks were changed, however.) Moody's and S&P thus far have been silent on consequences on the CA utility industry and on the current wildfires in general.

***"This is kind of the new normal. We are facing a new reality in this state where fires threaten people's lives, their property, their neighborhoods and, of course, billions and billions of dollars."***

***– CA Governor Jerry Brown***

[22] Dale Kasler. "Wine Country Wildfire Costs Now Top $9 Billion, Costliest in California History." Sacramento Bee. December 6, 2017.
[23] Bloomberg.
[24] www.creditsights.com

[25] David Bauerlein. "FEMA Money Running a Hurricane Behind." The Florida Times-Union. www.jacksonville.com. December 2, 2017

# Municipal Volume Forecast for 2018

*By Ivan Gulich | Senior Vice President*

*We forecast new issue volume of $325 billion for the coming year, about 20% below expected $405 billion muni bond issuance in 2017. Our estimate is predicated on the assumption that the tax reform will eliminate advance refundings effective January 1st 2018, but not issuance of private activity bonds (PABs). If PAB issuance is eliminated as well, we expect $305 billion in new issue volume next year.*

We have first used a quantitative model to estimate 2018 new issue volume, while ignoring the impact of proposed tax reform. This estimate was subsequently adjusted to reflect the impact of muni-related provisions of the tax legislation on issuance, which is how we arrived at our forecast.

**Methodology**

Our forecasting model is based on regression analysis. We ran multivariate regressions using different combinations of factors to develop the optimal model. The challenge was to identify and test variables that are predictive of new issue volume, while satisfying statistical criteria regarding significance and explanatory strength.

This approach allowed us to assess the sensitivity of changes in expected volume to changes in each of the variables in the model. Financial market variables that were analyzed include the level of interest rates, ratios and the slope of the Treasury and municipal yield curves. We have also tested economic variables that reflect fiscal environment, such as employment and tax revenues at state and local levels, for inclusion in the model. Finally, we have incorporated variables that account for changing attitudes toward the size of state government and the burden of pensions, which is reflected in the GOP strength in state capitals.

The variables chosen were:

- Bond Buyer Weekly 20-Year GO Yield
- The change in 5-Year MMD Yield
- Local Government Payroll
- State Tax Receipts
- The percentage of states with a Republican Governor and Legislature

GOP control of both state legislature and governorship creates the most restrictive environment for muni issuance, which was captured by an interaction term. Squaring the last variable captured some of the non-linearity of the volume data.

In addition to independent variables we have included a lagged variable in the regression as well, since monthly volumes are serially correlated.

Our sample consisted of monthly data from January 2006 through December 2017.

All variables in our model were statistically significant. On a 12-month rolling average basis, forecasted annual volumes were within 3% of actuals, based on in-sample forecasting. Last year, we used the same model to forecast $395 billion in new issuance in 2017, an estimate which turned out to be within 3% of expected actual volume.

**Discussion**

Based on estimated inputs, our model produced a new issue forecast of about $380B for 2018, excluding the impact of the tax reform.

New money volume has experienced gradual recovery over the last three years. While state and local governments and authorities remain concerned about rising debt service and pension burdens on general fund budgets, relative strong growth in state and local revenue will continue to support new money issuance. In light of Republican dominance of state legislatures and governorships we expect modest to moderate increase in new money volume in 2018.

Volatile refunding volume is, generally speaking, driven by interest rate levels and the relative shape, curvature, and slope of the municipal and Treasury yield curves. Refunding volume peaked in 2016, when muni rates touched historic lows, but declined in 2017, as yields rose 35 bps, on average, across maturities. Under normal circumstances we would expect refunding volume to continue its decline in 2018 due to the rise in rates as well as fewer advance refunding candidates.

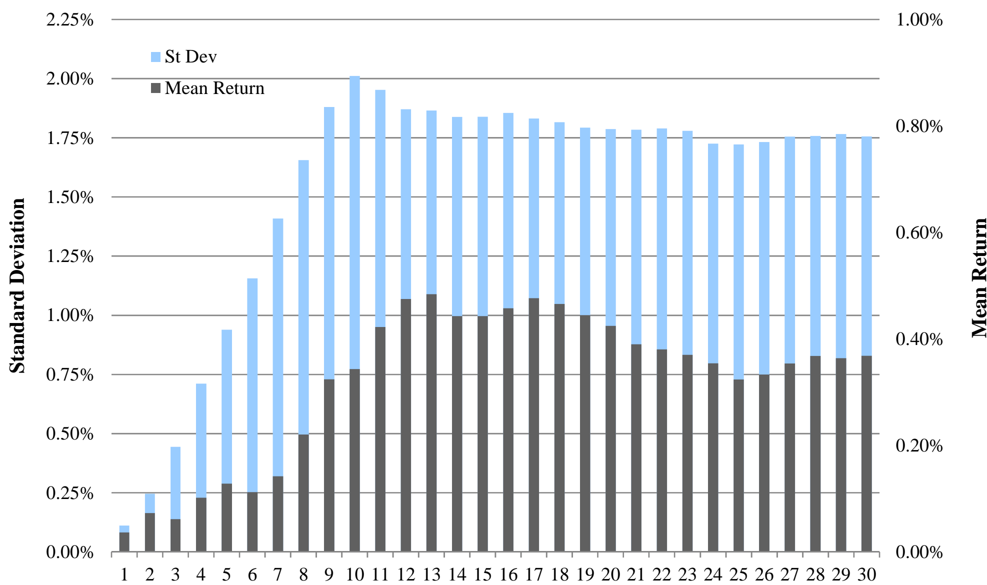
Since both House and Senate versions of tax reform legislation have eliminated tax exemption for advance refunding, we have adjusted the forecast generated by the model accordingly. The fate of private activity bonds (PAB) is unclear, as they were eliminated in the House bill, but spared in the Senate.

Finally, some of the volume slated for 2018 was pulled into 2017, thus reducing next year's issuance. This volume consists of advance refundings, as well as housing and healthcare (PAB) deals.

By adjusting the forecast generated by our model for anticipated effects of the tax reform, we have arrived at our base estimate of $325 billion in new issue volume for the coming year, predicated on the assumption that the tax reform will eliminate advance refundings effective January 1st 2018, but not issuance of private activity bonds (PABs). If PAB issuance is eliminated as well, we expect $305 billion in new issue volume next year.

# Market Review *Historical Monthly Bond Price Changes*

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




Sources: Loop Capital Markets

We show historical bond price changes for each point on the muni benchmark callable curve during the month of December for the last 16 years.

The returns in December were positive about 2/3 of the time, with bond prices rising, on average, 0.32% across the curve.

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

**AAA MMD - MONTHLY PRICE CHANGE**

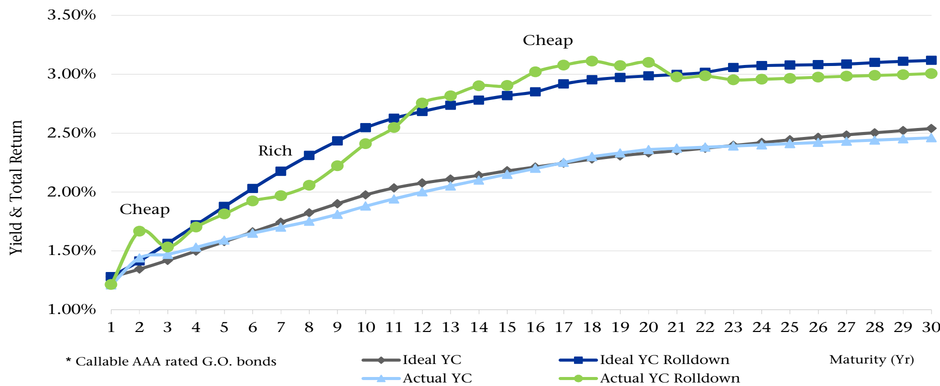
| Maturity | 5 | 10 | 15 | 20 | 25 | 30 |
|---|---|---|---|---|---|---|
| **Dec-01** | -0.79% | -1.85% | -1.53% | -1.07% | -1.37% | -1.37% |
| **Dec-02** | 1.79% | 2.70% | 2.60% | 2.18% | 1.86% | 1.86% |
| **Dec-03** | 0.13% | 1.21% | 1.03% | 0.87% | 0.71% | 0.71% |
| **Dec-04** | 0.76% | 1.12% | 1.28% | 1.43% | 1.26% | 1.18% |
| **Dec-05** | 0.22% | 0.88% | 0.87% | 0.95% | 1.19% | 1.27% |
| **Dec-06** | -0.49% | -0.95% | -1.03% | -1.10% | -1.18% | -1.26% |
| **Dec-07** | 0.27% | -0.08% | 0.24% | 0.24% | 0.00% | 0.00% |
| **Dec-08** | 2.07% | 4.06% | 2.95% | 2.53% | 2.36% | 2.68% |
| **Dec-09** | -0.31% | -1.76% | -0.24% | 0.24% | 0.63% | 1.03% |
| **Dec-10** | -1.21% | -2.94% | -3.14% | -3.49% | -3.33% | -3.10% |
| **Dec-11** | 1.23% | 3.24% | 2.70% | 2.68% | 2.26% | 2.34% |
| **Dec-12** | -0.77% | -2.03% | -2.58% | -2.65% | -2.80% | -2.87% |
| **Dec-13** | -0.36% | -0.97% | -0.64% | -0.48% | -0.47% | -0.71% |
| **Dec-14** | -0.76% | 0.33% | 1.31% | 1.30% | 1.14% | 1.22% |
| **Dec-15** | 0.00% | 0.82% | 1.31% | 1.39% | 1.14% | 1.14% |
| **Dec-16** | 0.27% | 1.72% | 1.96% | 1.79% | 1.78% | 1.78% |
| **Mean** | 0.13% | 0.34% | 0.44% | 0.42% | 0.32% | 0.37% |
| **St Dev** | 0.94% | 2.01% | 1.84% | 1.79% | 1.72% | 1.76% |

Source: Loop Capital Markets

The 10-yr point was most volatile, with standard deviation of monthly bond price changes of 2.01%.

# Market Review *The Yield Curve*

*Figure 6* **1-Year Forward Roll-down—Muni Benchmark Curve* (December 6, 2017)**

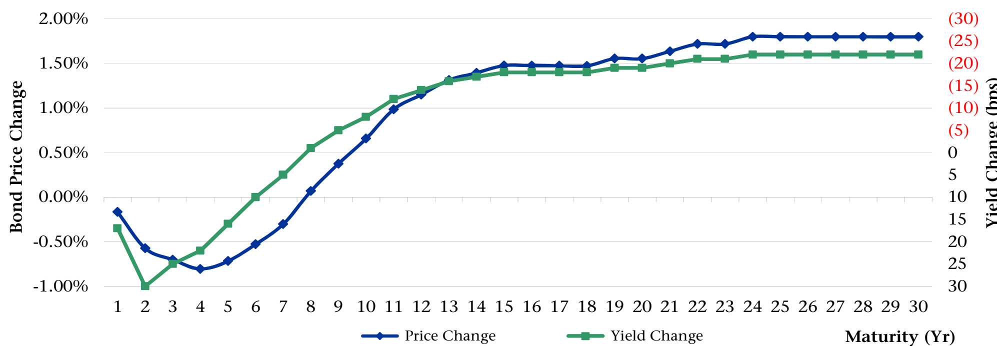



Source: Loop Capital Markets | *Callable AAA-rated G.O. bonds

The yield curve shows rich (6 to 11-yr, 23+ yr) and cheap (2-yr, 12 to 20-yr) points on the AAA MMD curve, based on one year holding period returns and assuming no change in the yield curve. 18-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.

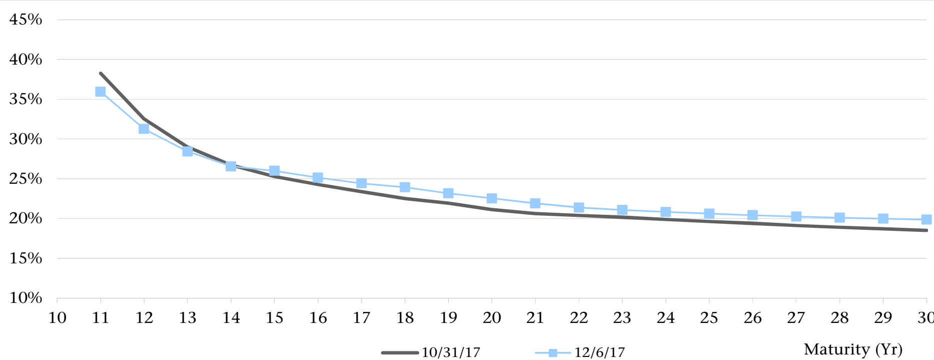
*Figure 7* **Monthly Price Change — AAA GO Bonds* (11/6/17 — 12/6/17)**




Source: Loop Capital Markets | *Price Change Only

The curve has flattened significantly over the past month. Yields rose 30 bps at 2-yr point and declined 22 bps on the long end of the curve, where prices rose about 1.5%.

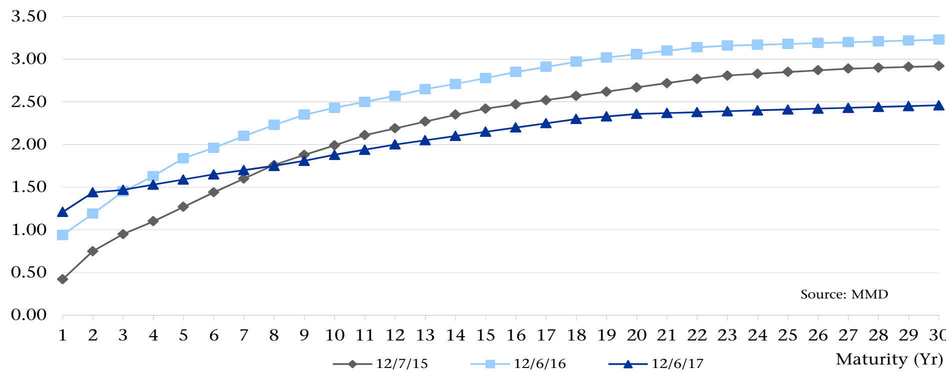
*Figure 8* **Implied Municipal Volatilities**




Source: Loop Capital Markets | *10-year call

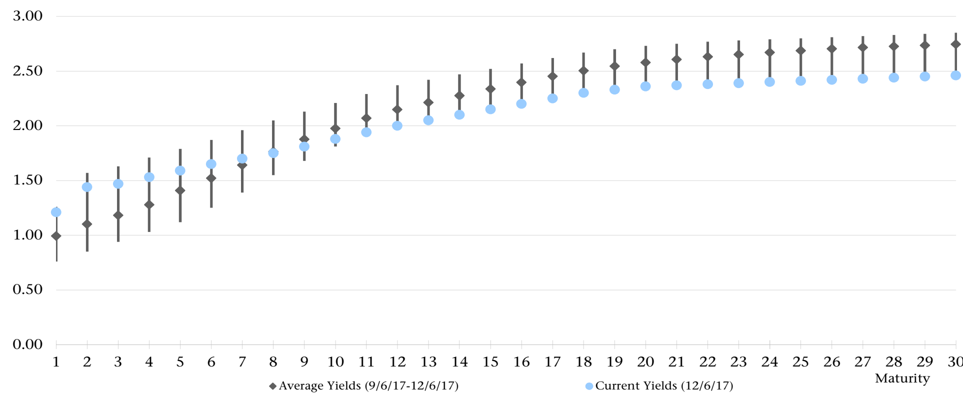
Implied volatilities rose marginally in the 15 to 30-yr range since October.

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



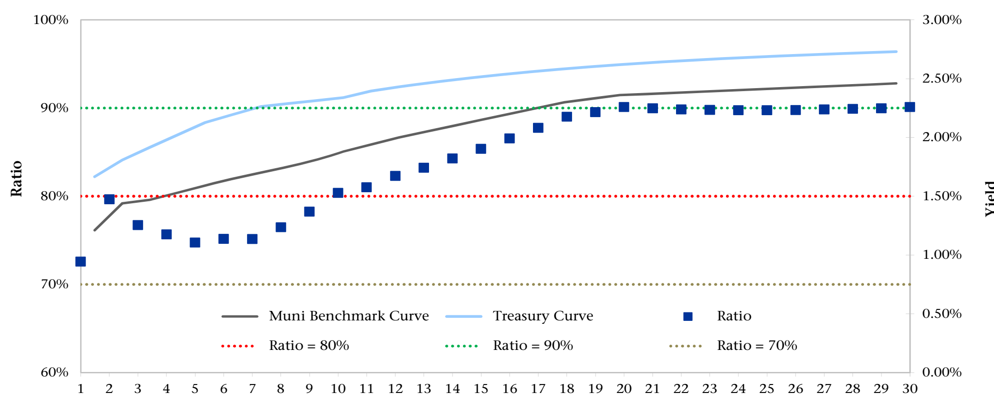

The curve has flattened by about 125 points over the last 2 years. Yields are 75 to 80 bps lower on the long end of the curve today than they were a year ago.

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




Due to curve flattening, the yields are at their lowest points in 3 months in the 12 to 30-yr range and above average on the front end of the curve.

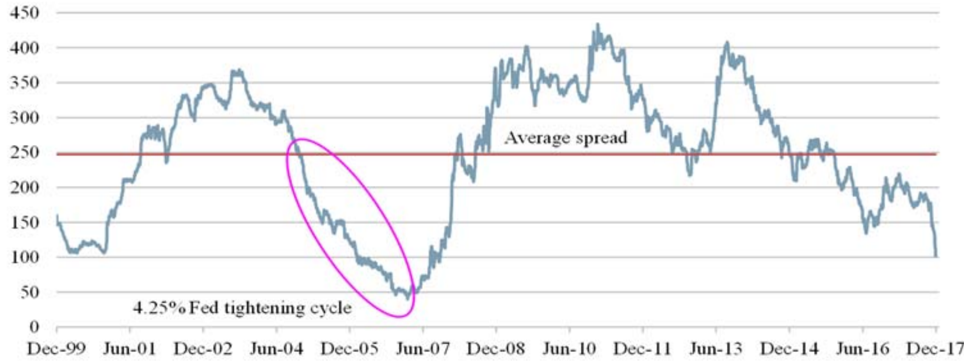
*Figure 11* **Muni and Treasury Yield Curves and Ratios**




As munis rallied the ratios have declined across the curve except on the front end, where 2-yr maturity appears cheap.

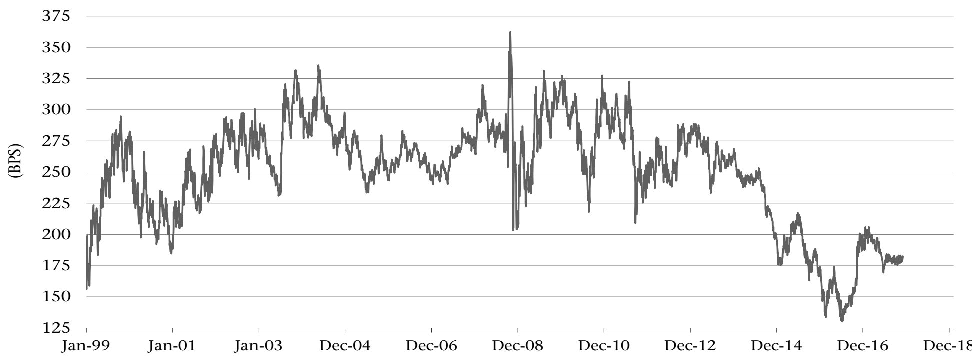
# Market Conditions

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




The yield curve flattened by 82 bps since the end of September and is currently the flattest it has been in 10 years.

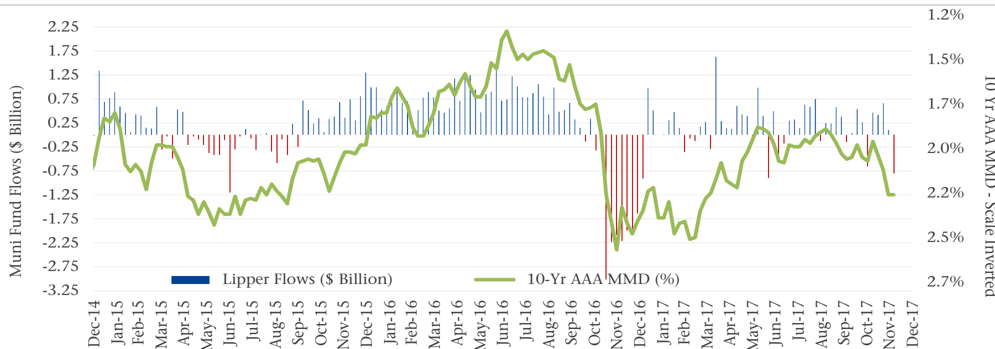
*Figure 13* **Inflation Expectations**




Source: FRED

Fed's five-year forward breakeven inflation rate, derived from TIPS and regular Treasury yields, has stabilized around 1.80% since May.

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




Source: Lipper

Even though Lipper flows have turned negative last week, the 4-week average remains positive $92.5 million.

# Loop Capital Markets Upcoming Negotiated Calendar

| Date | Par Amount ($ mil) | Issue | Loop Capital's Role |
|---|---|---|---|
| 12/12/17 | 795.3 | New Jersey Turnpike Authority Turnpike Revenue Bonds Series 2017 G | Senior Manager |
| 12/14/17 | 721.0 | City of Philadelphia Airport Revenue and Refunding Bonds AMT and Non-AMT | Co-Senior Manager |
| 12/12/17 | 508.5 | District of Columbia (Washington, D.C.) General Obligation Bonds | Co-Manager |
| 12/12/17 | 196.1 | Public Finance Authority Revenue Bonds, Series 2017 (Denver International) | Co-Manager |
| 12/12/17 | 131.5 | Maryland Health and Higher Ed. Fac. Auth. Univ. of Maryland Revenue Bonds | Co-Manager |
| 12/12/17 | 44.3 | Maryland Health and Higher Ed. Fac. Auth. Univ. of Maryland Taxable Rev. Bonds | Co-Manager |
| 12/12/17 | 74.3 | City of Cincinnati General Obligation Bonds, Tax-Exempt and Taxable | Co-Manager |

***In prison, the unit of exchange is:***

1) ***Cigarettes***
2) ***Time allotted for phone calls***
3) ***Bitcoin***

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