Winter 2018-19

FIRST PRINCIPLES QUARTERLY

FPCM

First Principles Capital Management, LLC

First Principles Capital Management is an investment management firm with expertise across the global fixed income securities and derivatives markets. The firm provides highly customized investment portfolios for its clients, which include prominent endowments and foundations, financial institutions, industrial corporations, pension funds, family offices and trusts.

The investment team has extensive experience and a noteworthy history of innovation in the debt capital markets. The investment process and client service model is founded on the principle that it is necessary to gain an understanding of client-specific objectives, constraints and idiosyncratic factors in order to design and execute on the optimal strategy for each client. The orientation of the team facilitates a continuous relative value assessment within and across fixed income asset classes.

Winter 2018-19

FIRST PRINCIPLES QUARTERLY

Contact:

First Principles Capital Management, LLC

140 Broadway, 21st Floor
New York, NY 10005
Tel: 212.380.2280
Fax: 212.380.2290
www.fpcmllc.com

In This Issue

CIO LETTER

Mark G. Alexandridis
Chief Investment Officer

malexandridis@fpcmllc.com
212.380.2293

Ave Atque Vale to Monetary Tightening

On January 30, the FOMC delivered a startling reversal on the expected path of monetary policy in 2019 from what was communicated in the previous meeting in December. It is certain to be the seminal event for financial markets in the near-term.

Specifically, the statements[1] indicated that the Committee: (1) did not explicitly see the need for further, gradual rate increases but that it will *patiently* assess the need for future adjustments, (2) acknowledged that while inflation was *near* the target, they believed inflation pressures were currently *muted*, (3) intimated that the risks to the economic outlook were no longer balanced, and (4) is prepared to alter the rules-based balance sheet normalization policy if future conditions warrant.

The marked change in sentiment is best illustrated by fed fund futures expectations of rate hike/cuts as shown below. In particular, the implied probability of at least one rate hike by December 2019 has plunged from 95% in October 2018, to 44% post December FOMC meeting, to only 3% presently. In fact, the market is pricing currently a greater risk of a rate *cut* (15%).

Table 1: Market-based hike/cut probabilities

	10/31/2018		2/1/2019	
	Hike	Cut	Hike	Cut
3/20/19	92.00%	0.00%	1.90%	0.00%
5/1/19	92.80%	0.00%	1.80%	2.00%
6/19/19	96.50%	0.00%	5.50%	2.00%
7/31/19	96.70%	0.00%	5.40%	3.60%
9/18/19	97.70%	0.00%	5.30%	5.20%
10/30/19	97.90%	0.00%	5.30%	6.30%
12/11/19	98.20%	0.00%	4.80%	13.90%
1/29/20	98.20%	0.00%	4.30%	23.20%

Source: Bloomberg

[1] https://www.federalreserve.gov/newsevents/pressreleases/monetary20190130a.htm

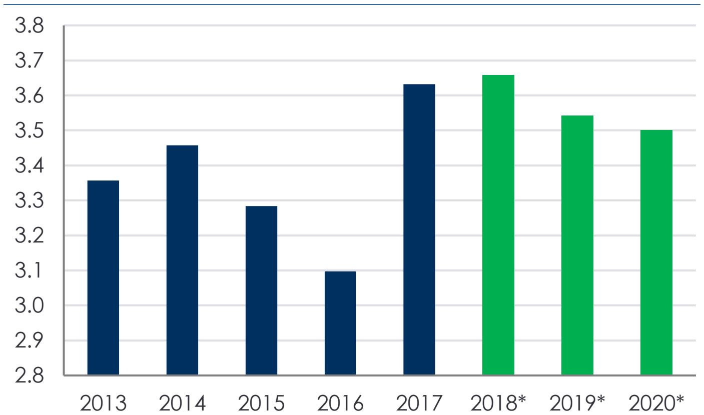
CIO LETTER

Evidently, the market's interpretation of the two statements and the post-meeting press conference is that the FOMC has emphatically sounded the death knell on the quantitative tightening program.

What happened?

As always, there are a constellation of continuously changing economic forces that have likely precipitated the policy about-face. Weakening global growth, decidedly underwhelming domestic outlook (e.g., 2019 GDP forecasts, quiescent inflation, softening consumer spending/confidence, corporate earnings, tightening financial conditions, trade tensions, government shutdown), and the violent Q4 sell-off in the equity and bond markets have captured the attention of the policy makers.

Chart 1: OECD Economic outlook world GDP growth [%]



Source: Bloomberg

*Estimates

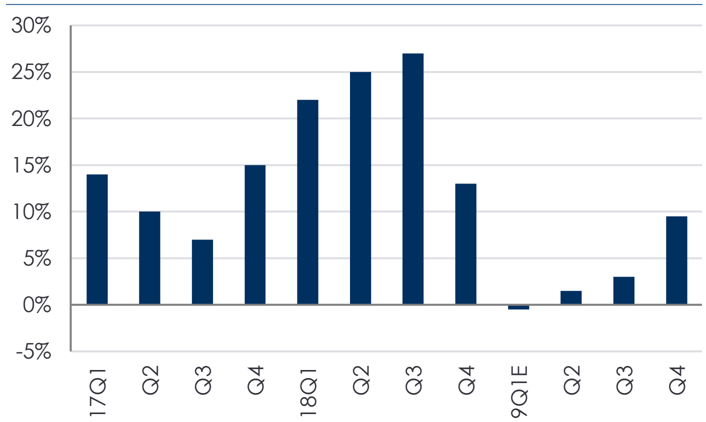
Chart 2: St. Louis Fed Financial Stress Index

Source: St. Louis Federal Reserve

Chart 3: Core PCE YoY [%]

Source: St. Louis Federal Reserve

Chart 4: S&P quarterly EPS growth



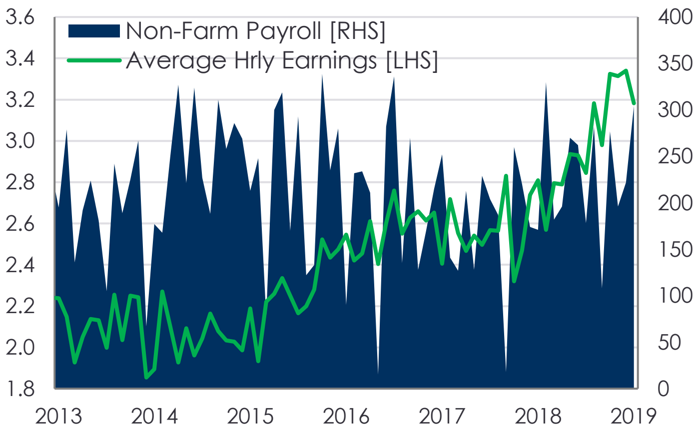
Source: Bloomberg

And there is tacit recognition that major central banks around the world are, at the present time, incapable of normalizing policy. The ECB, BOJ, BOE, and PBoC are either on hold or leaning towards providing more accommodation to their flagging/troubled economies. As such, continued isolated normalization by the Federal Reserve would inhibit their efforts to stimulate more growth and stem disinflation. A weaker dollar and less stringent financial conditions in the US are beneficial for both other developed and emerging economies.

On the other hand, the data are not uniformly somber. Nonfarm payroll growth continues to exceed vastly expectations despite ten years of expansion and wage growth firms above 3% YoY (although the average hourly earnings only rose by 0.1% in January after increasing by 0.3%

in December). And risk assets have recovered much of the losses experienced in December prior to the Fed meeting (e.g., S&P gained 8% and high yield returned 4% in January).

Chart 5: Non-Farm Payrolls vs Average Hourly Earnings



Source: St. Louis Federal Reserve

It appears as if the spectre of a weakening global expansion – it's still expected to grow at 3.5% as forecast by the IMF -- outside the US, tighter and more volatile domestic financial conditions, and moderating inflation have come to dominate what would normally be characterized as a thriving economy with solid job growth, wage inflation, and GDP growth of 2.0 - 2.5% as the FOMC updated its distribution of domestic economic outcomes.

Muddled policy or timely central bank risk management?

The decision to take simultaneously a pause in the program of gradually raising rates and to suggest that the well-telegraphed, measured normalization – aptly described by Chairman Yellen as interesting as watching paint dry – of the Federal Reserve's balance sheet was open for discussion is troubling on many levels.

The special statement signaled two potential changes. First that the Committee is responding to the turmoil and distortions experienced at year-end in short-term financing. They are attributing the stress to the consequent drawdown in reserves given the reduction in securities held in the portfolio and have now committed to provide *ample* reserves to ensure that the Federal Funds rate is the primary policy tool. This implies that the ultimate size of the balance sheet will be substantially larger than originally anticipated as they underestimated the immense demand for short-term, high quality assets imposed by Basel III, Dodd-Frank, money market reform, …

Secondly, the Committee expanded the language on reducing the holding of Treasuries and agency debt in the event of "… a material deterioration in the economic outlook". Rather than simply "resume reinvestment," the Committee instead was "prepared to adjust *any* of the details for completing balance sheet normalization … in light of economic and financial development." This conveys a much lower bar for taking, as yet, unspecified action to change and or terminate the program.

The fact that the Committee averred that both policies were subject to adjustment begs the question as to what is the instrument of monetary policy in the future? Is it still the Federal Funds rate or is it some amalgam of Federal Funds and the balance sheet?

The implementation of quantitative easing (QE) and interest rate policy were deliberately discharged as sequential events. Only after the FOMC slashed federal Funds rate from 5.25% in August 2007 to effectively 0.0% in December 2008 – beginning a seven-year period of zero interest rate policy (ZIRP) – did they embark on the first of the three quantitative easing programs and the 'twist' operation. Curiously, the FOMC made the decision to remove accommodation by first raising rates in 2015 and then reducing the size of the balance sheet in 2017. Perhaps the contractionary effects of tightening might have been lessened if the unwind mirrored the implementation of ZIRP and QE. And there would be less ambiguity about the interplay between the policy rate and the balance sheet.

What now?

The dovish posture adopted by the FOMC should serve to steady both the credit and equity markets in 2019 – even after the blistering recovery in January. And the signaling that the balance sheet normalization will doubtlessly come to an end sometime this year will restore some stability to short rates.

A key issue that needs to be addressed, in order to extend the expansion, is the shape of the Treasury yield curve. Presently, the curve is absolutely flat out to five years – perilously close to being inverted. A flat or inverted curve is damaging in that it will weigh on banks' willingness to lend and subsequently affect their profitability. And it is likely to inhibit real economic activity as conventional wisdom holds that curve inversion is a harbinger for recession.

Traditionally curves steepen because long-term real rates rise as investors anticipate greater growth prospects, inflation expectations climb, and/or the term premium rises. Given current circumstances none of these catalysts are likely to materialize. The exception could be the term premium if investors become concerned with deficits and the size of the national debt relative to GDP.

Otherwise, the FOMC will have to exert pressure on short-term rates to induce steepening through forward guidance, a change to the reinvestment policy for the portfolio of Treasuries and agencies, or ultimately a rate cut.

The March meeting statement and the new Dot plot should reveal the near-term strategy. Stay tuned.

MUNICIPALS

David Ho
MD, Asset Management

dho@fpcmllc.com
212.380.2292

QUICK READ

- Fixed income generally was well bid in fourth quarter 2018, as equities sold off sharply
- Treasuries were the preferred safe harbor over munis in Q4, but munis outperformed UST over 2018
- Given generally increasing costs of leverage and examples of scarce liquidity, we are very focused on liquidity in the near-to-medium term

Municipal bonds return positively for Q4 and 2018

The fourth quarter equity market melt-down induced panic buying in the fixed income market. Municipal bonds benefited from the flight-to-fixed income, but not quite to the same extent as Treasuries. AAA Bloomberg General Obligation Bond (GO) yields decreased by 23 basis points compared with Treasuries' rally of 34 basis points over the same fourth quarter period.

However, municipal bonds performed well vs Treasuries for the year long period of 2018. For the year, the Bloomberg Barclays Municipal Bond Index returned 1.28% vs the Bloomberg Barclays Treasury Index return of 0.86%. The decrease in supply of municipal bonds contributed to municipal bonds' relative out-performance over Treasuries. For 2018, gross municipal bond issuance decreased by 24.5% compared to 2017 issuance. On the other hand, gross Treasury issuance increased by 19.4% in 2018 compared to the prior year.

Mind the liquidity

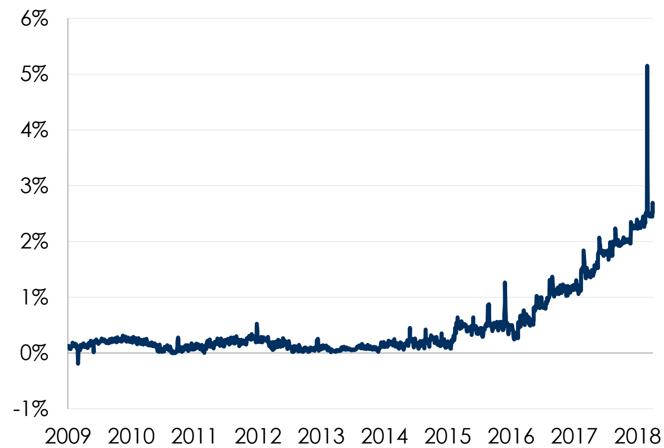
As the Fed has embarked on a tightening cycle, financing rates for investor positions have increased -- leverage has become more expensive. This increased cost has caused expected profit margins for leveraged positions to decrease, which means that during times of stress these same investors may hit the panic button sooner and could simultaneously stampede for the "exit." Thus, we think that at present -- more than any other time since the financial crisis of 2008 -- investors need to be wary of liquidity. Leveraged investors need to ensure funding is secured for comfortable periods of time, and the more counterparties to finance trades the better. For non-leveraged investors, if there are foreseeable cash needs in the near or medium term, it may be prudent to make sure now that there are sufficient liquid positions to cover those cash flow needs.

One general barometer of liquidity is the repurchase agreement (repo) rate. Repos are a mechanism by which investors are able to utilize leverage and repo rates are the level at which leveraged investors can borrow to finance their positions. The most liquid instruments in the world are perhaps US Treasuries and agency mortgage-backed securities (MBS) issued by Fannie Mae (FNMA) and Freddie Mac (FHLMC). Depository Trust & Clearing Corporation (DTCC) publishes an index called the General Collateral Finance Repurchase Agreement (GCF Repos) Index, which is the weighted average of the interest rates paid each day for the 3 most traded CUSIPs of US Treasuries or FNMA or FHLMC MBS. As such, the DTCC GCF Repo Index is a measure of the 1-day borrowing cost for the most liquid instruments in the world – rendering it, in our view, a very important barometer for liquidity.

As banks are typically cash lenders, they are usually on the other side of a repo trade. When the sizes of bank balance sheets become a concern, especially around quarter end, repo rates spike as banks demand higher rates to offset their balance sheet costs. Chart 1 displays the historical DTCC GCF Repo Index.

As we can see from Chart 1, the DTCC GCF Repo Index tends to spike up around quarter ends when banks become reluctant to lend as they report the size of their balance sheets. What stands out, however, is the spike on December 31, 2018. At the turn of this quarter, the DTCC GCF Repo index spiked up 260 basis points from the day before, more than any other one-day spike since Bloomberg started reporting this index in 2009. There was no clear explanation for why the increase was so dramatic this time around, and that should be a cause for concern for investors. This is an indicator to us that in future crisis situations, banks will be even more reluctant lenders than in the past. Therefore, we think investors, including municipal bond investors, should be prepared for those scenarios.

Chart 1: Historical DTCC GCF Repo index



Source: Bloomberg.

Market outlook

Projections for municipal bond supply in 2019 continue to be low. Technically, this should favor municipal bonds over Treasuries. However, after the risk-off induced flight-to-fixed income buying in 4Q18, absolute yields do not look that compelling for municipal bonds.

The market has recently found the Powell put for risky assets. This development may anchor short-term rates for the time being, but may also cause inflationary pressure to build up in the long-end of the curve. We think with a dovish Fed, the chance of the curve steepening outweighs the risk of the curve flattening and we would caution against investing in the long end of the yield curve for the medium-term. Further, for accounts that can invest in inflation-linked securities or inflation-linked derivatives, we think now may be a good time to purchase some inflation protection given the new Fed paradigm.

RATES

Laura Malvaez-Penaloza
VP, Asset Management

lmalvaez@fpcmllc.com
212.380.2285

QUICK READ

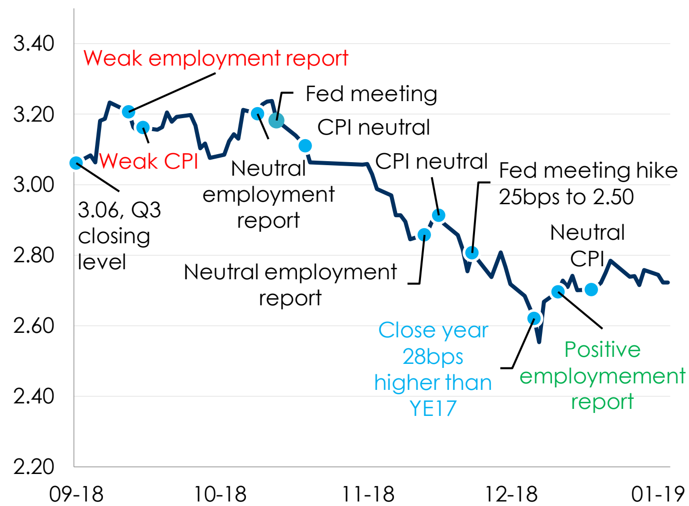
- It is yet to be confirmed whether the Fed is actually data-dependent or if it will cede to market demands
- With a change in messaging, market expectations for Fed rate policy have reversed course
- The patience mantra is emboldened by mild inflation prints and strong employment numbers
- The "background" policy mechanism that is the Fed's balance sheet has become top of mind for professional investors and the public alike

Peak or pause on tightening cycle?

The Fed is content to wait at this vantage point -- will the length of patient period depend on data, or on market demands?

The last quarter of 2018 was extremely volatile for risk assets. Equities hit correction levels and credit spreads widened significantly, as the market feared that the Fed's tightening was overdone and would have to reverse course imminently, thusly pricing in rate cuts. Market volatility was elevated in a backdrop of weakening global growth data, continuation of trade war fears, and other global macro risks such as Brexit.

Chart 1: 10-year Treasury yields [%]



Source: Bloomberg.

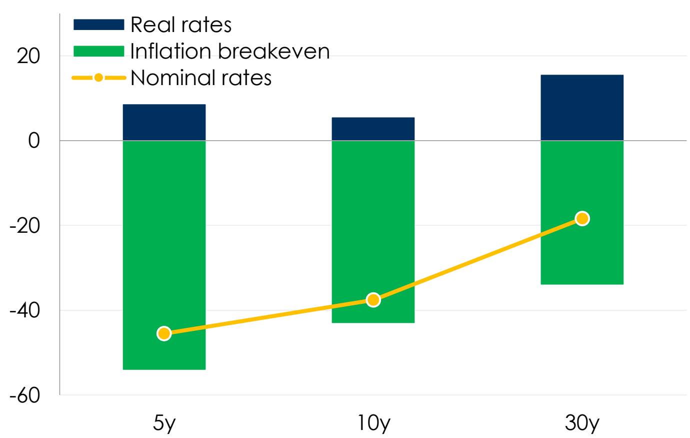
As rates moved lower, the long end of the curve steepened. The 10-year Treasury rate fell 38 basis points (bp) during Q4 after adding 28bp in 2018 (after 100bp of Fed hikes). The spread between the 5-year Treasury and the 30-year Treasury increased by 30bp. Most of the move in nominal rates can be attributed to lower inflation breakeven expectations.

Rates

Chart 2: 30-year UST yield minus 5-year UST yield [bp]

Source: Bloomberg.

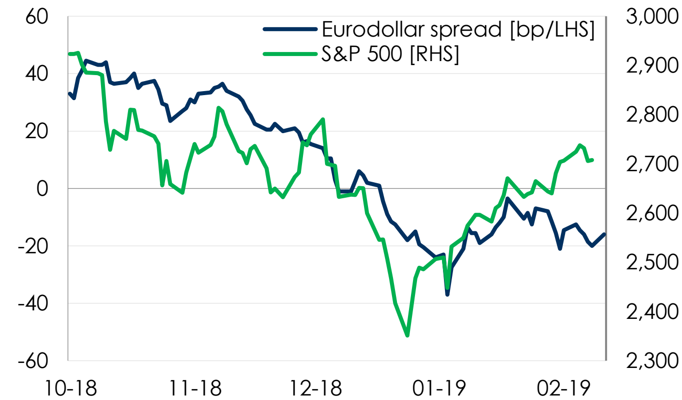
Chart 3: UST rate change decomposition by tenor [bp] Q4



Source: Bloomberg.

The Eurodollar curve (a measure by which market projections for future Fed funds rates can be observed) reached its highest implied pricing of rate hikes in October 2018, just before the SPX started selling off. Toward the beginning of December, conversely, it started pricing a not-too-distant rate cut -- the March 2019 through December 2020 potion of the curve inverted the most, projecting almost 40bp of rate cuts at the turn of the '18-'19 year. Since then, sentiment has improved but the Eurodollar curve is still inverted.

Chart 4: Eurodollar spread March '19 / Dec '20 vs S&P 500



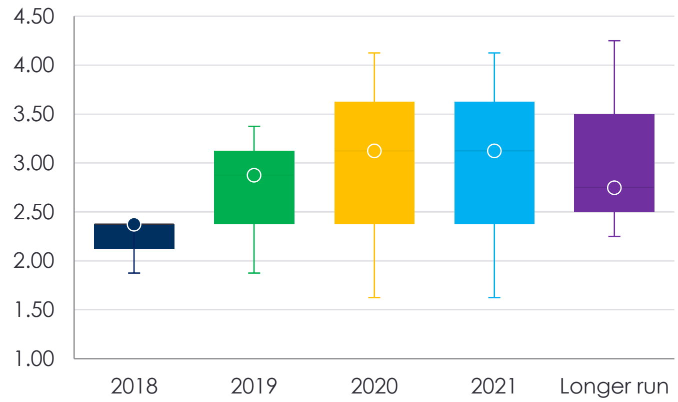
Source: Bloomberg.

The FOMC delivered the market-expected fourth rate hike in December and released the Committee's median projection of the number of rate hikes expected in 2019 -- revised down from three to two, and the median projection for the long-term rate also was revised lower to 2.75% from 3%. The minutes released in January revealed that the FOMC was concerned about the recent volatility in financial markets and that this warranted a pause on its rate hiking policy as "the Committee could afford to be patient about further policy firming."

Last year the Fed announced that there will be a press conference after each FOMC meeting from January 2019 (AKA "live meetings"), an initiative aimed to provide more transparency to the market and more flexibility to the Fed. January's FOMC rate policy decision was unanimously on-hold and Chairman Powell's statement was more market friendly (dovish) than expected. He mentioned that the Committee thought it is in a "good place" within the range of the long-term neutral range (lowest long-term dot at 2.50% close to current rate 2.35%), but they would like to see how the data develops given "muted" inflation pressures and firm employment. Powell also provided some insight into the FOMC's discussions related to the unwind of the Fed's balance sheet.

Rates

Chart 5: FOMC rate projections ranges [%]



Source: Bloomberg.

The process to reduce the size of the Fed's balance sheet – no more than $50bn per month ($30bn Treasuries and $20bn MBS) -- began October 2017 with a gradual reduction that reached its peak in October 2018. The process once characterized by former Chairman Yellen as interesting as "watching paint dry" suddenly took center stage in the minds of market professionals and even garnered the public's attention during the last quarter of the year. There have been many academic papers released discussing the effects of global quantitative easing and also estimates of the equivalent rate tightening/loosening. However, as Ben Bernanke said toward the end of his tenure as Fed chairman, "QE works in practice, not in theory[1]" which is why the Fed would like to keep it as an instrument of policy, but a "silent" instrument. Chairman Powell emphasized that the Fed's main tool is interest rate policy, confirming the sequencing of events in case they need to adjust conditions -- rates first, balance sheet second. The size of the balance sheet is close to where the FOMC believes it should be to support policy, as they would like to keep a policy tool ("floor system") that requires plenty of reserves. Given current market estimates of the size of those reserves at $1.2tn[2], the run-down could stop 3Q19 or 1Q20. The market awaits the next decision regarding the balance sheet – a decision that will have a potentially bigger impact on the relative value of Treasuries and the yield curve -- such as composition (Treasuries vs MBS) and duration of the assets.

Downside growth surprises may occur in 2019 as the effect of trade tensions feed through the economy, however, the Fed seems to be open to a course change should economic data significantly soften. The current environment should be benign for risk-assets and moderate rate volatility.

[1] https://www.brookings.edu/blog/up-front/2015/01/21/the-hutchins-center-explains-quantitative-easing/

[2] Bank of NY Survey of Primary Dealers Dec 2018.

INFLATION

Prasad Kadiyala

MD, Asset Management

pkadiyala@fpcmllc.com

212.380.2297

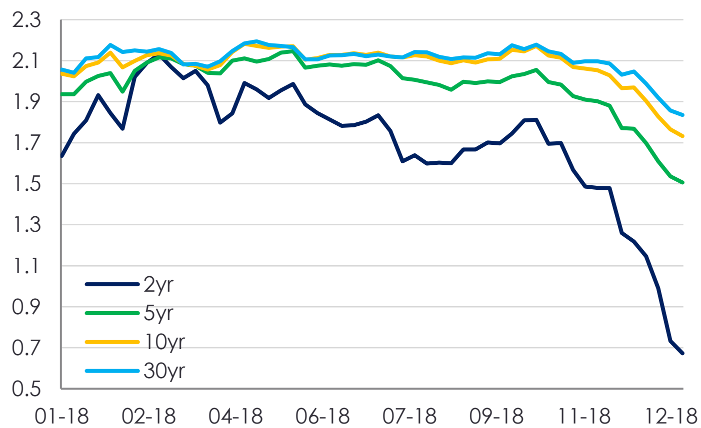
QUICK READ

- Core inflation remains near, but not at the Fed's target level
- Forward-looking expectations foresee muted-to-declining inflation
- Acyclical inflationary factors may not persist, thereby hampering support for PCE levels
- The market (and Fed) are skeptical that current methods can produce sustained target-level inflation

Core inflation was stable for 2018, with expectations for future inflation declining

Bureau of Labor Services reported an uptick in core inflation from 1.8% to 2.1% over the first quarter of 2018. After a single monthly spike of 2.4% (annualized) in July, core inflation stabilized around 2.2% for the remainder of 2018. However, market-data-implied breakeven inflation rates painted a different picture in Q4 of 2018. Inflation expectations plunged dramatically; they fell sharply in the front-end of the breakeven curve (Chart 1), but even 30yr expectations came down 30 basis points (bp).

Chart 1: Breakeven Inflation [%]

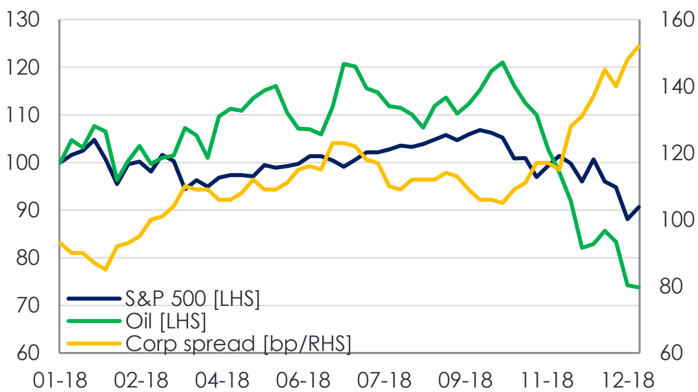


Source: Bloomberg

The selloff in inflation expectations coincided with a pronounced drop in risk sentiment and oil prices (Chart 2). Concurrently, economic releases pointed to a weakening trend in global macro conditions, the IMF revised downwards the growth expectations in the rest of the world, and there were increasing concerns about impending recession in parts of Europe. A Goldman Sachs model, built using a Fed-developed framework based on oil supply/demand, shows contributions to inflation expectations from various factors (Chart 3).

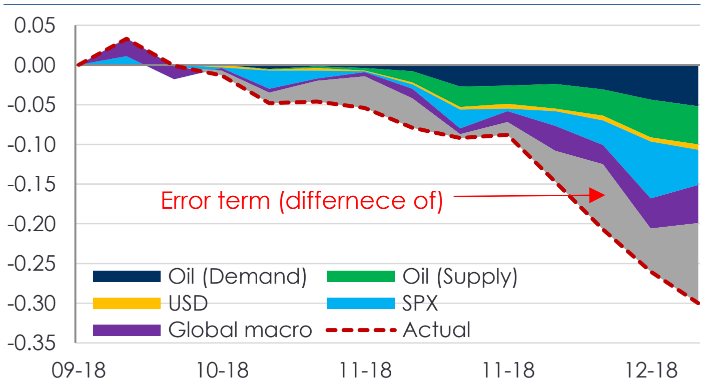
INFLATION

Chart 2: S&P 500 & oil (indexed @ 100) and IG corp spreads



Source: Bloomberg

Chart 3: Contribution to predicted change in 5y5y BEs [%]

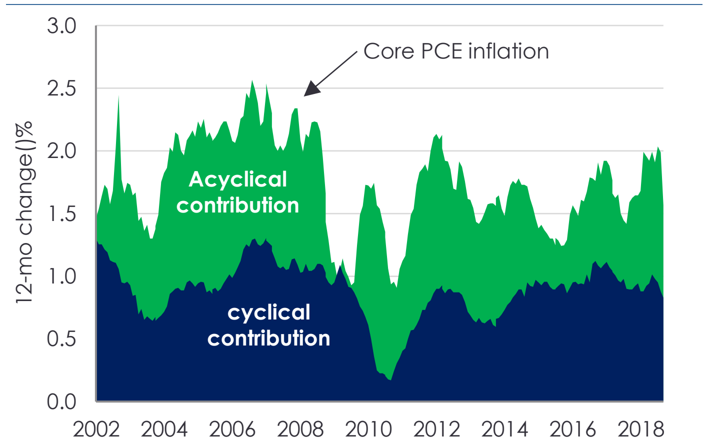


Source: Goldman Sachs Global Investment Research, Bloomberg

Was this selloff in breakevens in Q4 a one-off incident or could it potentially be a harbinger of some deep structural issues related to inflation? The Fed's preferred measure of inflation, PCE, touched the target 2% level in July, but has since eased off. Towards the end of the year, there was a striking shift in the Fed communiques. Throughout 2018 the Fed signaled its confidence in the growing economy and acted by raising policy rates regularly, but by year-end it had switched to a dovish tone. The Fed pointed to a number of broad weakening tendencies and risk factors rather than a single factor in its communication. A recent research article from the San Francisco Fed[1] analyzes inflation over the last 15 years and sheds some light on the experienced weakness in inflation. The author groups inflation into two categories: cyclical and acyclical. Changes in prices that move with the overall economic conditions are referred to as cyclical inflation. This category of inflation is more amenable for modeling under the classical Phillips curve paradigm and likely to be impacted by monetary policy.

Price changes could also emanate from business-specific reasons rather than from overall economic conditions. An example would be the observed changes to cell phone data plans in 2017. Such changes are grouped under acyclical fluctuations. The cyclical category covers about 42% of the PCE basket and includes housing, recreation services, food services, and some non-durable goods. The remaining 58% constitutes the acyclical basket and includes healthcare, financial services, clothing, and transportation. Data show (Chart 4) that while the cyclical category increased coming out of the recession, it has eased off slightly since 2016. The observed recent growth in PCE is due to greater than 0.5% growth in acyclical categories. Additionally, while health care related inflation has remained subdued, other acyclical categories have contributed to higher realized inflation. History shows that unlike for health care services, acyclical inflation for other categories do not persist and generally last for less than a year. A replay of this historical observation does not bode well for future acylical and PCE inflation.

Chart 4: Cyclical an acyclical contributions to core PCE



Source: San Francisco Fed

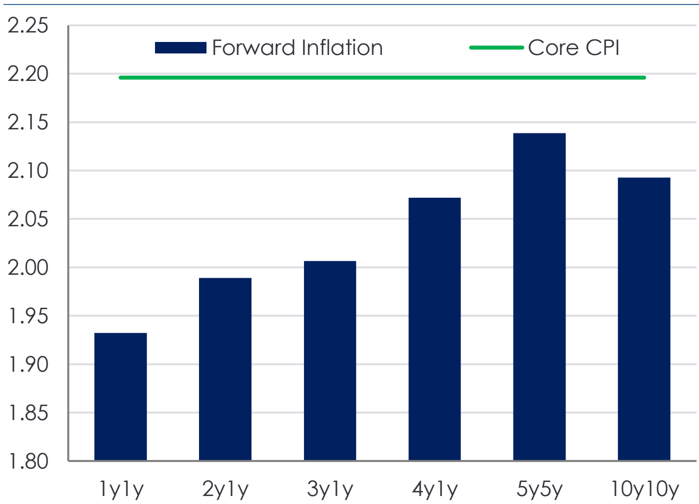
[1] Has Inflation Sustainably Reached Target?; Adam Shapiro, Fed Reserve Bank of San Francisco Economic Letter, Nov 26, 2018

INFLATION

The recent dovish shift by the Fed -- both in terms of policy rate and balance sheet size -- are likely to be accretive to inflation expectations. However, the market has been jaded by experience over the last decade wherein inflation has not firmed around the 2% target level despite the extraordinary measures taken by the Fed. There are signs that the Fed may be considering other approaches, with NY Fed President Williams recently proposing inflation averaging or price level targeting to achieve the inflation goal. While such an approach could be expected to provide a stronger anchor for longer-term inflation expectations and reduce volatility, it could also spur an inflation overshoot in the short-run, offsetting the recent realized weakness.

The sharp drop in inflation expectations in Q4 has left most forward-looking measures of inflation trading below the current core CPI level of 2.2% (Chart 5). While inflation can certainly drop from the current levels, it is likely to be biased to the upside under the Fed's more accommodative tone. The historically low unemployment rate is also supportive of higher inflation. Other factors that could nudge the market towards higher breakevens include tariffs, projected weakness in the US Dollar, increased deficits, and the potential for Congress to move forward a large-scale infrastructure initiative.

Chart 5: Forward Inflation



Source: Bloomberg, FPCM

MORTGAGE-BACKED SECURITIES

Mattan Horowitz

VP, Asset Management

mhorowitz@fpcmllc.com

212.324.6018

QUICK READ

- With a new incoming appointee to head the FHFA, the Trump Administration could now begin to affect GSEs
- Despite Calabria's history of supporting less government involvement in the mortgage market, GSE reform is still unlikely
- Calabria likely takes small steps to shrink GSEs
- Changes from Calabria's regime should generally be beneficial for agency MBS

Director of the FHFA, Direction of the GSEs

The government-sponsored enterprises (GSEs)[1] have by and large been unaffected by the Trump Administration, but that might be changing as Mel Watt's -- Obama's appointment as the Director of the Federal Housing Finance Agency (FHFA)[2] -- term ended January 6th, 2019. President Trump nominated Dr. Mark Calabria to replace Mel Watt and, in the interim, appointed Joseph Otting, Comptroller of the Currency, as the acting Director until Calabria can be confirmed as the permanent Director of the FHFA -- expected in 2019.

Dr. Calabria has extensive experience in housing policy[3], and he has made it clear over the years that he believes the government should have a smaller footprint in the mortgage market. The obvious way to achieve this is by moving the GSEs out of conservatorship, but this would be a massive undertaking, requiring cooperation with the White House and a divided Congress. Instead of moving the GSEs out of conservatorship, it is more likely that Calabria will take the smaller step of letting the GSEs naturally build capital through earnings. Currently, Fannie Mae and Freddie Mac are each allowed to retain $3bn in earnings as a capital buffer with the excess being paid to the US Treasury. If the GSEs were to be privatized, Otting estimates the GSEs would require $150-200bn in capital. So, if we assume the GSEs will continue to earn between $15-20bn a year as they have recently, then it will take roughly 10 years for the GSEs to be fully recapitalized – not bad when you consider the GSEs have already been in conservatorship for 10 years!

Besides allowing the GSEs to organically recapitalize, there are number of other steps the FHFA could take to shrink the GSEs footprint in the housing finance market. Calabria mentioned two of these in a 2011 testimony to Congress[4]:

[1] Fannie Mae and Freddie Mac

[2] Fannie Mae, Freddie Mac and the Federal Home Loan Bank regulator

[3] Senior staff on U.S. Senate Committee on Banking, Housing and Urban Affairs; Deputy Assistant Secretary for Regulatory Affairs at the Department of Housing and Urban Development. He held positions at Harvard's Joint Center for Housing Studies, the National Association of Home Builders and the National Association of Realtors.

[4] https://www.cato.org/publications/congressional-testimony/gse-reform-immediate-steps-protect-taxpayers-end-bailout

MORTGAGE-BACKED SECURITIES

- **Reduce loan limits.** The private market is already involved in the jumbo conforming space, which makes loan limits an obvious target for reform. Conforming jumbo loans have been held as whole loans by banks, and they have even found their way into Jumbo 2.0 non-agency deals. In Calabria's words:

  > The bottom line is that reducing the conforming loan limit to no more than $500,000, if not going immediately back to $417,000, would represent a fair, equitable, and feasible method for transitioning to a more private-sector driven mortgage system.

  At the time Calabria wrote this, the single-family loan limit was $417,000 and has since been increased to $453,100, while the high cost area loan limit was $625,500 – therefore Calabria essentially recommended removing the high cost area limit.

- **Lower maximum debt-to-income (DTI) ratio.** Currently the GSEs will guarantee loans up to 50 DTI, meanwhile the Consumer Finance Protection Bureau (CFPB) requires a Qualified Mortgage[5] (QM) to have a DTI less than or equal to 43. As a patch, the CFPB exempted the GSEs from the QM rule, but this patch expires in January 2021. In Calabria's words:

  > The GSEs should be limited to purchasing only those mortgages that meet the definition of a "qualified residential mortgage" as will be determined by regulations promulgated under the authority of the Dodd-Frank Act.

In 2018, 31% of loans originated by the GSEs had a DTI over 43, and 9% were high cost area jumbo loans -- as Director of the FHFA, Calabria would have the tools to significantly shrink the size of the GSEs. These changes would be a boon for the agency MBS market, and not just because there will be lower supply of agency MBS. First, jumbo loans are some of the most negatively convex[6] loans in the Agency MBS market, as it is much easier for them to recoup the fixed costs of refinancing given the larger dollar savings from refinancing, so fewer jumbo loans is good for the market. Second, existing loans, either jumbo or high DTI, will have a harder time refinancing because they will no longer qualify for a conforming loan, so this will further improve the negative convexity of the agency MBS market.

Changing conforming limits and DTI caps will not come without fierce opposition. The National Association of Realtors (NAR) and National Association of Home Builders (NASB) have been strong advocates of higher conforming loan limits -- both of whom Calabria has worked for in the past. While it is unclear what Calabria will ultimately do when he takes over as the Director of the FHFA, the stakes are high, and we recommend investors take heed of Calabria.

[5] Lenders get legal protections on loans that meet the Qualified Mortgage criteria.

[6] Mortgages are typically negative convex due to the option borrowers have of prepaying their mortgage. If an investor buys a mortgage, and subsequently interest rates fall causing the borrower to refinances their mortgage, then the mortgage the investor owns will be prepaid, but now the investor must reinvest those proceeds at lower, less desirable, interest rates. Therefore, the more likely a borrower is to refinance, the worse the negative convexity, the worse it is for investors.

CORPORATE CREDIT

Sandy Jephson
Vice President, Senior Credit Analyst

sjephson@fpcmllc.com
212.324.6014

QUICK READ

- Investor concerns regarding credit risk of the BBB corporate credit universe have surged
- The narrative is a nuanced one, and thusly should be approached with further consideration
- There are many names that comprise the BBB universe, and therefore many disparate "stories"
- Ratings agencies have been lenient, but re-evaluation of highly levered credits represents a risk
- The anticipated magnitude of credit deterioration is not commensurate with impending fallen angels scenario

Apocalypse soon? Impending fallen angels wave is too broad a brush

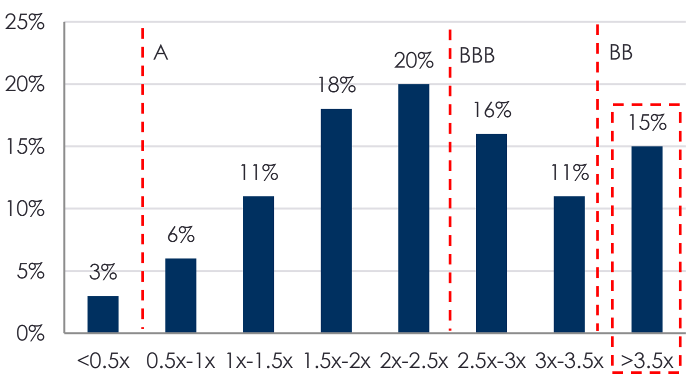
Heightened market volatility and a string of credit-specific events (e.g., GE, PCG) have rendered investors increasingly concerned about surging credit risk in the BBB rated category of the investment grade corporate market. These fears have crystallized, almost counterintuitively, in an environment of recently accelerating EBITDA growth. Yet, the BBB rated segment experienced a 3% loss in 2018 – its worst performance since the last crisis. The concern around the vulnerability of the approximately $2.5 trillion BBB rated corporate market to rating downgrades originates primarily from the brisk growth of this segment (in both absolute and relative terms). Rising leverage is also a source of investor anxiety, as record debt-funded M&A activity has resulted in a higher proportion of BBB credits' leverage metrics mirroring BBs'. While much of the concern surrounding market size and leverage is understandable, a granular look at the data paints a more nuanced picture.

BBB credits are disparate

The amount of outstanding BBB debt has grown significantly, comprising half of the investment grade market from one-third a decade ago, and is almost twice the size of the high yield market. On the surface, the eruption of BBB rated debt seems concerning, particularly against a backdrop of higher leverage. Credit Suisse estimates that 15% of the BBB corporate market or approximately $400 billion carries a leverage above 3.5x – a level typically commensurate with a high yield rating.

CORPORATE CREDIT

Chart 1: BBB rated corporates' leverage and implied rating

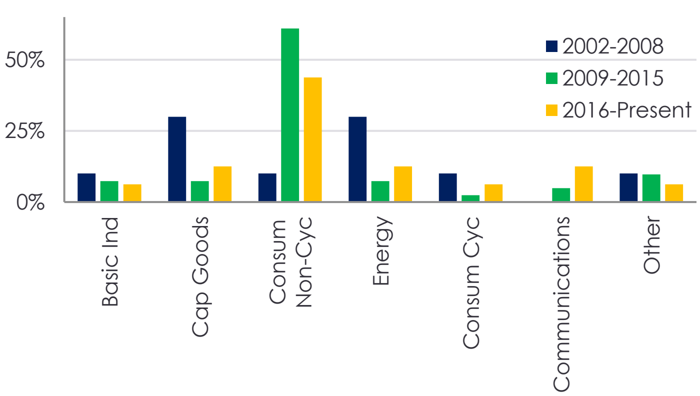


Source: Credit Suisse

Note: Rating denotes implied rating from leverage ratio levels (e.g., 15% of BBBs carry leverage > 3.5x, which maps to a BB rating)

Nonetheless, leverage risk is not distributed evenly across all industries. The increase in leverage over the last several years has been driven primarily by a spate of M&A-related activity, mostly within low-beta, non-cyclical industries such as healthcare and food and beverage.

Chart 2: Historical large IG M&A transactions by sector [% of deals]

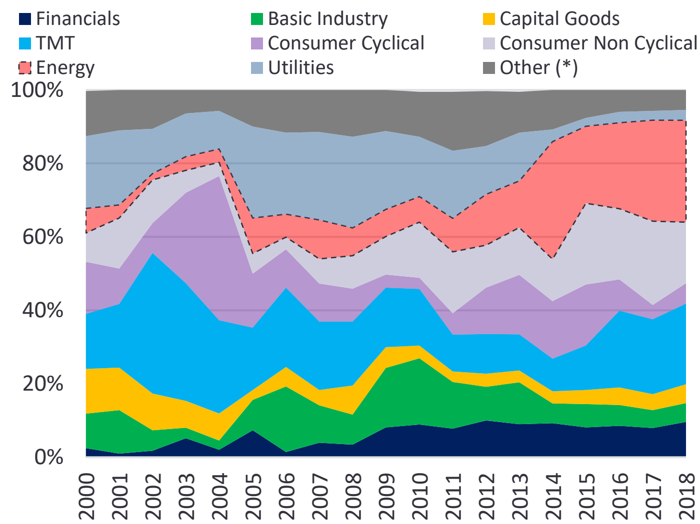


Source: Barclays

Although more defensive sectors are not immune to downgrade risk in a downturn, they have displayed a smaller propensity to be downgraded historically.

Moreover, a significant portion of BBB rated debt from enterprises levered above 3.5x emanates from the Technology, Media, and Telecom (TMT) and Energy sectors. These two sectors represent half of low BBB rated debt – the segment most exposed to downgrade risk to high yield.

Chart 3: BBB-rated corporates' composition by sector

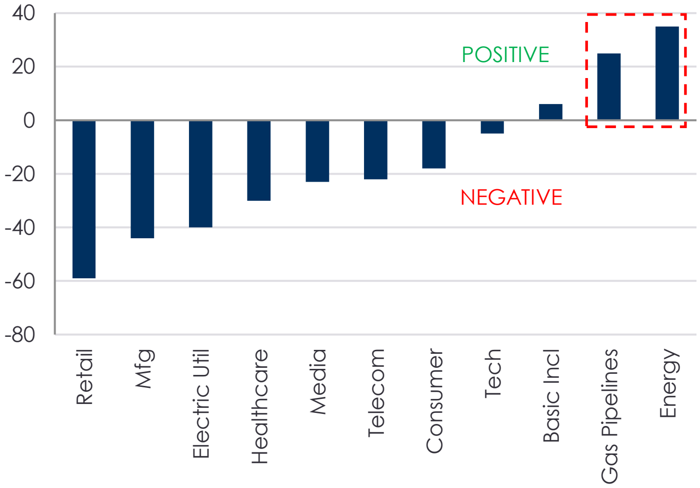


Source: Barclays Live, Bloomberg

(*) Other includes REITS, Transportation, Insurance, and Other Industrial

This concentration risk could be somewhat concerning given that historical peaks in downgrades have occurred during times when the sectors facing the most stress had a relatively large representation within the BBB index. TMT and Energy represented 38% and 32% of the low BBB market in 2002 and 2014, respectively, before experiencing heavy volumes of downgrades. However, the risk within the TMT and Energy sectors is less worrisome, as net leverage remains extremely low within the cash rich technology industry, and it was added from a relatively low base. And the Energy sector has been cleansed of the weakest companies, as downgrades in the commodity complex produced 71% and 80% of fallen angels in 2015 and 2016, respectively, and 25% in 2017. Prospectively, we would not expect downgrades to be pronounced in this sector as the sector's debt cumulates the greatest concentration of positive rating outlooks, as displayed in Chart 4.

Chart 4: BBB net ratings outlook [$bn]

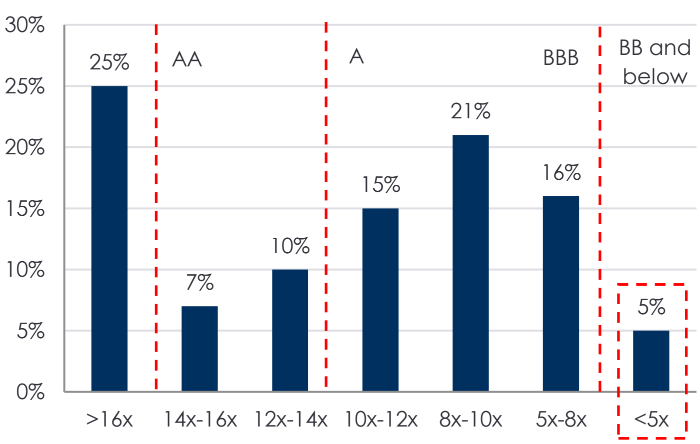


Source: Credit Suisse

Similarly, the TMT sector has already produced 37.5% of 2017's fallen angels.

We should also note that leverage should not be construed as the single determinant of downgrade risk. In fact, focus on rising leverage is likely to be obscuring other relevant considerations such as cash flow generation, liquidity, industry dynamics, and flexibility in dealing with economic adversity. Many BBB rated names exhibit high post-M&A leverage rather than severe operating challenges.

Chart 5: % BBB rated corporates' interest coverage ratio and implied rating



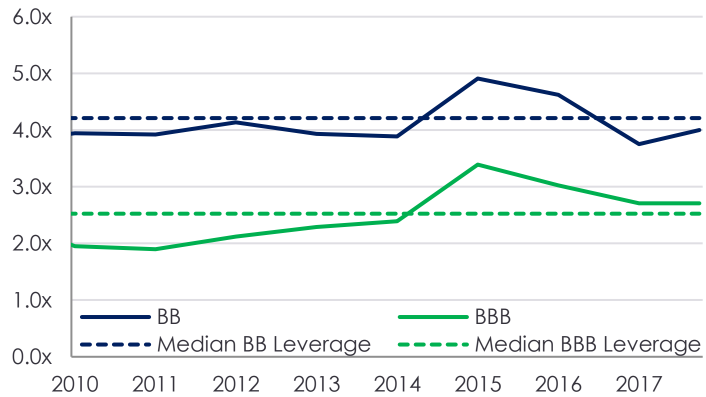
Source: Credit Suisse

Note: Rating denotes implied rating from interest coverage ratio levels

Rating agencies have been permissive

A more prominent risk posed by the deterioration in leverage stems from negative rating agency actions, which appear to have relaxed standards within some industries, allowing certain companies to attain a higher credit rating than one would otherwise assume based solely on the issuer's leverage metrics.

Chart 6: BBB net leverage vs BB net leverage

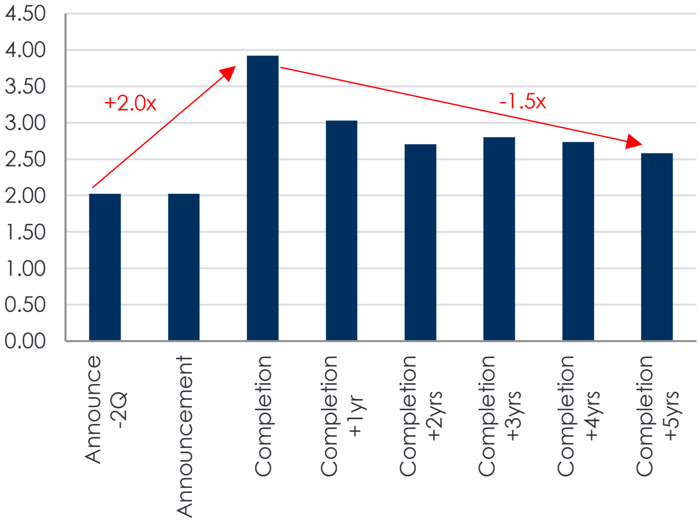


Source: Barclays

Chart 6 exhibits the noticeable convergence in leverage between the BBB rated portion of the investment grade market and the BB rated sector in the post crisis era. In 2018, many companies were given at least two years post-M&A deal closing to reduce leverage to rating targets while retaining an investment grade rating. It is hard to conceive that rating agencies would take such a benign stance if these leverage levels had been achieved in the normal course of business and not as part of an M&A transaction. Nonetheless, this flexible timeline suggests that the likelihood of wide-scale BBB downgrades in 2019 is low. Factors such as scale of business, reliance on M&A synergies, and a pledge to delever quickly have justified this leniency. However, companies that have increased leverage to fund large debt-funded acquisitions have demonstrated in the past a proclivity for slow deleveraging even in a healthy economy. An analysis by Morgan Stanley of a hundred M&A transactions of over $5 billion wherein the acquirer was initially rated investment grade reveals that even after five years, these companies generally had not returned to pre-acquisition leverage levels.

CORPORATE CREDIT

Chart 7: Gross leverage for IG acquirers following an acquisition



Source: Morgan Stanley Research, Bloomberg
Note: Shows completed deals >=$5bn with IG rating at acquirer pre-acquisition

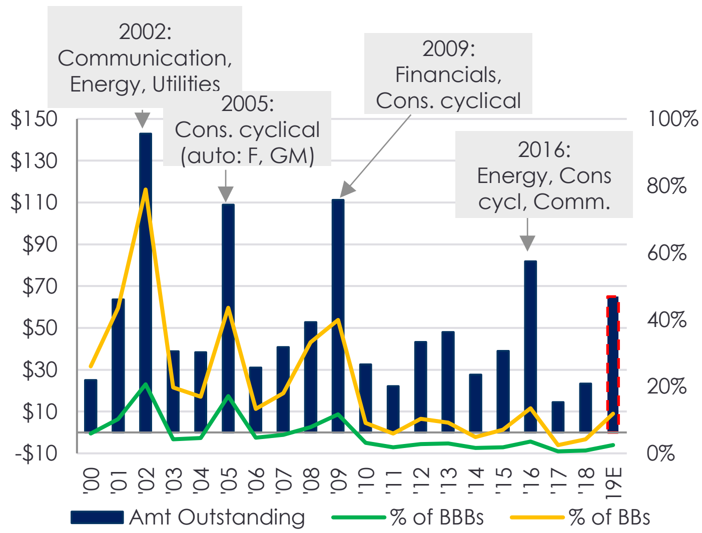
Predictably, as the macroeconomic backdrop has softened, rating agencies have become more stringent with companies that have lagged their deleveraging targets.

What are the implications for the market?

Many investors ponder whether the US high yield market can cope with the negative technical created by the scale of downgrades that might result from the changed structure of the investment grade market. As outstanding BBB debt has grown, it is reasonable to expect that downgrades will surpass historical averages.

The downgrade rate of BBB rated debt to high yield has been below the long-term average of 4.5% in eight of the past nine years, reflecting a supportive macroeconomic backdrop, with stress in the Energy sector causing 2016 the outlier. During prior recessions, the downgrade rate rose to 10-15% of BBBs as depicted in Chart 8.

Chart 8: Fallen Angels [$bn, and as a % of the BBB and BB Bloomberg Barclays US corporate indices]



Source: Barclays

Note: 2019E fallen angels represents BBB rated corporates whose outlook is currently negative by at least one credit rating agency

If we assume the same percentages are applied to a theoretical down-cycle today, approximately $260-$400 billion of debt could be at risk. The low BBB segment, which represents a quarter of the BBB index, naturally exhibits greater downward rating migration risk, but only 10% of this segment carries a negative outlook by at least one rating agency. This suggests approximately $65 billion of potential downgrades in 2019 – by no means staggering in the context of a $1.2 trillion high yield market. Many of these issues may not translate into downgrades – any outsized fallen angel activity generally requires a meaningful deterioration in credit fundamentals. Most have remained generally stable for the broader BBB category, with the exception of leverage ratios.

Conclusion

The quantum of BBB debt is unprecedented, hence gauging the magnitude of the potential impact of broad downgrades is indubitably more art than science. The orthodoxy that the BBB rated segment has become uniformly riskier due to stretched leverage metrics belies the complexity of the issues at play. While it is difficult to predict a sector-driven rise in fallen angels, pockets of risk undeniably exist. The data are hardly persuasive that the BBB corporate bond category indiscriminately poses an imminent threat to credit markets, especially as large amounts of fallen angels have been absorbed by high yield in the past. While even the most "defensive" credits are not immune to downgrade risk late in the cycle, negative credit events have yet to become systemic. Such a scenario would require either an exogenous economic event, such as a recession, or a rapid fundamental deterioration of a significant amount of BBB issuers (or the confluence of both), which we do not envisage in the short term.

ASSET-BACKED SECURITIES

Rongfeng "Becky" Li, CFA

SVP, Asset Management

bli@fpcmllc.com

212.380.2296

QUICK READ

- Who can live without a mobile phone today? Hardly anyone. The great majority of American mobile consumers (over 80%) are addicted to their smartphones from the moment they wake up till they go to sleep.
- These essential smartphones have been getting more expensive in recent years with newer features. The leading U.S. wireless companies have increasingly turned to the Asset Backed Securities (ABS) market for installment financing, which has allowed tens of millions of consumers to pay for their mobile phones through low monthly payments.
- Performance for this new ABS asset class has been strong, supported by the mobile phones' critical-use utility nature, small monthly payment amount, low unemployment rates, and strong default loss mitigating measures.
- We are optimistic on the wireless handset ABS due to robust structural protection and short risk horizon, and we think this emerging asset class will continue to grow and evolve.

Smartphone addiction and ABS financing

Who can live without a mobile phone today?

Hardly anyone. The ubiquitous mobile phones have become an indispensable part of our daily lives. However, these essential smartphones have been getting more expensive in recent years with newer and upgraded features. The leading U.S. wireless companies (Verizon, AT&T, T-Mobile, etc.) have increasingly turned to the asset-backed securities (ABS) market to provide installment financing which has allowed tens of millions of consumers to pay for their unsubsidized mobile phones through low monthly payments over a two-year term. Performance for this new ABS asset class has been strong, supported by the mobile phones' critical-use utility nature, small monthly payment amount, low unemployment rates, and strong default loss mitigating measures. We are optimistic on wireless handset ABS due to the robust structural protection and short risk horizon, and we think this emerging asset class will continue to grow and evolve.

Affordable essential products with low monthly payment

The great majority of wireless devices financed through various installment plans are smartphones which account for well over 90% of pools. Additional eligible collateral include tablets, smart watches, and other wireless accessories, but these represent a very small percentage of the pools. A device installment plan is a fully amortizing, 0% interest rate loan on the total retail price of a smartphone less any down payment (if any), on a predominantly 24-month term. The average monthly payment amount under a Verizon Wireless's Device Payment Plan (DPP) was $31.54 in 2018. A new Samsung Galaxy S9 phone costs $800 today but monthly payment is only $33 on a two-year payment plan. Consumers can upgrade to newer devices if they meet certain eligibility criteria such as having made a minimum 50% of device payments. Then the wireless carrier will acquire the trade-in devices and pay off the ABS trust for the remaining balance.

Table 1: Verizon Wireless Device Payment Plan (DPP) vintage pool characteristics

	2013	2014	2015	2016	2017	2018
Average monthly payment amount	$23.22	$26.70	$25.32	$26.18	$27.93	$31.54
Average original device balance	$557.44	$608.09	$607.86	$628.41	$657.38	$724.17
Average remaining installment months	24	23	24	24	24	24
Average FICO score				710	703	702
Percentage of DPP with smartphones	95.16%	96.32%	97.24%	97.44%	97.02%	96.24%
Average customer tenure in months	73	74	83	87	92	92
Geographic concentrations (top 3 states)						
Highest concentration – California	11.69%	12.26%	11.29%	10.76%	10.75%	10.78%
2nd highest – New York	5.40%	5.57%	6.18%	6.21%	6.30%	6.15%
3rd highest – Texas	6.13%	5.51%	5.09%	5.14%	5.51%	5.72%

Source: VZOT 2018/A prospectus dated 10/2/2018

A high priority to pay for the device addiction

The great majority of American mobile consumers (over 80%) are addicted to their smartphones from the first hour they wake up in the morning till the last hour just before they go to sleep, according to the Deloitte Mobile Consumer Survey for 2017. To maintain access to this critical-use device, we can expect consumers to prioritize payment to their wireless phone payment ahead of other monthly bills. The device payment plan and a customer's wireless phone service are combined and included in the same monthly bill. If a customer is delinquent in making the device payment on his mobile phone, he would quickly get a notice of suspension or termination from his wireless carrier. At VZW, wireless service is generally disconnected within 43 days after an account is suspended.

Structural protection

Initial and subsequent credit enhancement is typically over 10% for revolving deals and amortizing transactions. In conduit deals, advance rates are dynamically calculated according to various cohorts based on duration of a customer's tenure with the wireless company, the customer's credit profile, and the contract's remaining term. There are also various performance related triggers and amortization events to help offset worsening pool composition and performance. Once they enter into amortization phase, transactions amortize rather quickly, with an average remaining term of 20 months in VZOT deals.

Strong performance since inception

As the industry leader, Verizon Wireless first offered DPPs to its customers in 2013. Cumulative loss performance across various DPP vintages has remained largely stable since 2013, at under 4% so far. The 60+ day delinquency ratio has remained under 1%. Each ABS pool is diversified with millions of wireless customers from across the U.S. Customers need to meet certain credit requirements to participate in DPP, such as through FICO score or internal history screening with the wireless carrier. At VZW, most of the obligors are prime customers, with average FICO of 702.

ASSET-BACKED SECURITIES

Table 2: Verizon Wireless Device Payment Plan (DPP) managed portfolios outstanding and performance

	As of June 30		As of December 31				
	2018	2017	2017	2016	2015	2014	2013
Number of DPP contracts outstanding	45,695,000	44,115,000	45,628,000	41,839,000	26,316,000	7,509,000	593,000
Aggregate principal balance of DPP	$16,511,400,000	$15,360,820,000	$16,707,600,000	$15,642,620,000	$11,685,310,000	$3,740,920,000	$304,220,000
60+ days delinquency ratio	0.54%	0.49%	0.55%	0.74%	0.63%	0.71%	0.09%
Gross write-off ratio*	1.03%	0.87%	3.50%	3.67%	2.67%	2.34%	0.10%

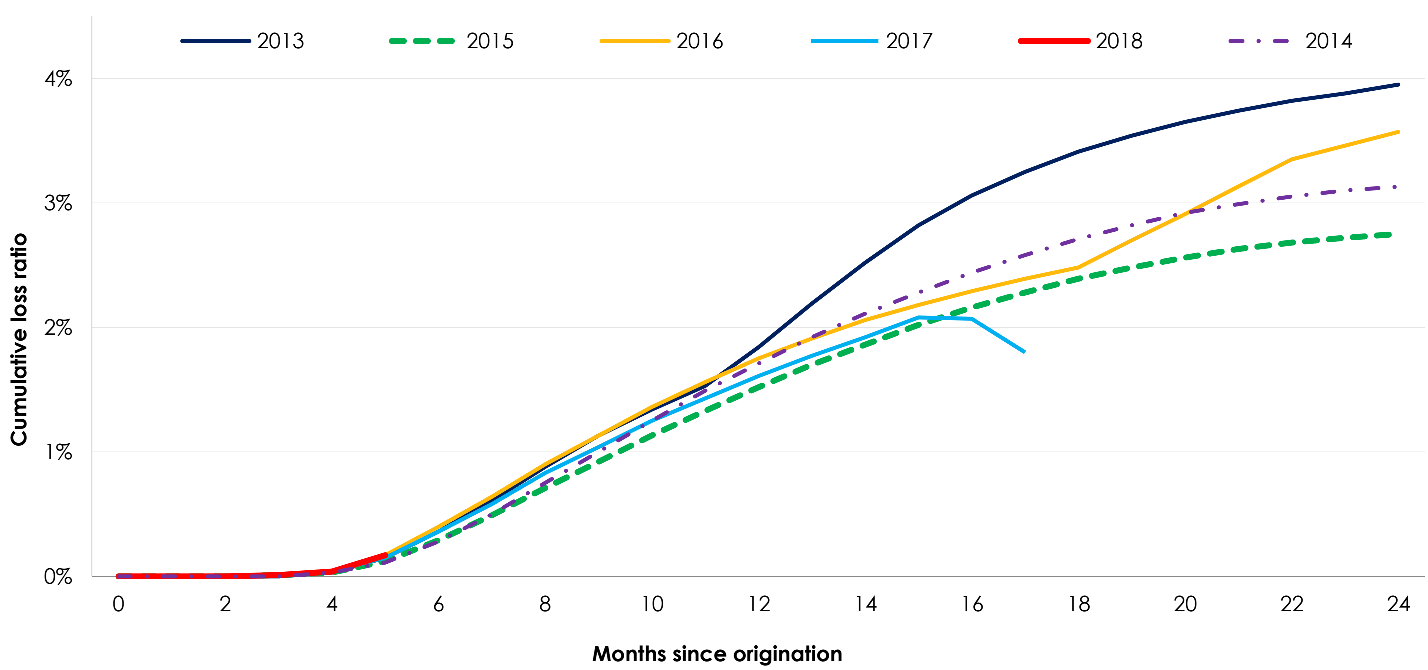
*Recoveries on written-off devices are unavailable to make payments on the ABS notes.

Source: VZOT 2018/A prospectus dated 10/2/2018

Continue to grow and evolve

The emerging wireless device payment plan ABS is likely to grow in the years ahead, given the strong performance and structural protection. This asset class will also evolve, with longer tenor as a natural response to more expensive handset devices and extended upgrade cycles. Credit underwriting could loosen somewhat as wireless carriers look to gain more customers. However, the ABS structure is expected to dynamically adjust to the changing natures of the underlying collateral and risk profiles of obligors, offering investors adequate protection.

Chart 1: VZW DPP cumulative losses (after 1st payment) by annual origination vintage



Source: Verizon Owner Trust 2018-A Prospectus