2019 U.S. Credit Market Outlook

Repricing Risk At the End of the Credit Cycle

February 2019

Executive Summary: Pretium 2019 U.S. Economic and Credit Market Outlook

Pretium is constructive on the near-term outlook for the U.S. economy, but risks to forward growth are mounting from late-cycle headwinds and potential downside risks from domestic and global policy.

- The U.S. economy continues to grow at a healthy pace with real GDP growth of 3.0% Y/Y, a strong labor market boosting consumer spending and confidence, and robust, if moderating, businesses activity, confidence, and capex.
- Economic growth is likely to decelerate in 2019 due to meaningfully tighter financial conditions, negative trade policy impacts, a fading growth impulse from earlier fiscal stimulus, and the lagged effect of tighter monetary policy.
- In our view, the greatest risk to U.S. growth is spillover from slowing global growth, most notably China and the European Union. These economies (and others) have been negatively impacted by tariffs / trade policy, which continues to impact supply chains, input costs, and business confidence.
- Key factors shaping the outlook for U.S. growth include the outcome of U.S.-China trade talks, the potential of Federal Reserve rate increases and balance sheet normalization, and the resolution of the U.S. government shutdown.

We believe a multi-year repricing of corporate credit risk is underway.

- 2018 was among the worst years of performance for the investment grade, high yield, and loan markets.
- We expect the increase in credit risk premia will continue. Global economies are slowing, central banks are withdrawing liquidity from markets, and credit market fundamentals have weakened this cycle with considerable growth in debt outstanding coupled with deteriorating credit quality.
- The tailwind from above-average corporate earnings growth faces headwinds including profit margin pressures from wages, input and supply chain costs, and interest expense which could impact hiring and capex plans.

Near-term defaults and downgrades are likely to remain low, but spreads will move wider in anticipation.

- Pretium's 2019 credit outlook expects a modest widening of spreads as earnings growth slows, volatility increases, and late cycle pressures increase on overleveraged and revenue-challenged firms emerge.
- Pretium's credit outlook anticipates a relatively benign credit environment through 2019. Over the next 12 months, default rates and downgrades will remain low supported by moderate if slowing economic / corporate earnings growth and healthy interest coverage ratios.
- Further, we believe there is a not inconsequential risk of the risk-free curve shifting higher on the short and long-ends. We expect the Fed may raise overnight rates in 2H 2019 given positive labor market fundamentals, and we remain concerned about the pressure of quantitative tightening and U.S. Treasury borrowing on long rates.

Longer-term we expect an extended credit default cycle marked by rolling disruption and lower recoveries.

- We expect the next credit cycle will be a multi-year event marked by disruptions to business fundamentals resembling the early 1990s and early 2000s cycles. Unlike the 2008-2009 default cycle, which was driven by illiquidity and stress in the financial sector, we believe the next downturn will last longer, impact multiple industries, have lower peak defaults, but also lower recoveries leading to higher cumulative losses.
- Across credit, there has been a significant increase in debt outstanding with generally declining credit quality. Average ratings are declining, leverage is rising, and covenants are less restrictive.
- We expect credit issues to arise where debt burdens are misaligned with revenue growth and pricing power, impacting idiosyncratic credits and entire industries. Unique to this cycle, however, is the pace and magnitude of technological disruption and consumer preference change altering the business models of previously 'defensive' industries.
- We believe that several large industries face significant threats to their business from changing consumer habits and the impact of e-commerce. Highly leveraged industries with growth headwinds include cable companies, tobacco companies, brewers, bricks and mortar retailers, consumer staples companies, and freight transportation, among others.

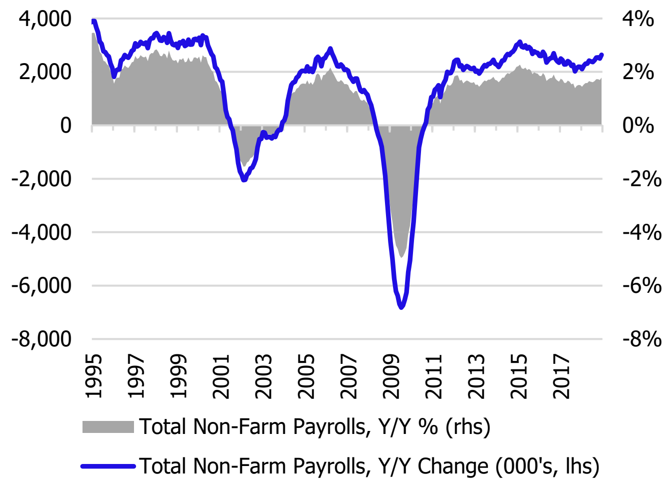
Section I: 2019 Economic + Rate Outlook

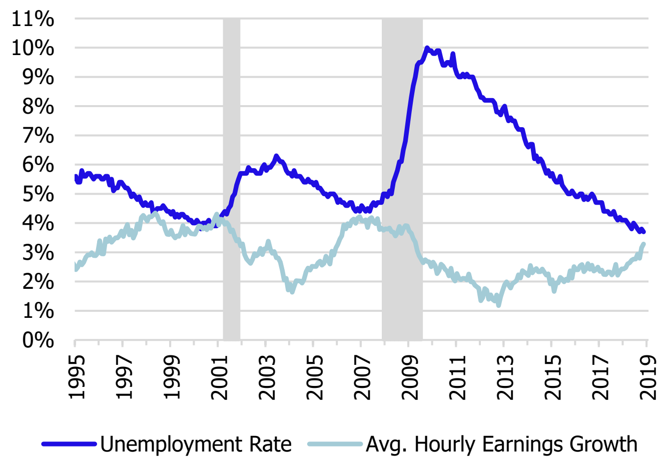
Healthy Economic Growth in 2018 Expected to Continue Through 2019

The U.S. economy is performing well, supported by healthy job growth, corporate tax reform, and elevated consumer and business confidence. **We continue to see the U.S. economy as mid- to late-cycle, but not late-cycle given the healthy and, in many cases, accelerating growth in key metrics:**

- Real GDP grew 3.0% in the third quarter of 2018 on a year-over-year basis (and 4.1% Q/Q annualized), an acceleration from 2.4% Y/Y growth in 2017 and 1.9% in 2016.[1] Consensus estimates from Wall Street economists forecast real GDP growth of 2.5% for 2019, and 1.8% for 2020.[2]
- Non-farm employment grew 1.8% Y/Y in December 2018, with the U.S. creating an average of 220k jobs per month during 2018, an acceleration from the 180k pace in 2017.[3]
- Unemployment fell from 4.1% at the end of 2017 to 3.9% in December 2018. Wall Street economists forecast unemployment to compress further to 3.6% by year-end 2019.[4]
- Tightening labor markets led to improving wage growth and increasing labor participation. Average hourly earnings increased 3.3% Y/Y in December 2018,[5] while the Employment Cost Index rose 2.8% Y/Y in 3Q'18, the fastest pace since 2008.[6]
- Consumer confidence reached its highest levels this cycle, with the University of Michigan Consumer Sentiment Index reaching its highest levels since 2001 earlier this year.[7]
- Business activity was positive, service and manufacturing PMIs averaging 55 for full year 2018 and confidence measures such as the NFIB small business optimism index at above-average levels. Capex spending in 2018 grew 8% Y/Y.[8]

Exhibit 1: Healthy Labor Markets Supporting Cycle High Wage Growth





Source: U.S. Bureau of Labor Statistics, All Employees: Total Nonfarm Payrolls, Civilian Unemployment Rate, Average Hourly Earnings of Production and Nonsupervisory Employees: Total Private, through December 2018.

[1] Bureau of Economic Analysis, Gross Domestic Product, 3Q'18.
[2] Bloomberg Weighted Average Consensus Forecast, January Survey, 2019 and 2020 Real GDP Growth forecast, retrieved January 11, 2019.
[3] U.S. Bureau of Labor Statistics, All Employees: Total Nonfarm Payrolls, through December 2018.
[4] U.S. Bureau of Labor Statistics, Civilian Unemployment Rate, through November 2018. Wall Street forecasts are Bloomberg consensus, retrieved January 10, 2019.
[5] U.S. Bureau of Labor Statistics, Average Hourly Earnings of Production and Nonsupervisory Employees: Total Private, through December 2018.
[6] U.S. Bureau of Labor Statistics, Employment Cost Index: Total compensation: All Civilian, through 3Q'18.
[7] University of Michigan, University of Michigan: Consumer Sentiment, data through November 2018.
[8] Markit Service PMI and Manufacturing PMI, data through December 2018, retrieved from Bloomberg on January 4, 2019. NFIB Research Foundation, Small Business Optimism Index, through December 2018. Bureau of Economic Analysis, 3Q'18 data on gross private domestic investment.

Treasuries Rallied in 4Q on Flight to Quality. We See Risk to Higher Rates Across Curve.

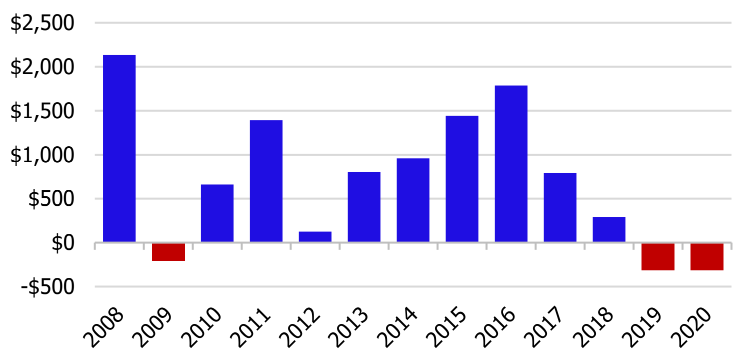
The risk-free rate curve increased and flattened in 2018, as the market responded to tighter monetary policy, but also priced in more concern about sharply lower growth in the medium-term.

- On the short end, the Federal Reserve raised overnight rates four times in 2018 to 2.25%-2.50%, with their latest forecast expecting two additional rate increases in 2019. The FOMC has clearly communicated they are likely to pause with further rate increases until they see more evidence of inflation, and less downside risk from a global economic slowdown and tight financial conditions.
- On the longer-end, 10-Year Treasuries increased by 30bp to 2.7% at year-end 2018, but were as high as 3.3% in October 2018 before retreating on global growth concerns. The yield curve, therefore, flattened significantly with the spread between the 2Yr Treasury and 10Yr Treasury just 21bp at the end of 2018 (from 51bp at YE 2017).[9]

Our outlook for rates in 2019 is for higher rates across the curve.

- On the short end, while the Federal Reserve has made it clear it intends to be patient with the pace of further rate hikes, we believe they will raise rates one or two times in 2H 2019 due to the strength of the labor market and inflationary pressures from tariff policy.
- On the long-end, we believe the combination of the Fed balance sheet runoff (i.e. quantitative tightening or "QT"), additional Treasury supply to satisfy the increasing funding needs of the U.S. government, and net issuance from U.S. corporates will pressure yields and spreads for long-dated fixed income.

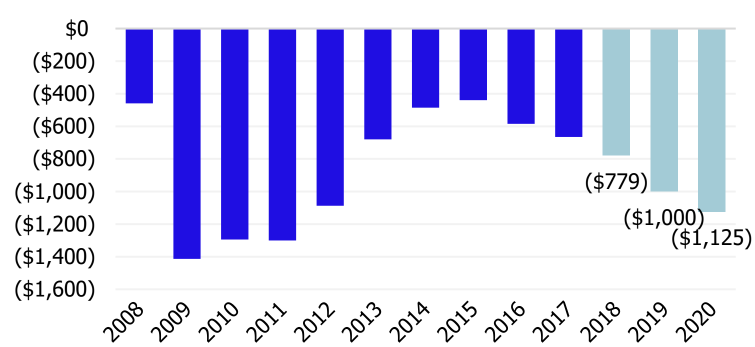
Exhibit 2: Net Annual Change in Combined Federal Reserve, European Central Bank, and Bank of Japan Balance Sheets



Global central banks are expected to withdraw liquidity from the financial system on a year-over-year basis for the first time since 2009

Source: Bloomberg, priced on January 10, 2019.

Exhibit 3: U.S. Treasury Expected to Issue More Than $1tn of Debt in 2019-2022 to Fund Growing Deficit



The U.S. Treasury is expected to issue $1.00tn of debt to fund its 2019 budget deficit, up from $665bn in 2017

Source: Goldman Sachs estimates, from the ERWIN forecast database, accessed on January 10, 2019.

[9] U.S. Department of the Treasury, Daily Treasury Yield Curve Rates, accessed on January 31, 2019.

Risks to the Outlook

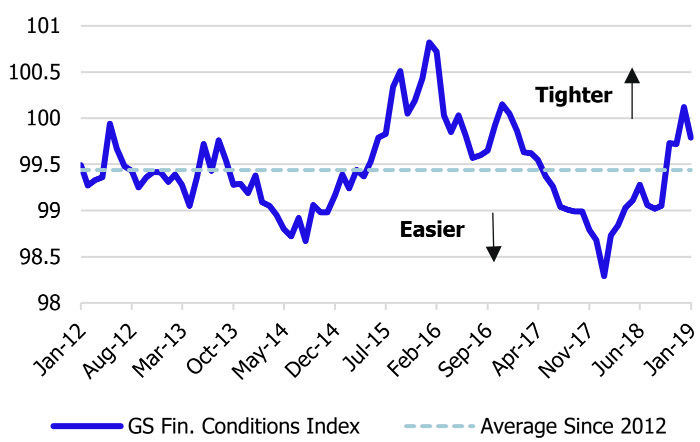
We maintain a positive outlook for the U.S. economy, with a base case in-line with consensus for slowing, but still healthy GDP and employment growth. However, we expect credit spreads to widen as earnings growth slows, volatility increases, and late cycle pressures increase on overleveraged and revenue-challenged firms emerge. Nevertheless, we do not expect a dramatic widening in the near-term.

There are multiple factors which could alter that outlook over the next 3-6 months. More so than in prior periods, more of the risks appear skewed to the downside, led by potential policy mistakes.

U.S. Economic Growth

- The U.S. is not immune to the global growth slowdown occurring in China, the EU, and elsewhere. Capex plans are decelerating, oil prices are sharply lower, and S&P 500 companies derive nearly 45% of sales outside the U.S. Therefore, any continued slowdown will impact revenues and profits.[10] We will discuss earnings below, but **we expect consensus EPS will continue to decline reflecting the slower global economic outlook.**
- Financial conditions have tightened significantly in the past several months, which may reduce 2019 GDP by more than 1.0%.[11]

Exhibit 4: Goldman Sachs Financial Conditions Index (higher numbers = more restrictive conditions)



Financial conditions tightened through 2018, creating a headwind to 2019 growth

Source: Goldman Sachs, Bloomberg. Data accessed on January 30, 2019.

Trade

- The Trump administration's decision to increase tariffs on multiple countries and across goods was a defining turning point in the global economy.
- U.S. trade policy and its impact across the global economy carries the potential to significantly slow economic growth (and boost inflation) with unknown second and third derivative effects through supply chain disruptions, a stronger dollar, and a break in confidence.
- While the U.S. and China agreed to further talks following the G-20 meeting in November, there exists a real possibility that the trade conflict escalates further with additional downside risk to the global economy. **We do not expect a resolution of long-seated, structural trade issues in the near-term and expect continued volatility as discussions continue through 2019.**

[10] S&P Dow Jones, https://us.spindices.com/indexology/djia-and-sp-500/sp-500-global-sales.
[11] Analysis of financial conditions on GDP from Goldman Sachs, "10 questions for 2019", published December 29, 2018.

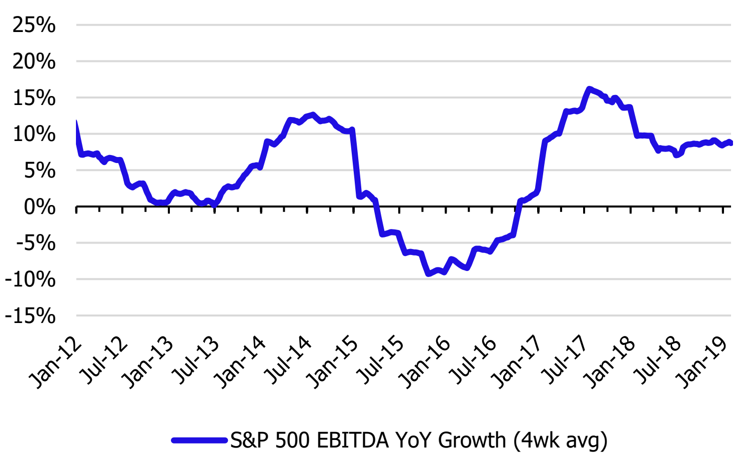
Federal Reserve Policy

- The Federal Reserve increased rates four times in 2018 and expects to raise rates two more times in 2019.
- That said, the FOMC December 2018 minutes and January 2019 press release make clear that the committee will be "patient" in further rate increases, given global economic slowdown, tight financial conditions, and a pullback in inflation pressures.[12]
- Further, in January 2019 the FOMC discussed potential changes to the pace of balance sheet runoff (currently $50bn/month) to accomplish their monetary policy goals.[13]
- In total, the change in tone from the Federal Reserve since 4Q'18 and likely slower pace of monetary tightening are positives for risk, and for the duration of this cycle as a Federal Reserve policy mistake is less likely to negatively impact the economy.

Corporate Earnings

- Starting in 3Q'18, investors turned their attention to 'peak earnings' or the concern that EBITDA and EPS growth were decelerating after a fiscally-simulative boost in late 2017.[14]
- As the chart below shows, EBITDA for the S&P 500 grew ~8% Y/Y in 2018, with consensus expecting growth of 7.4% in 2019.[15]
- We believe earnings growth (EBITDA and EPS) will come under pressure over the next few months as analysts fully factor in higher input costs, interest costs, and top-line pressures into their forecasts. This will remain a headwind for equity prices and credit spreads.

Exhibit 5: Consensus EBITDA Growth (dots are forward 12mo estimate)



Consensus forecasts expect 2019 EBITDA growth of 8.1% in 2019 and 7.4% in 2020

Source: Bloomberg consensus EBITDA. Forecasts are blended forward 12 months. Data through February 1, 2019.

[12] Federal Reserve, January statement, https://www.federalreserve.gov/monetarypolicy/files/monetary20190130a1.pdf.

13 Federal Reserve Board of Governors, "Decisions Regarding Monetary Policy Implementation ", December 19, 2018 and "Statement Regarding Monetary Policy Implementation and Balance Sheet Normalization," published January 30, 2019.

[14] Bank of America Merrill Lynch, "Good and Bad News for Stocks," October 22, 2018.

[15] Bloomberg consensus EBITDA and EPS. Forecasts are blended forward 12 months. Data through December 28, 2018.

Section II: The Credit Market Outlook

2018 Performance Challenged by Several Factors…

Investment grade total returns of -2.5% were the third worst in the past 30 years (-4.9% in 2008, -3.9% in 1994). High yield total returns of -2.1% were the fourth worst in that period. Leveraged loans produced a total return of 1.1%, despite a 3%+ negative total return in the fourth quarter sell-off.[16]

- During the year, fixed income returns were negatively impacted by the gradual normalization of monetary policy with Federal Reserve policy raising both short rates and the long-end of the curve.
- Risk premia drifted higher through the year, with a sharp move wider in the fourth quarter. Most of the damage to the equity and credit markets occurred from October to December, as markets reacted to:
  - A more aggressive Federal Reserve outlook, with Chairman Powell remarking that "we're a long way from neutral" on October 3th, leading to higher Treasury yields.
  - Concerns over 'peak earnings' growth as companies warned of weaker revenue (especially to global markets), expense pressures (from rising input costs) and the lack of tax reform / cheap financing tailwinds.
  - Slower China and European growth, impact of trade negotiations between the U.S. and the rest of the world, political uncertainties in the U.K. and Italy, etc.

…Many of Which Will Continue to Impact Credit in 2019-2020

To date in 2019, the capital markets have reacted well with a sharp rebound in equity prices (+8.1%), and credit total returns (IG +2.2%, HY +4.7%, and loans +2.3%).[17]

While global growth concerns remain (see weak GDP and manufacturing in China and Europe), the market is more comfortable that the Federal Reserve will go more slowly with any further tightening of monetary policy, and that the U.S. and China will work towards a resolution of trade disagreements in a constructive manner.

In our view, even if monetary policy is less restrictive than previously expected and the U.S.-China negotiators come to an agreement on trade (a big if), there are multiple factors which will impact credit over the next 12-24 months:

- Global economies are slowing
- China is slowing, and numerous state policy stimulus measures have yet to stabilize growth
- Hard Brexit is unlikely, but uncertainty around the eventual outcome remains
- Global liquidity is more restrictive today than in 2019 and still declining with Fed balance sheet runoff
- Global inflation is cooling giving central bankers more flexibility on rates, but tight U.S. labor markets and rising input prices from tariffs could change the inflation outlook
- U.S. fiscal policy is less supportive in 2019 than 2018, and the U.S. government shutdown illustrates low probability of additional fiscal stimulus

Therefore, our 2019 base case outlook is for spreads to move modestly wider and for significant increases in U.S. Treasury supply (and other fixed income paper) to require higher rates and spreads to entice buyers.

[16] Bloomberg Barclays fixed income indices and S&P LSTA loan index returns, accessed on Bloomberg on January 2, 2019. Morgan Stanley, "2018 Performance Recap", published January 2, 2019.

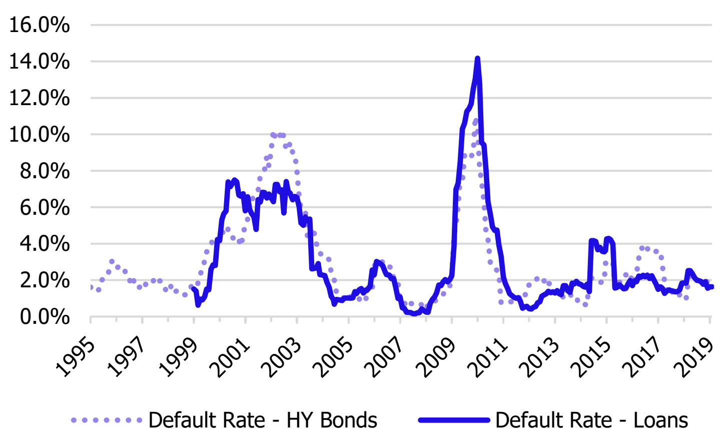
[17] Market prices pulled from Bloomberg on February 4, 2019.

The Next Downturn

As economic / earnings growth slows, and central banks continue to drain liquidity, we believe there is increased risk of the credit cycle progressing from wider spreads to realized downgrades and defaults.

- We expect the next credit cycle will be fundamentally driven (like 2000-04 and the early 1990s) and not caused by capital markets illiquidity / financial firm stress (like 2008-09).
- In our view, the next downturn will include several industry-wide downgrades and credit concerns like 2000-2004. There was a significant amount of leverage incurred this cycle, and a meaningful level of technological disruption and consumer preference change fundamentally changing the revenue outlook for several businesses.
- In credit cycle downturns, two critical considerations for returns are the shape of the default curve (magnitude and duration) and the intensity of losses suffered. In our loss severity models for high yield credit, our base case for the next downturn includes:
  - Default rates like 2001 (i.e., lower peak defaults than 2008-09, but higher cumulative defaults over a multi-year period)
  - Recovery rates like 2008-09 (i.e., lower than 2000-2004 as we believe deteriorating credit quality will impact net returns)
  - Price action of securities like 2008, but more muted (i.e., increased volatility, but less potential for downside)
  - Prepayments in-line with the 2000-04 and 2008-09 levels (i.e., we expect capital markets will remain open, if more expensive, to well-positioned borrowers)

Exhibit 6: We expect the next default cycle will have a similar 'shape' as 2000-2004



Source: JP Morgan HY Bond and Leveraged Loan Default Rates.

We expect a rolling downgrade / default cycle in industries left behind by consumer tastes and e-commerce

As in past cycles, we expect credit issues to arise where debt burdens are misaligned with revenue growth and pricing power, impacting idiosyncratic credits and entire industries. This has happened before; in the early 2000s, the telecom and communications sector experienced significant disruption (WorldCom, Qwest, Global Crossing, etc.) burdened by high capex costs during the economic downturn. Other high-profile bankruptcies included Enron, Kmart, and Conseco.

Further, technology and changing consumer preference are disrupting the revenue models across industries, which we expect will cause longer-term EBITDA pressure in addition to any business cycle pressure on corporate earnings. Looking forward, we see risks in:

- Cable companies (younger generations cutting the cord leads to defensive M&A)
- Tobacco companies (e-cigarettes)
- Brewers (fewer people drink beer, especially mass-produced brands)
- Bricks and mortar retailers who fail to adopt an omnichannel strategy (also impacts malls and shopping centers)
- Consumer staples companies unable to push prices higher due to e-commerce competition
- Freight transportation (impact of driverless cars and trucks, potential disintermediation by Amazon)
- 5G communications (telecom companies spending on both infrastructure upgrades and content creation)

We believe the current watch list (from Deutsche Bank) is instructive on the potential downgrade risks in the market today, which would add considerable debt into the high yield markets and impact demand in that market.

- According to Deutsche Bank, there are currently $271bn of BBB rated bonds on S&Ps negative credit watch (compared to $62bn of BB rated bonds on positive watch).[18]
- These issuers are concentrated in financials, utilities, capital goods, automotive, and media / telecom, which includes several industries experiencing structural headwinds from changing consumer patterns and technological disruption.

Exhibit 7: BBB-Rated Issuers with Negative Watch or Outlook by S&P

BBB rated issues with negative watch or outlooks by S&P

By Sector				
Industry	**All BBBs**	**BBB1**	**BBB2**	**BBB3**
Financials	$39,959	$19,289	$12,545	$8,125
Utilities	$37,052	$10,671	$5,700	$20,681
Capital Goods	$35,450	$31,650		$3,800
Automotive	$33,740			$33,740
Media	$32,328		$11,057	$21,271
Telecommunications	$31,956	$28,159		$3,797
Energy	$31,257	$6,187	$6,874	$18,196
Food	$8,882		$350	$8,532
Real Estate	$5,515		$5,515	
Technology	$5,300			$5,300
Packaging	$3,050		$3,050	
Metals	$2,000		$2,000	
Retail	$1,450	$1,150		$300
Transportation	$1,400			$1,400
Health Care	$1,050			$1,050
Chemicals	$700			$700
Consumer Products	$500	$500		
Total	**$271,589**	**$97,606**	**$47,091**	**$126,892**

By Issuer				
Company	**Ticker**	**Industry**	**Rating**	**FaceUSD**
Ford	F	Automotive	BBB3	$33,740
United Technnoly	UTX	Capital Goods	BBB1	$29,550
Vodaphone	VOD	Telecommunications	BBB1	$18,309
PG&E Corp.	PCG	Utilities	BBB3	$17,505
American Intl' Group	AIG	Financials	BBB1	$16,514
Williams Partners	WPZ	Energy	BBB3	$13,600
Discovery	DISCA	Media	BBB3	$13,192
Deutsche Telekom	DT	Telecommunications	BBB1	$9,850
Intesa Sanpaolo	ISPIM	Financials	BBB2	$9,000
Conagra Brands	CAG	Food	BBB3	$8,532
CBS	CBS	Media	BBB2	$7,807
Viacom	VIA	Media	BBB3	$7,729
Synchrony Financial	SYF	Financials	BBB3	$6,750
Sempra Energy	SRE	Energy	BBB1	$4,550
Williams Companies	WMB	Energy	BBB3	$4,157
VM Ware	VMW	Technology	BBB3	$4,000
Johnson Controls	JCI	Real Estate	BBB2	$3,915
Subtotal				**$208,700**

Source: Deutsche Bank Credit Chartbook, December 2018.

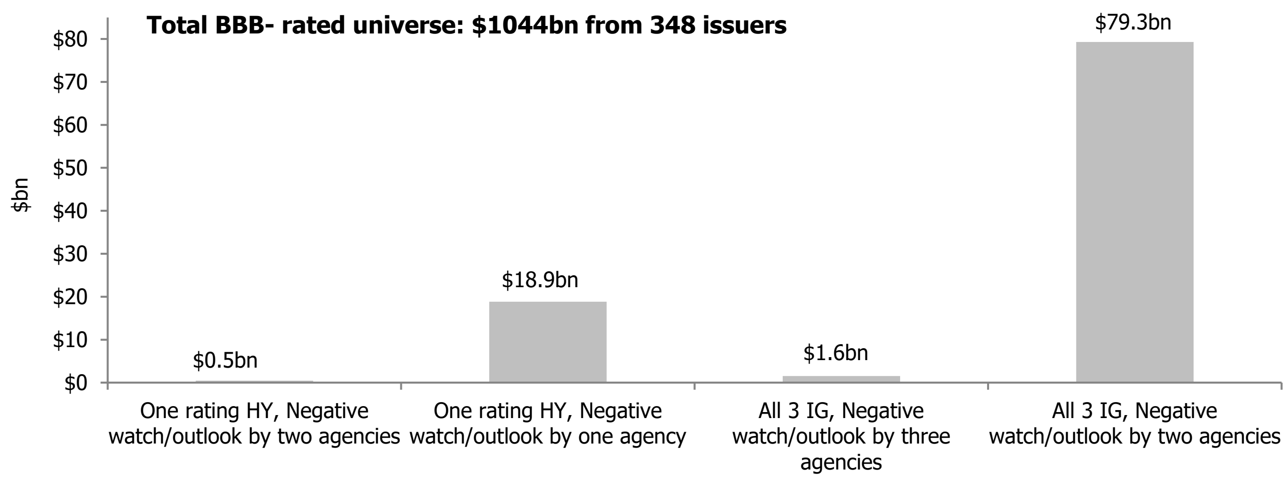
[18] Deutsche Bank Credit Chartbook, December 2018.

Potential Fallen Angels vs Rising Stars

We believe there will likely be more downgrades to high yield than upgrades to investment grade, adding net new supply to the HY markets and pressuring spreads.

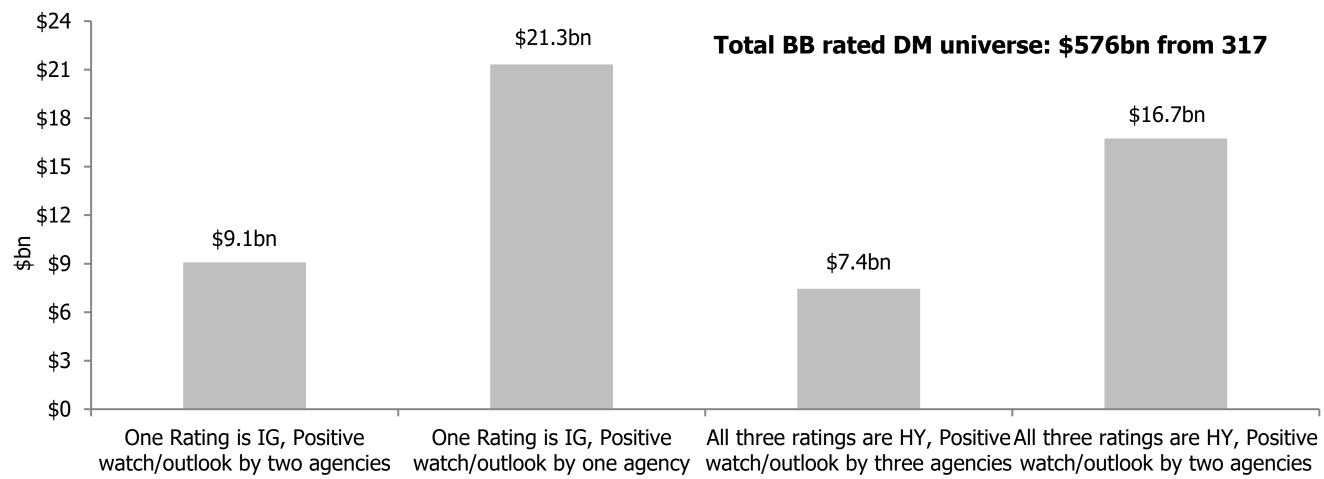
- JP Morgan highlighted $100bn of BBB- rated bonds with negative credit outlooks from one or more agencies, and/or one high yield rating already.[19]
- This compares to $55bn of BB rated bonds with positive credit outlooks from one or more agencies, and/or one investment grade rating already.[20]

Exhibit 8: JPM Potential Fallen Angels (Jan 2019)



Source: JP Morgan, "High-Yield and Leveraged Loan Morning Intelligence," January 22, 2019.

Exhibit 9: JPM Potential Rising Stars (Jan 2019)



Source: JP Morgan, "High-Yield and Leveraged Loan Morning Intelligence," January 24, 2019.

[19] Source: JP Morgan, "High-Yield and Leveraged Loan Morning Intelligence," January 22, 2019.
[20] JP Morgan, "High-Yield and Leveraged Loan Morning Intelligence," January 24, 2019.

Section III: Select Asset Performance and Pretium Outlook

Investment Grade

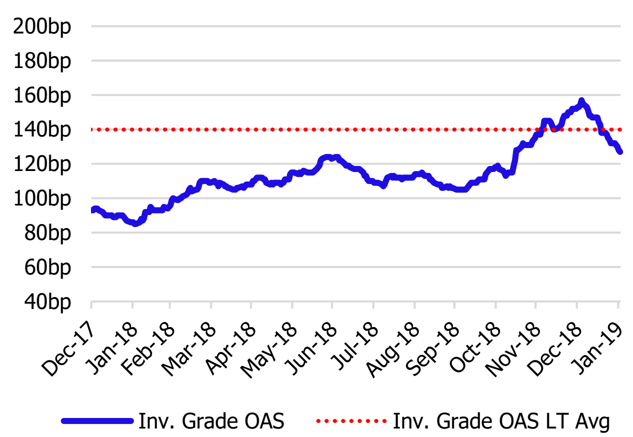
In 2018, IG credit turned in its worst performance since the Great Recession, and third worst in the past 30 years with total returns of -2.5%.

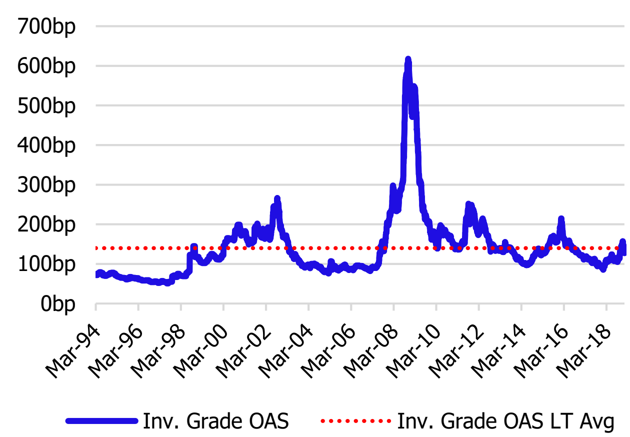
- Spreads started 2018 at 93bp, compressed to 85bp in February before moving wider through the balance of the year to 153bp. During the fourth quarter, spreads moved materially wider on global growth / cycle concerns.
- IG credit was impacted by the increase in Treasury yields across the curve, with longer-duration 10+ Year IG showing lower excess returns (-6.1%) than shorter duration 1-5 year IG (-0.4%).[21]
- Demand was impacted by several factors including waning demand from foreign investors as hedging costs into local currencies moved against Asian and European investors. There were also limited inflows into retail funds, and less demand from corporates who repatriated large sums of cash from overseas following the Tax Reform Act.[22]
- Issuance remained high with gross supply of $1.3tn after $1.4tn in 2017. Bank of America expects gross supply of $1.2tn in 2019, with a similar decline in net issuance ($650bn in 2018 going to $510bn in 2019).[23]

In 2019, we expect continued spread widening for IG credit, with higher volatility from financial conditions

- In short, investors take rate risk when they invest in higher quality IG bonds, and rates moved sharply higher. Rates are moving lower with a more dovish Fed but we see risks to higher long rates in 2019.
- There has been a significant deterioration in credit quality across IG as the index grew sharply over the past 10 years. We expect more credit issues to emerge for industries and idiosyncratic issuers over the next few years. Further we believe more investor scrutiny on the risks to the BBB index may impact fund flows / spreads within IG.
- Further, the goldilocks investment environment where credit risk was supported by central bank easing is over, and an environment with long-rates and market volatility are bad for credit spreads.

Exhibit 10: Investment Grade OAS





Source: Bloomberg Barclays U.S. Credit Index OAS. LT Average since 1994. Data through February 1, 2019.

[21] Bloomberg Barclays Corporate Credit indicies, accessed from Bloomberg on January 2, 2019.
[22] Goldman Sachs, "Credit Notes: 2018 in Retrospective: The Year of the Regime Change", December 19, 2018.
[23] BofA, 2019 High Grade Supply Outlook, October 29, 2018.

Focus on Growth of IG Market and IG Leverage

Since 2008, the IG market has increased by $3.6tn, or 140%. The BBB ratings bucket has increased in size by 450% or $2.3tn. There was a growing focus through the year on the BBB ratings bucket which is now 45% of the IG bond market.[24]

We expect there will be considerable downgrades from BBB to high yield over the next 2-4 years, given the number of structurally challenged companies / sectors that may lose their investment grade ratings over time. The question is what magnitude of downgrades, and over what period, will enable the high yield market to digest the "fallen angel" paper in an orderly manner.

Exhibit 11: Growth of Overall IG and BBB Debt Markets

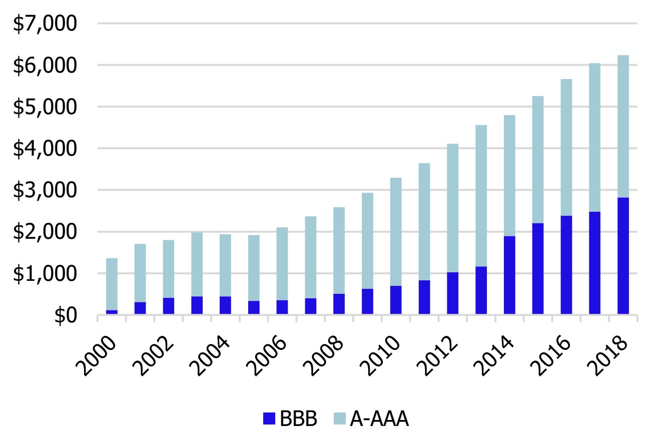
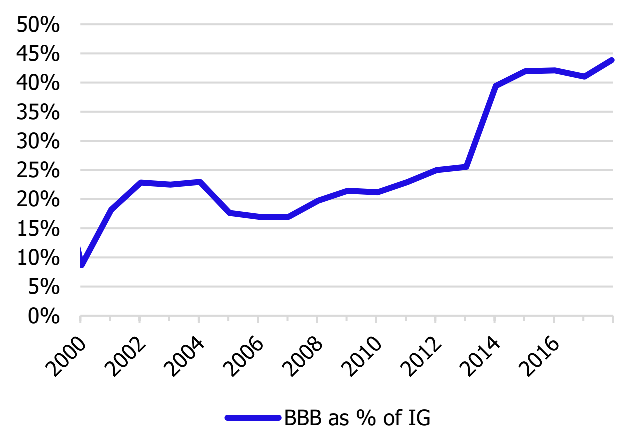


Exhibit 12: BBB debt as % of IG



Source: Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 31, 2018.

We are less concerned than some about the leverage in the IG market. It is elevated relative to history with gross leverage of 2.4x, above the long-run average of 1.9x (since 2000), and net leverage of 1.6x, above the long-run average of 1.3x.[25]

However, interest coverage remains healthy for IG borrowers (11.8x vs. 11.6x average), and, while it is down from peak coverage in 2014, it remains high, driven by moderate revenue growth and low in-place costs of financing.[26]

Exhibit 13: Investment Grade Gross and Net Leverage

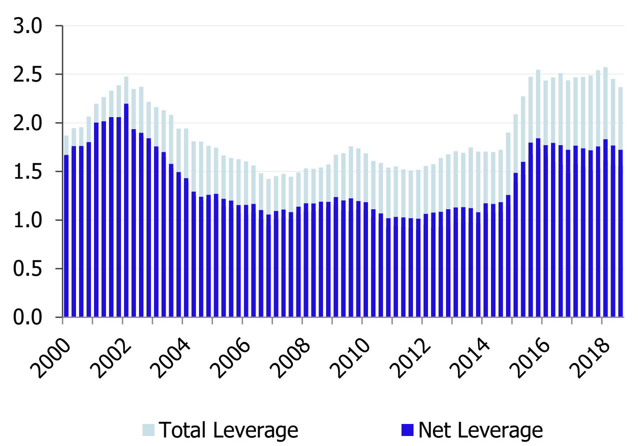
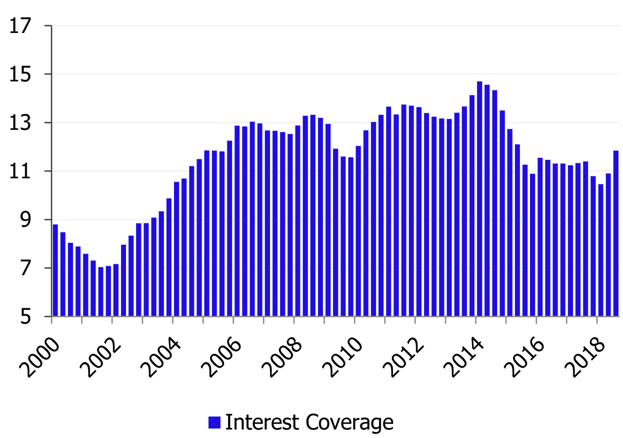


Exhibit 14: Investment Grade Interest Coverage Ratio



Source: Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 31, 2018.

[24] Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 31, 2018.
[25] Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 31, 2018.
[26] Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 31, 2018.

High Yield

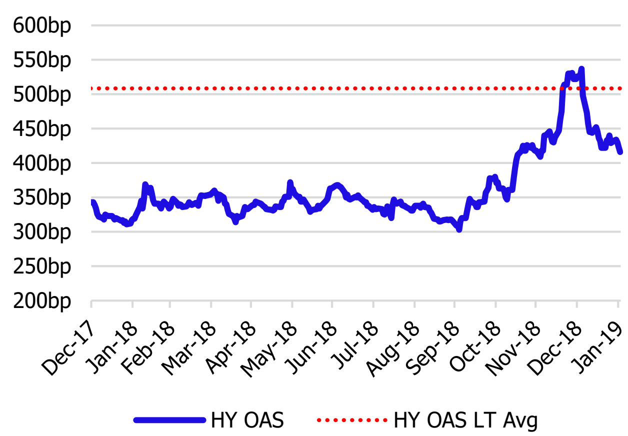
In 2018, HY credit underperformed comparable risk-free fixed income, posting a total return of -2.1%. The total return was the fourth worst performance since 1994, although well above the performance in 2015 (-4.5%) or 2008 (-26.2%). Excess returns were -3.6% with -6.7% excess returns in the fourth quarter alone.[27]

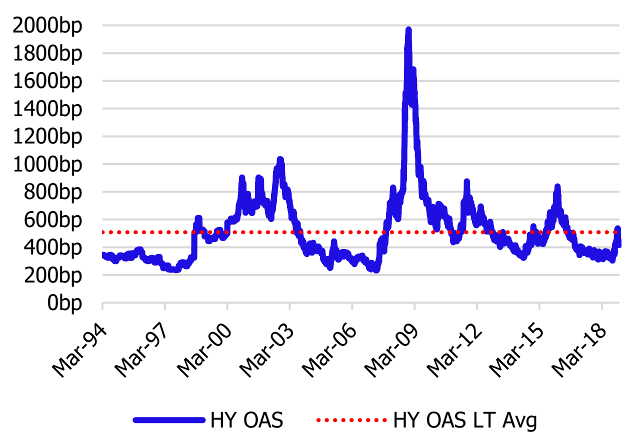
- HY spreads outperformed IG for much of the year, as investors sold rate risk but were generally comfortable with credit risk through the first three quarters of the year. HY spreads started 2018 at 343bp, compressed to a low of 303 in October, before widening to 526bp at the end of the year.
- HY defaults were just 1.9% in 2018, with JPM forecasting defaults of 1.5% in 2019. For context, since 1998 HY defaults averaged 2.9%.[28]
- Technical were supportive for HY as the sector saw gross issuance of just $170bn, with negative net issuance of $15bn according to Barclays.[29] HY issuers are increasingly turning to the loan market for less restrictive covenants.
- Looking forward, consensus expects ~$190bn of gross issuance in 2019, and $90bn of net issuance.[30]

We believe the high yield market is at risk of a sharp increase in net supply from both fallen angels out of BBB investment grade buckets, as well as the potential for current loan issuers to shift back to the high yield market if there is a dislocation in the leveraged loan market. Given the negative flows in the HY market through 2018 and concerns surrounding rates and credit risk, that combination could prove difficult for spreads.

In addition to the increase in debt, there is a repricing of risk which occurs when high quality companies move from high grade to high yield as existing high yield issuers are now competing for capital with potentially higher quality credits. For example, in June 2018 $2.9bn of Wyndham Worldwide (lodging) debt moved into the high yield index. An investor allocating to lodging, or consumer discretionary more broadly was given another large company to allocate capital, potentially increasing the cost of debt for similar but smaller / lower quality companies.[31]

Exhibit 15: High Yield OAS





Source: Bloomberg Barclays High Yield and U.S. Credit Index OAS. LT Average since 1994. Data through February 1, 2019.

[27] Bloomberg Barclays High Yield Index OAS. Data through January 2, 2019.
[28] JP Morgan, "2018 High Yield Annual Outlook", published December 21, 2018.
[29] Barclays, "U.S. High Yield Corporate Update", published January 2, 2019.
[30] Average of most recent gross and net issuance forecasts from Bank of America, Barclays, JP Morgan, and Morgan Stanley.
[31] JP Morgan, "Default Monitor," July 1, 2018.

Focus on HY Leverage

Like the IG market, HY leverage is near long-term averages. Gross leverage of 4.1x compares to the long-run average of 4.5x (since 2006), with net leverage of 3.5x in-line with the long-run average of 3.8x. Cash flow coverage is above average, with interest coverage of 4.5x, compared to 3.4x over the past 11 years, and in a consistent uptrend since the energy credit crisis of 2015-16.[32]

Exhibit 16: High Yield Gross and Net Leverage

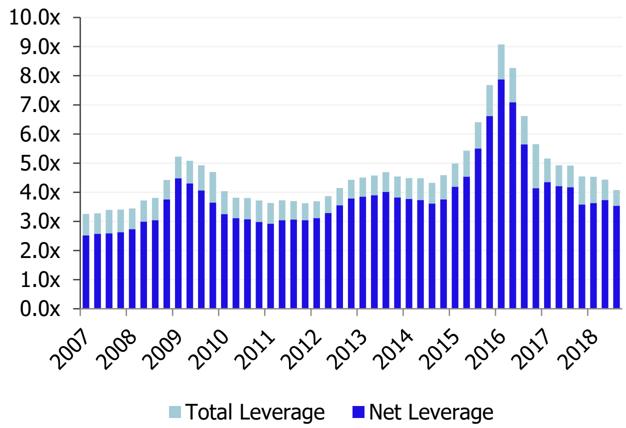
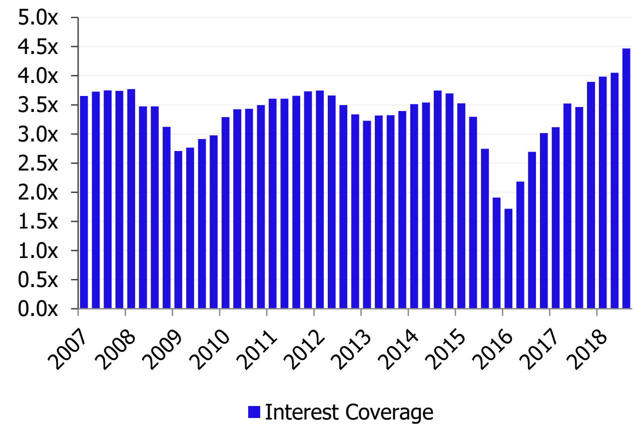


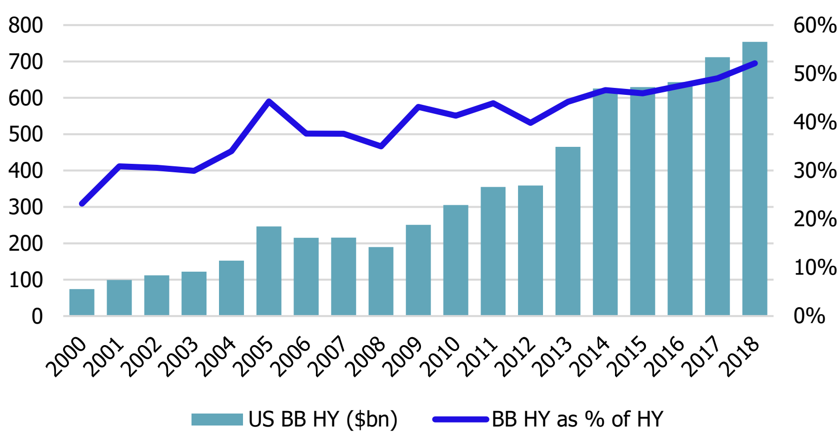
Exhibit 17: High Yield Interest Coverage



Source: Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 31, 2018.

One interesting feature of the HY market is the improving index rating, with a greater proportion of BB rated issuers than at any point in the past 18 years. This is in contrast with the IG market (seeing more BBB issuers) and the loan market (with more B rated issuers).[33]

Exhibit 18: Credit Quality of HY Index Improving



Source: Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 31, 2018.

[32] Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 31, 2018.
[33] Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 31, 2018.

Bank Loans

In 2018, leveraged loans saw significant growth in the asset class and outperformance for much of the year due to their floating rate structure and a benign credit backdrop.

- Loans posted a total return of 1.1%, although they gave up 310bp of performance in 4Q'18 as expectations for 2019/2020 rate hikes receded and credit risk products in general saw wider spreads and lower demand.
- Loan prices averaged $98.40 in the first three quarters of the year, but fell in the fourth quarter to finish 2018 at $93.84 before rebounding to the $96 range in January 2019.[34]
- According to Deutsche Bank, the leveraged loan market grew from $1.00tn in 2016 to $1.12tn in 2017 and to $1.35txbn in 2018. Consensus expects net loan issuance of $257bn in 2019, although these estimates are likely too high given the negative retail fund flows into loans which will likely depress overall demand from investors and therefore pricing for borrowers.[35]
- Growth in the loan market came at the expense of credit quality, both in terms of the ratio of B and below issuers in the market (from 34% of outstanding loans in 2015 to 45% in 2018) as well as a sharp increase in covenant lite ("cov-lite") loans. In 2018, 84% of new loans were cov-lite, compared to 45% issued since 1998.[36]

Exhibit 19: Average Loan Price (S&P LSTA)

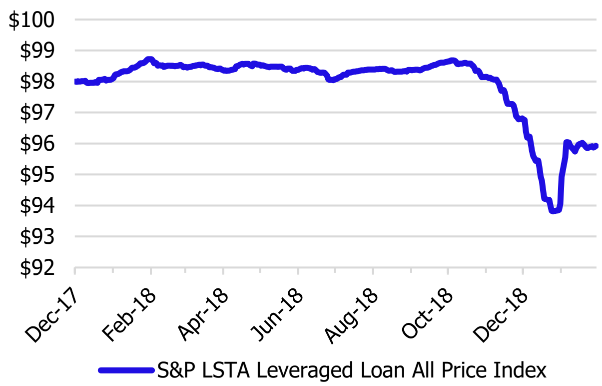
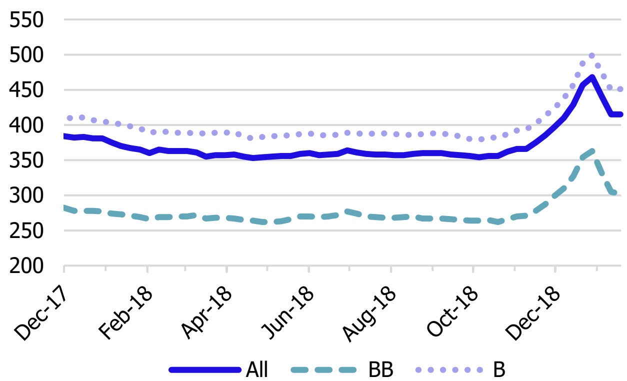


Exhibit 20: Loan spreads (BofA)



Source: S&P/LSTA leveraged loan prices, from Bloomberg. Bank of America CLO and loan spread data. All data through February 1, 2019.

The loan market is facing a headwind from negative fund flows and less CLO issuance which may limit spread compression and issuance volumes. That said, underlying fundamentals should remain healthy in 2019.

- Beginning in 4Q 2018, the leveraged loan market saw large outflows, primarily from loan focused ETFs and mutual funds as investors pulled back expectations for further rate increases. As a floating rate debt instrument, loans tend to see greater demand in rising rate environments than in flat or declining rate environments. The market has meaningfully changed its view on the probability and pace of rate increases impacting demand.
- In addition to less loan demand, there has been less demand for CLOs (also floating rate debt facing a similar rate headwind). The first new issue CLOs did not price until the last week of January 2019, at wider costs of capital than the market enjoyed in 2018. Considering that CLOs buy 65% of loan issuance, the loan market needs to see a reopening of the CLO market early in 2019 or issuance will likely slow and migrate to the HY bond market.
- There is good fundamental news; near-term default expectations remain low for the loan space. According to J.P. Morgan, 2018 defaults were 1.56%. and are projected to be 1.5% in 2019.[37] Wells Fargo notes that "earnings and interest coverage ratios are high, and near-term maturities are limited."[38]

[34] S&P/LSTA leveraged loan prices accessed through Bloomberg. Data through February 1, 2019.

[35] Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 31, 2018. Average of most recent gross and net issuance forecasts from Bank of America, Barclays, JP Morgan, and Morgan Stanley.

[36] Bank of America, "High Yield Chartbook", December 2018. JP Morgan, "High-Yield and Leveraged Loan Morning Intelligence," January 29, 2019.

[37] JP Morgan, "2018 High Yield Annual Review", December 20, 2018.

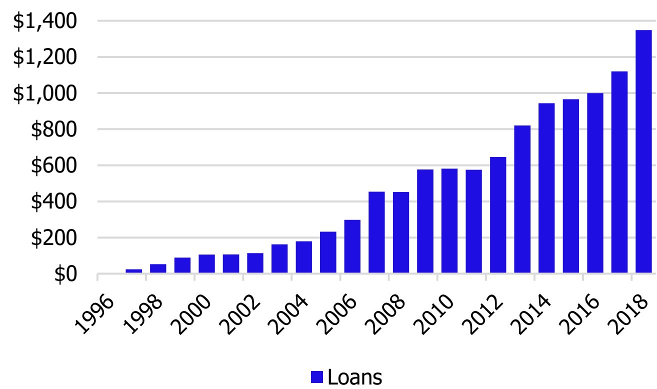
[38] Wels Fargo "Five Minute CLO Check-In", December 17, 2018.

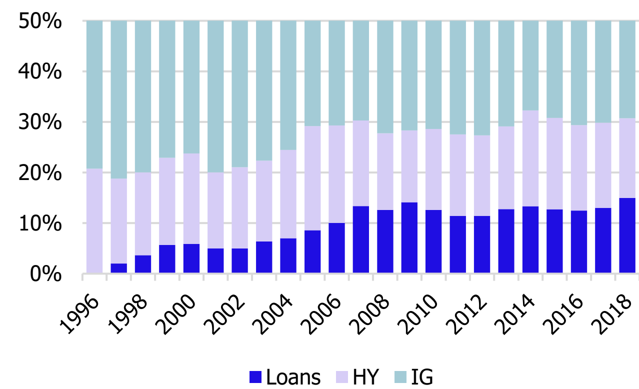
- Further, the lack of covenants in loans make near-term defaults less likely as lenders have fewer items to trigger credit events early in the life of a loan. That said, we believe the significant growth and weakening terms / credit in the loan market will lower ultimate recoveries in the next downturn.
- We believe the risk-reward over the next 12-24 months favors increasing exposure to BB loans and less in B / CCC loans. When the credit cycle turns, we expect BB rated loans will trade better than the index averages, providing downside protection and better liquidity for reinvestment.

Loan Market Has Grown Substantially with Increasing Share of Lower Ratings Quality

Since 2007, the leveraged loan market has increased in size to $1.35tn, and is now comparable in size to the high yield debt market. Loans now make up 15% of the publicly listed corporate debt market, up from 13% in 2013 and 10% in 2006.[39]

Exhibit 21: Loans Quickly Growing as % of Debt Markets

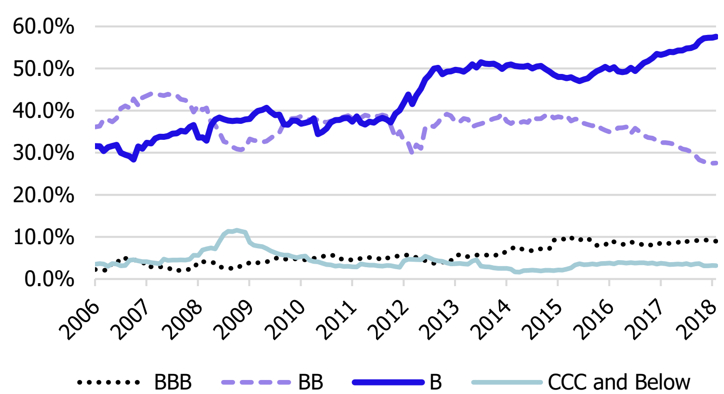




Source: Bank of America, High Yield Chartbook, data through December 2018. Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 30, 2018.

One area of concern is the deteriorating ratings quality of the loan index. For loans with ratings, 58% are rated B+, B, or B-. That proportion was 38% in December 2009 and 32% in December 2006. We expect that lower rated loans, all else equal, will experience higher levels of defaults and lower recoveries than a higher average rates index.[40]

Exhibit 22: Almost 60% of the Loan Universe Rated B, up from ~40% in 2009



Source: JP Morgan, "High-Yield and Leveraged Loan Morning Intelligence," January 29, 2019.

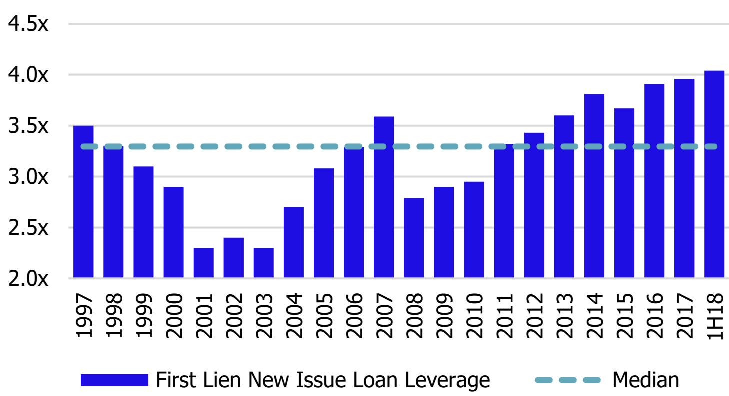
[39] Deutsche Bank, U.S. Credit Strategy Chartbook, data through December 30, 2018.
[40] Ibid.

Risks: Higher Leverage and Fewer Covenants

The risks to the leveraged loan market over the next 2-4 years are increasing and two issues are concerning for future recoveries. The increase in leverage and decrease in covenants are likely to result in lower recoveries and longer timelines to resolve credit issues when they arise.

First lien loan leverage has increased to more than ~4x, compared to a long-run median of 3.3x. Leverage has been in the 4x range for the past three years, which coincided with a dramatic increase in loan issuance.[41]

Exhibit 23: New First-Lien Loan Issuance Leverage



Source: S&P Global, LCD data through 2Q'18. Morgan Stanley Research, U.S. Credit Strategy: U.S. Credit Strategy Chartbook. As of June 2018.

One key difference in this cycle is the increasing lack of covenants in the loan market, which we expect will lead to a more prolonged default curve than in past cycles where there were more 'triggers' to lead to a default.

Credit quality has deteriorated with increasing levels of cov-lite loans. In fact, since 2013 almost 80% of issued loans have been cov-lite according to S&P Global research.[42] For those loans that do have covenants, there are generally fewer covenants utilized with a Debt to EBITDA covenant the most common.[43]

A lack of covenants gives term loan lenders fewer options for addressing businesses with deteriorating fundamentals / balance sheets early on. Generally, there are still covenants with the revolving line of credit lender, but those lenders may have different priorities than the term loan lenders.

Exhibit 24: Cov-Lite as % of Loan Issuance

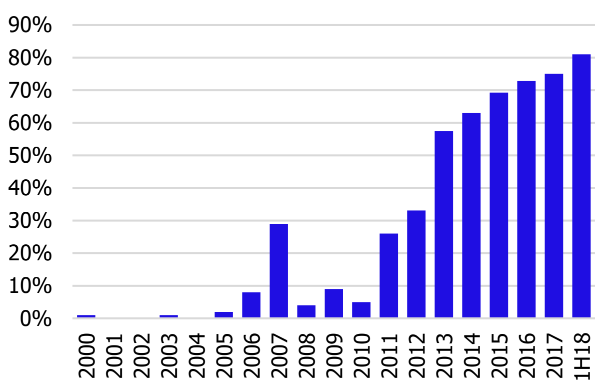
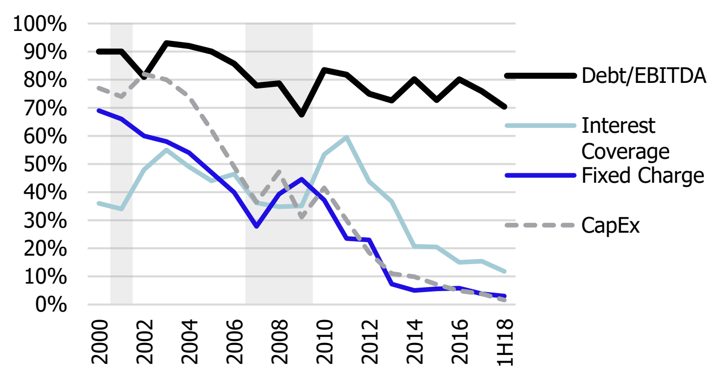


Exhibit 25: Covenants in Loans Which Retain Covenants



Source: S&P Global, LCD data through 2Q'18.

[41] S&P Global, LCD data through 2Q'18, "Credit Stats: Average Debt Multiples of Highly Leveraged Loans."
[42] S&P Global, LCD data through 2Q'18, "Volume: New-Issue U.S. Covenant-Lite Loans."
[43] S&P Global, LCD data through 2Q'18, "Covenant/Security: Incidence of Key Covenants in First-Lien Lev. Loans."

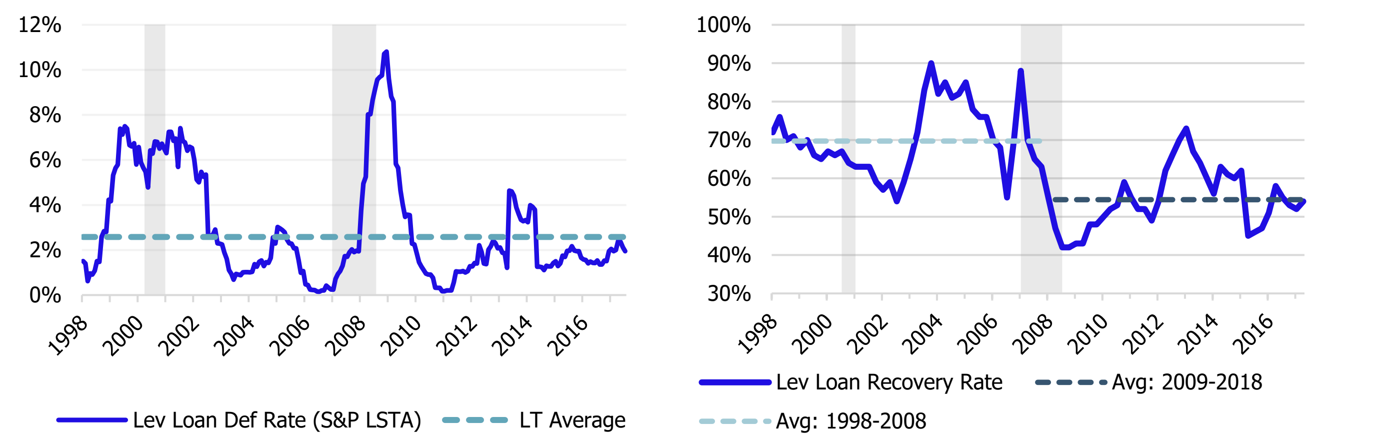
Future Defaults and Recoveries: Loans

The leveraged loan market saw lower default activity in 2000-04 and 2008-09 than the high yield unsecured bond market. In both cycles, recovery rates were higher for loans than bonds, which is not surprising given loans are secured and, therefore, higher in the capital structure.

- In 2000-04, the loan market saw 4.6% defaults and 70% recoveries.
- In contrast, in 2008-09 the loan market saw just 2.5% default rates and recoveries in the ~50% range.

Looking forward, we expect leveraged loan performance to be more like 2008-09 than 2000-04, as deteriorating credit and covenant quality will likely lead to lower recovery rates.

Exhibit 26: Leveraged Loan Default Rates and Recovery Rates (Grey Bars = Recessions)



Source: S&P Global, LSTA loan data, through 2Q'18.

In a recent report, Moody's Investor Services argued that "the combination of aggressive financial policies, deteriorating debt cushions, and a greater number of less creditworthy firms accessing the institutional loan market is creating credit risks that foreshadow an extended and meaningful default cycle once the current economic expansion ends…[t]he result is more defaults than the last downturn as well as lower recoveries, undercutting a foundational premise for investing in loans."

Moody's lowered their recovery rate outlook for first-lien bank loans to ~60%, not the 77% average from 1988-2018. Further, they forecast second-lien recoveries of 14% compared to a 43% historical average.[44]

According to S&P Global's LeveragedLoan.com, "The lurking danger of cov-lite is not just the risk of poor recoveries. It is also the risk of "zombie" credits that do not default, but simply limp through a prolonged downturn."[45] S&P adds that the average recovery rate on cov-lite loans issued before 2010 is 78%. "That figure drops to 56% for cov-lite loans originated in 2010 and after."[46]

[44] Moody's Investor Services, "Moody's: Convergence of loan and high-yield bond markets sets stage for lower recoveries in next downturn," August 16, 2018.
[45] S&P Global LCD, LeveragedLoan.com, "Covenant-lite Leveraged Loans: After Default, Whither Recoveries?," July 23, 2018.
[46] S&P Global LCD, LeveragedLoan.com, "Covenant-lite Leveraged Loans: After Default, Whither Recoveries?," July 23, 2018.

CLOs

In 2018, the CLO market experienced a similar trajectory as the loan and investment grade market, with a spring rally followed by steady spreads through the spring and summer, before a meaningful selloff into year-end.

- The CLO market was impacted by the widening of IG spreads in the spring as supply increased and demand (including the end of QE) waned. In addition, the CLO market saw a large amount of deals entering their reset / refi period, which added a considerable amount of new supply to the market.
- That said, demand for CLOs remained strong through most of 2018 due to demand for floating rate, structured paper.
  - Total returns for AAA CLO debt were +1.7% in 2018, down from 1.9% from January through September 30, 2018. Mezzanine debt was impacted more than higher rated debt; total returns for BBB CLO debt were -0.7% in 2018, in contrast to +2.9% from January through September 30, 2018. CLO pricing turned negative in the fourth quarter as demand for floating rate debt waned and concerns over end of cycle / credit issues in the loan markets sent loan prices lower.[47]
  - In February 2018, secondary AAA spreads narrowed to 85bp, down ~10bp from the start of the year, before widening in the fourth quarter to end the year at ~145bp. Similarly, BBB spreads hit a low of 257bp in early February, before moving wider to finish the year at 407bp.[48]
- CLO issuance was $125bn gross and $80bn net, in addition to $123bn of refi/reset volume. Consensus forecasts are generally for net CLO issuance of 60-65% net loan issuance. [49]
- CLOs have become the primary buyer of loan originations. According to S&P LCD, CLOs have acquired over 60% of loan volume in 2014-2017, with 64.8% of loans originated in in the first half of 2018 acquired by CLOs.[50]

We expect the CLO market will see wider spreads in 2019, in concert with wider spreads in the loan market and investment grade market. In late January 2019 several new issue CLOs priced, with AAA spreads in the 130bp range (up from ~110bp in the summer of 2018). It was positive to see deals price, but clearly the cost of funds has increased.

We expect there to be demand for CLOs, although not at the same level as 2018 given the outlook for fewer rate increases and late cycle recession / credit concerns. We expect higher rates in 2019 will support demand, and cross currency hedging costs have moved in favor of foreign investors with the pullback in the U.S. dollar, making CLOs and other fixed income investments more attractive to non-U.S. investors.

Exhibit 27: CLO AAA and BBB discount margins

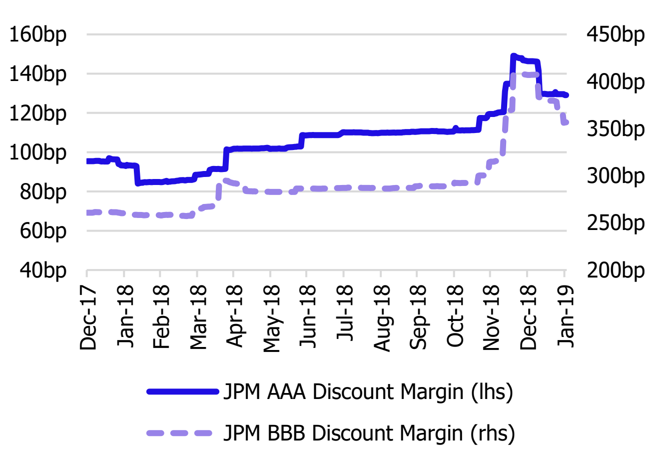
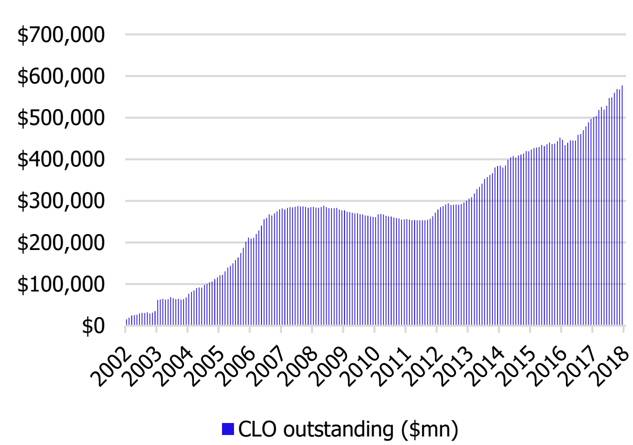


Exhibit 28: CLOs Outstanding



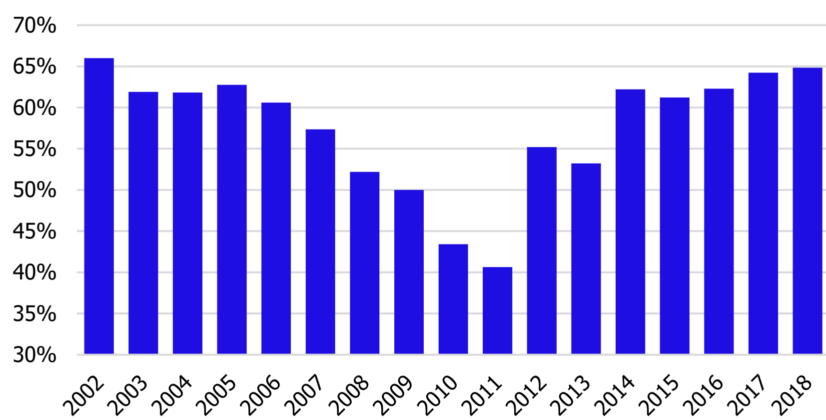
Source: JP Morgan post-crisis CLO indices accessed through Bloomberg. Data through February 4, 2019. CLO Outstanding from Bank of America High Yield Chartbook, December 2019.

[47] JP Morgan post-crisis CLO indices accessed through Bloomberg. Data through January 2, 2019.
[48] Ibid.
[49] Average of most recent gross and net issuance forecasts from Bank of America, Barclays, JP Morgan, and Morgan Stanley.
[50] S&P Global, LCD data through 2Q'18," Primary Investor Market: Institutional Market by Type – 1H18.

CLOs a Significant Buyer of Loans

CLOs have become the primary buyer of loan originations. According to S&P LCD, CLOs have acquired over 60% of loan volume in 2014-2017, with 64.8% of loans originated in the first half of 2018 acquired by CLOs.[51]

Exhibit 29: CLO Purchases as % of Loan Issuance



Source: S&P Global, LCD data through 2Q'18.

Improved Hedging Costs Should Increase Foreign Bid For CLO Debt

For much of 2018, the U.S. dollar strengthened with the trade weighted dollar up almost 5% Y/Y.[52] One negative of dollar strength was more expensive cross currency hedging for Japanese and European fixed income investors. More recently, the dollar has weakened with an outlook for less Federal Reserve monetary tightening in 2019.

The cross-currency swap for Japanese investors is now -14bp (swapping USD for JPY for 3 months), near the lowest drag since July, while the swap rate for European investors subtracts 7bp from returns.[53] We expect these trends will support additional foreign investment in U.S. fixed income going forward.

Exhibit 30: JPY-USD and EUR-USD Basis Swaps

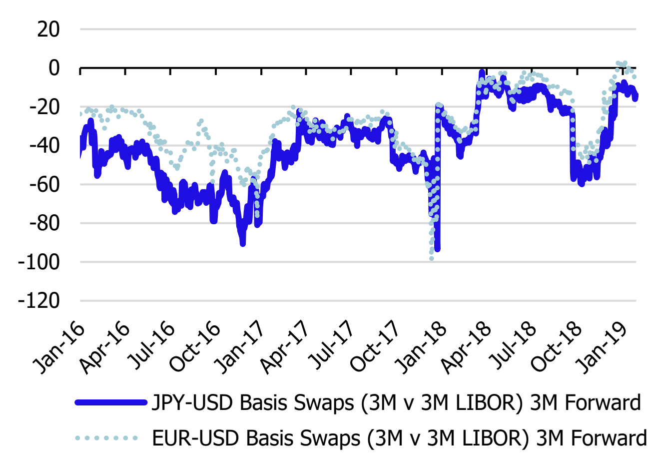
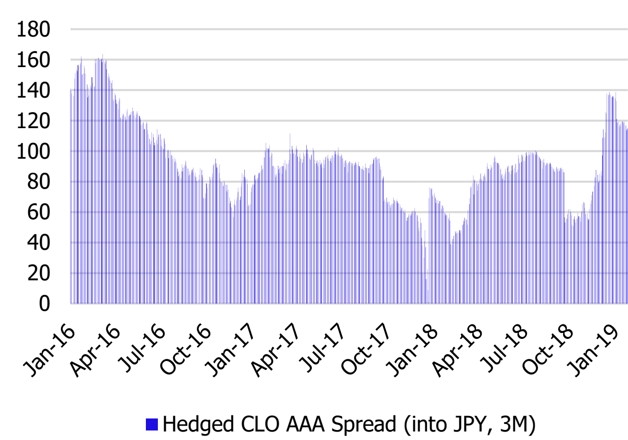


Exhibit 31: JPY Hedged CLO AAA Spread



Source: JPY-USD basis swap from Bloomberg, ticker JYBSC. EUR-USD basis swap from Bloomberg, ticker JYBSC Data through February 1, 2019. CLO spreads from JPM, post-crisis secondary discount margin index. Data from Bloomberg through February 1, 2019.

[51] S&P Global, LCD data through 2Q'18," Primary Investor Market: Institutional Market by Type – 1H18.

[52] Bloomberg dollar index, ticker DXY. Data through February 1, 2019.

[53] JPY-USD basis swap from Bloomberg, ticker JYBSC. EUR-USD basis swap from Bloomberg, ticker JYBSC Data through February 1, 2019.

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This report contains forward-looking statements, which can be identified by the use of forward-looking terminology such as "may," "will," "should," "seek," "expect," "anticipate," "project," "estimate," intend," continue," "target," "plan," "believe," the negatives thereof, other variations thereon or comparable terminology and information that is based on projections, estimates, and assumptions. Such statements and information cannot be viewed as fact and are subject to uncertainties and contingencies. Actual results during the period or periods covered by such statements and information may differ materially from the information set forth herein, and no assurance can be given that any such statement, information, projection, estimate, or assumption will be realized or accurate.

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