

It's Like Deja Vu All Over Again: The Ninth Inning of the High Yield Bubble

Ellington Management Group

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1 Introduction

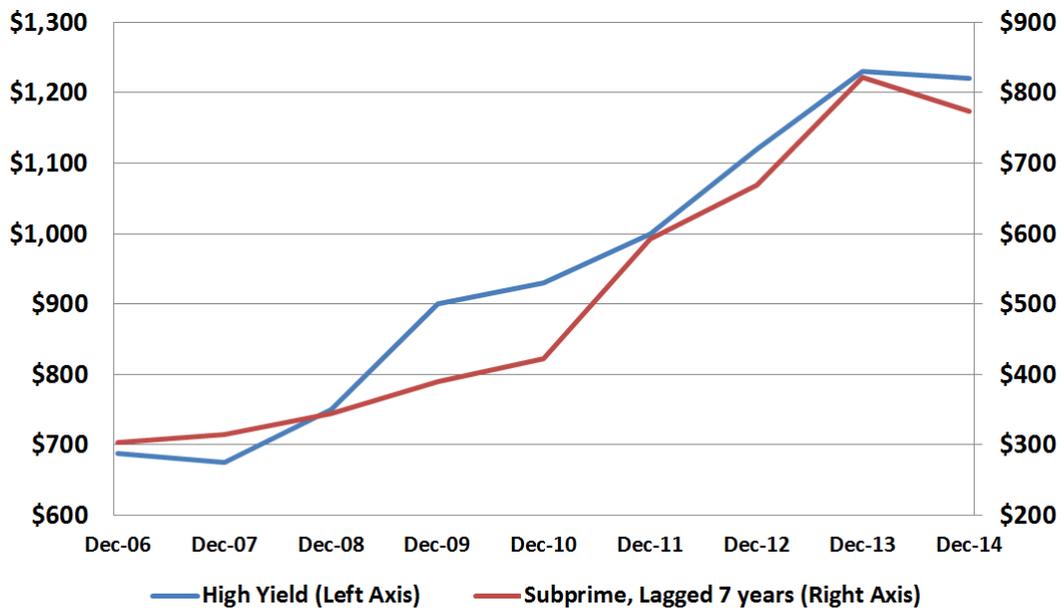


Figure 1: High Yield Corporate Debt Vs Subprime Mortgage Debt Outstanding, \$Billions.
Source: SIFMA and BofA Merrill Lynch Global Research.

Seven years ago, the world economy careened toward financial collapse in what came to be known as the Global Financial Crisis (GFC). What started as a spike in defaults in the rapidly growing \$800 billion subprime mortgage market eventually spread to even the highest credit borrowers. Default rates skyrocketed due to falling home prices and rising unemployment, as well as the uncovering of fraudulent mortgage underwriting practices. The crisis led to the demise of many mortgage trading shops and banks, including Lehman Brothers. Markets created leverage through securitization and the assumption that home prices would never decline. What began as a legitimate housing boom in the early 2000s on the heels of historic low interest rates, government policies aimed at increasing homeownership, and shoddy lending standards grew into a bubble that ended in financial calamity.

These same hallmarks of the subprime mortgage bubble - outsized lending to riskier borrowers, record low interest rates, dubious underwriting practices and collateral valuation assumptions, misalignment of incentives between managers and investors, and weakening fundamentals - are all present today in high yield corporate debt markets. The difference today is that the Fed has been trying to revive the economy with zero interest rates for the past seven years. The extraordinary policy measures that got us out of the last bubble have helped create today's corporate credit

bubble. As the recently deceased baseball great and armchair philosopher Yogi Berra would have said, it's like *deja vu* all over again.

Lower interest rates make it cheaper for corporations to borrow. They also compress risk spreads, pushing investors into riskier assets in a reach for yield. And what better way to capture yield than to invest in high yield? Retail investors and institutions have entered the corporate credit market en masse through mutual funds and ETFs, vehicles that create an asset-liability mismatch by providing daily liquidity to investors where the underlying assets typically trade less than once a day. Unlike the traditional investors in corporate credit, these investors exhibit more short-term return-chasing behavior, creating a feedback loop between asset prices and asset flows.

In short, we believe that we are primed for a default and deleveraging cycle in corporate credit, for four reasons:

1. The imbalances in corporate credit are much greater than they were in past cycles
2. The new holders of corporate credit are more inclined to sell when prices fall, exacerbating price declines
3. The underlying assets have become much less liquid due to post-crisis regulation of bank balance sheets, further exacerbating price declines
4. Tightening of corporate lending standards in recent months has marked a decisive turn in the credit cycle

As in most deleveraging cycles, we believe that the weakest links will break first, in lower-rated collateral and in the Energy, Basic Materials, and Metals & Mining sectors. However, unlike the start of most deleveraging cycles, the policy easing tools of central banks are largely exhausted. Today the Fed has established more of a precedent that central banks will intervene to support markets, but the ability to provide such support is far more limited than in the past. The Fed lowered rates by more than 5% in both the 2001 and 2008 easing cycles, helping many borrowers who would have otherwise defaulted. Not this time with interest rates at zero. While the Fed's decision to keep rates fixed in September and again in October kicked the can down the road for a few months, the panacea of central bank easing is running out in the US. Market expectations of policy rates have been pushed out substantially in the US this year, and there is little additional room for corporate leverage to increase as companies' earnings are now in decline. Without direct purchases of risky assets, there is not much more the Fed can do aside from negative rates or more QE, and high yield would likely be well into a default wave by the time the Fed resorts to such measures. Investors in high yield now have to hope for a Goldilocks scenario where growth is not so strong that the Fed would have to hike rates aggressively, and not so weak that an economic downturn would trigger a default wave.

While the GFC had broad negative implications for households and for the stability of the global financial system, we believe the impacts of a high yield default wave will be more localized. First, domestic banks are much less levered today, and so we are unlikely to have the deflationary deleveraging cycle in the banking system that caused problems in both the GFC and the Great Depression. Second, bankruptcy is a much more efficient mechanism in shedding excess debt than is foreclosure. While a garden variety recession in the US would likely accompany a high yield default wave, other sectors of the US economy and the rest of the globe would be largely unaffected. The holders of high yield debt still tend to be, by and large, institutions and wealthier households, not the middle class households that were most directly impacted by falling home prices and rising unemployment during the GFC.

2 Underlying Causes of the Bubble in High Yield Debt

We believe that the current high yield bubble has had three root causes. The first and most salient cause is the impact of central bank policy. The second is the growing presence of retail investors in the corporate debt markets. The third is the more equity-friendly, short-term focus of domestic corporations on increasing leverage to the benefit of equityholders and the detriment of bondholders.

Underlying Cause #1: Monetary Policy

On September 17th, the Federal Reserve again delayed raising interest rates off the zero lower bound for the first time in nearly seven years. Since then measures of market implied volatility have declined back to levels near or below recent lows in late July. Unprecedented central bank policies since the GFC saved us from a global depression. By lowering borrowing costs and through direct asset purchases, these extraordinary measures allowed borrowers to continue paying down their debts without defaulting.

However, central bank tools are blunt instruments to target inflation and unemployment, and these extraordinary measures have distorted financial markets in the process. We believe these distortions are being felt most acutely in high yield corporate debt markets, where issuance has increased dramatically and the quality of debt issued has deteriorated. As we saw in the US housing bubble and burst in the 2000s, imbalances may persist for a long time before reversing, and the reversal tends to be much faster and more violent than the buildup.

The Fed had good intentions with its zero interest rate and QE policies. Purchases of long-dated Treasuries and agency MBS were in part intended to support the housing market by reducing the costs of mortgage debt and expanding households' access to credit. Unfortunately, these tools are blunt and are working against headwinds of post-crisis regulations aimed at reining in the mortgage lending excesses that got us into this mess in the first place. Household credit availability has remained tight, and this excess liquidity has instead leaked into other corners of financial markets.

The Fed cannot be faulted for not acting. Their asset purchases have been enormous. As of November 4th, the Federal Reserve holds \$2.35T of Treasuries and \$1.74T of Agency MBS on their balance sheet, with total SOMA holdings of \$4.22T.¹ These policies primarily help the owners of financial assets, and the hope now is that increasing asset prices will trickle down to the middle class through hiring and wage inflation.

The reality has been much different than what the Fed intended. Household credit availability metrics remain stubbornly low. For example, the MBA's Mortgage Credit Availability index varied between a level of 350 and 900 from 2004 to 2006, and since 2009 has languished between 95 and 128.4, the latter being the most recent reading as of October.²

¹Source: New York Fed. http://www.newyorkfed.org/markets/soma/sysopen_accholdings.html

²<https://www.mba.org/news-research-and-resources/forecasts-data-and-reports/single-family-research/mortgage-credit-availability-index>

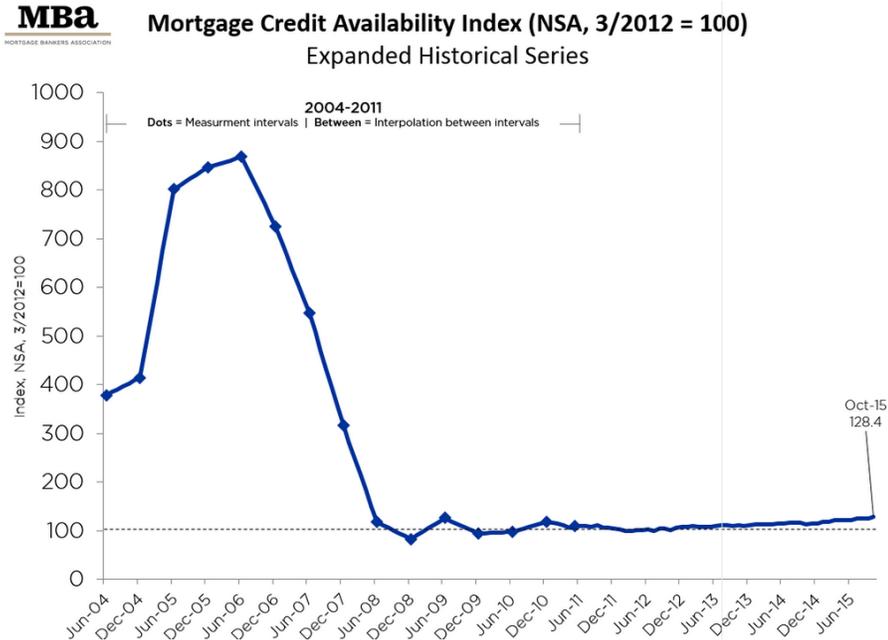


Figure 2: Mortgage Credit Availability Index 2004 - 2015.
Source: Mortgage Bankers Association.

As shown in Figure 3, total household debt in the form of mortgages and consumer debt is still below its 2007 peak. Instead of increasing credit availability to the households who need it most, banks are extending more credit only to the most creditworthy households who do not even use it. A recent study of 8.5 million US households finds that for every percentage point reduction in banks' cost of funds, banks increase their credit limits to higher FICO (> 740) borrowers by 17 times as much as they increase the credit limits to lower FICO (≤ 660) borrowers. At the same time, higher FICO borrowers do not increase borrowing as their credit limits increase, while the lower FICO borrowers increase borrowing by 58 cents for every dollar that their credit limits increase.³ The transmission mechanism by which the Fed claims to increase credit availability to households through lower interest rates is broken, as credit is being extended only to those households that do not need it.

³Agarwal et al, "Do Banks Pass Through Credit Expansions? The Marginal Profitability of Consumer Lending During the Great Recession", August 2015. <http://www.haas.berkeley.edu/groups/finance/seminars/Sept%203%20Paper.pdf>

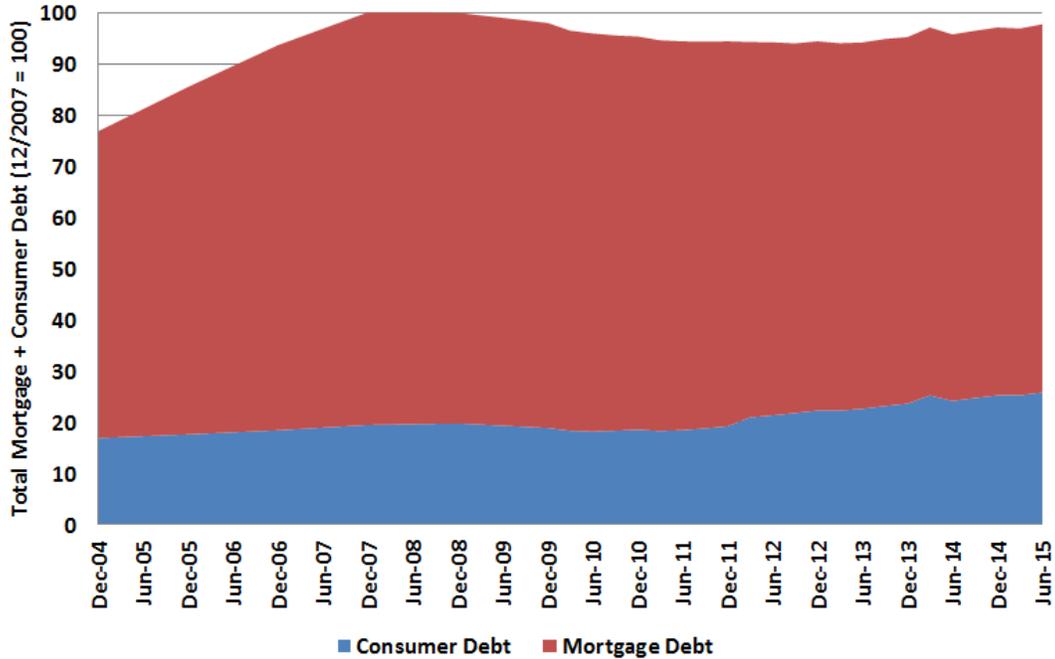


Figure 3: Total US Mortgage and Consumer Debt 2004 - 2015.
 Source: Federal Reserve.

Corporations, on the other hand, have reaped a bonanza from lower interest rates. As Figure 4 shows, US corporate debt outstanding has increased steadily since 2007, and as of June 2015 reached \$8.1T, a level 54% higher than where it was in 2007. High yield corporate debt outstanding has nearly doubled over the same period, up 81% from 2007 to 2014 and now stands at over \$1.2T. Unlike in the household sector, where credit is only available to the best borrowers, in the corporate world it is the lowest credit borrowers who have taken the most advantage of looser credit conditions. At Ellington, we saw the perverse effects of lower interest rates on credit availability most directly in the single family housing market. While weaker credit households could not get a mortgage at 7% and instead chose to rent, the landlords who rented to them could obtain financing using the same homes as collateral through the capital markets at a cost of capital of less than 4.5% and charge gross rental rates often in excess of 10%.⁴

⁴<http://www.prnewswire.com/news-releases/american-homes-4-rent-announces-pricing-of-4777-million-securitization-transaction.html>

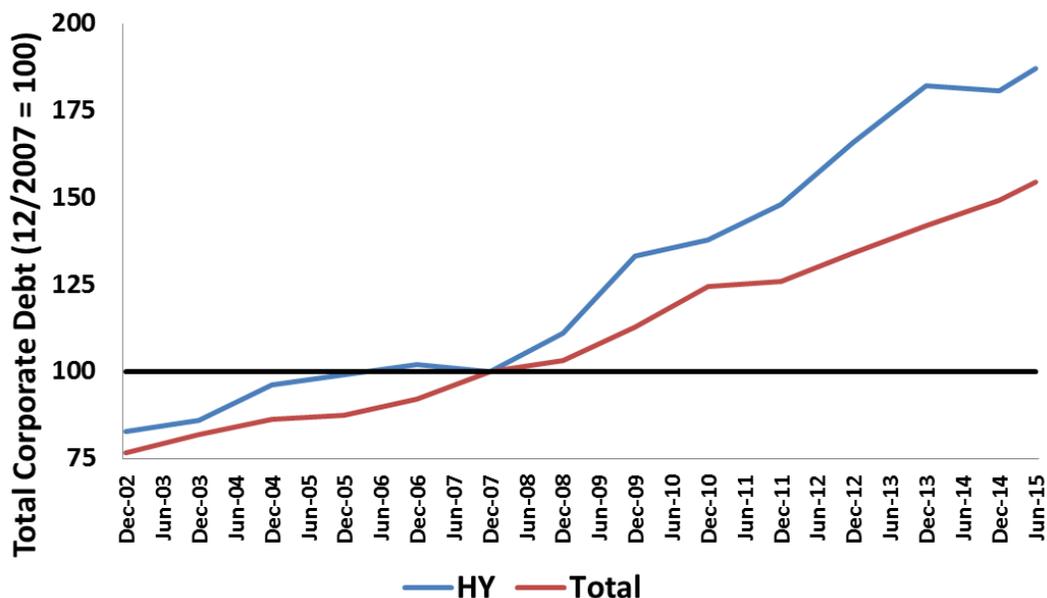


Figure 4: US HY Corporate Debt Is Up 81% Since 2007.
 Source: SIFMA and BofA Merrill Lynch Global Research. 2015 HY debt outstanding estimated using overall market debt outstanding.

Underlying Cause #2: Crowding Effects in High Yield

The high yield market is crowded today by retail investors, institutions, CLO managers, and foreign buyers reaching for yield in safe-haven markets. Their non-economic behaviors distort markets, creating imbalances and trading opportunities.

Retail investors have in recent years become major players in corporate credit markets, in part through open-ended mutual funds and ETFs. Many of these vehicles provide daily investor liquidity, while the assets themselves typically trade less than once a day. Institutions have also increased their use of these daily liquidity vehicles as a more liquid and less costly way to alter their short-term exposure to corporate credit. While seemingly providing markets with greater liquidity in corporate credit, these liquidity mismatches should be regarded with extreme caution. As of October 30th, the top three corporate bond ETFs together had \$52 billion in assets under management, while the total assets invested in high yield bond open-ended funds and ETFs have reached \$286 billion as of September 2015.⁵ This is \$110 billion more than the AUM of high yield bond funds just four years earlier.

Retail investors and institutions are known to exhibit strong return-chasing behaviors, and we are seeing this phenomenon today in monthly high yield bond fund flows. Figure 5 shows monthly returns of high yield corporate bonds versus high yield bond fund flows, as tracked by Morningstar. The high goodness-of-fit of this relationship shows that 68% of the variation in monthly fund flows in high yield bond funds can be explained by contemporaneous returns on the assets. This feedback loop between asset returns and asset flows has magnified the growth of the high yield bubble.

⁵<http://corporate.morningstar.com/us/documents/pr/AssetFlowsOct2015.pdf>

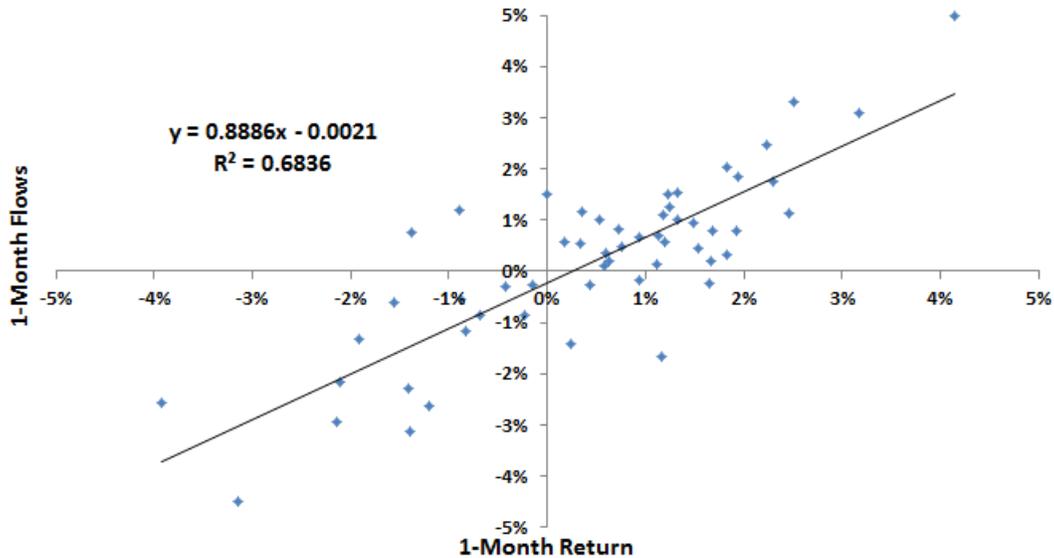


Figure 5: HY Corporate Bond Returns Vs Fund Flows, Feb 2011 to Sep 2015.
Source: Morningstar, Bloomberg.

One of the lessons learned from the GFC is that banks couldn't rely on short term (overnight) funding for their balance sheets, because in times of stress, their assets are much less liquid than their liabilities and they are exposed to a run. This is what happened to Bear Stearns and Lehman Brothers. Regulators fixed this problem for the banks. However, they've taken away short term assets (via ZIRP, QE and repo regulation) from retail investors and pushed them into "higher yielding" alternatives, in particular daily liquidity high yield mutual funds. As a result, many investors who before the GFC used money market funds now use these daily liquidity bond funds as a cash-substitute. We now have the same asset-liability mismatches as we did leading to the financial crisis, only with mutual funds in the middle this time rather than banks.

CLO managers have become the primary source of demand for riskier leveraged loans, and their investment decisions are not always economically driven. Provisions of the Volcker Rule prevent CLOs from holding corporate bonds, and the recent implementation of this rule has pushed CLO managers to replace their bond purchases with lower-rated loans to hit the same yield bogey. CLO managers are also typically limited to a maximum threshold of CCC and lower rated loans. These collateral and ratings requirements incentivize CLO managers to buy the highest spread loans in a given rating bucket. Ultimately, the rating agencies determine the collateral quality of loans backing CLOs: the worst single-B loan will get bought by some CLO if it offers extra spread for the "arb". The buying behavior of retail investors and CLO managers appears to be indiscriminate - buyers target a yield or spread bogey without paying attention to the underlying fundamentals.

A number of metrics suggest that the underlying quality of CLO collateral has deteriorated in the past two years. According to research from Barclays, the CCC and below share of the overall leveraged loan market declined from more than 7% two years ago to 5% today, while the CCC and below share in CLOs nearly doubled to 4.3% from 2.3% over the same period.⁶ According to research from Citi, cov-lite loans, which now comprise more than three quarters of new loan issuance today (see Figure 6 below), have an average debt cushion of just 20%, down from 28% two years ago.⁷

⁶Barclays US Credit Alpha, "The Season Has Turned", published October 2nd, 2015.

⁷Citi Global Structured Credit Strategy, "When the Tide is No Longer Rising", published September 30th, 2015.

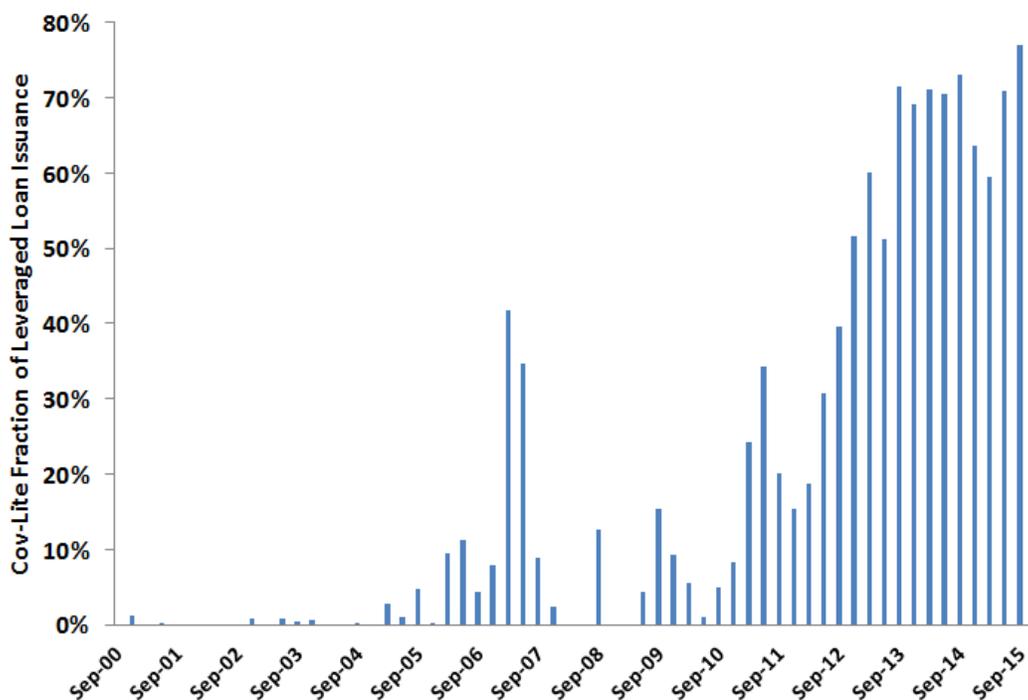


Figure 6: Quarterly Cov-Lite Fraction of Total Leveraged Loan Issuance.
 Source: S&P Capital IQ LCD. Data as of Q3 2015.

Underlying Cause #3: Short-Term Corporate Behavior

The management of public US corporations is ultimately accountable to the company’s shareholders. While this system should in principle produce efficient allocation of capital, in practice the shareholders themselves are mostly money managers who are in turn beholden to investors whose allocation decisions are heavily focused on short-term performance. With the decline in long-term borrowing costs and a dearth of high return-on-capital investment opportunities, companies have been investing much of their debt proceeds not in their underlying businesses, but rather in financial and corporate structure arbitrages, including stock buybacks and M&A.

So far, the Fed, retail investors, shareholders, and corporate boards have all benefited from these behaviors. During the height of the US housing bubble in 2006 and 2007, one would have been hard-pressed to find a constituency that was not benefiting from rising home prices. From US homeowners to homebuilders to investors to rating agencies, the benefits of rising home prices were self-justifying. This phenomenon is what keeps asset bubbles growing, as agents at every step in the credit machine have a short-term incentive to keep issuing debt. Market participants who have been conditioned to expect record issuance and positive returns year after year may be unable to see that the bubble exists until after it has already burst. We are seeing the same sequence of events play out today.

According to FactSet, US companies’ total share buybacks in Q2 2015 were greater than their entire free cash flow (FCF). This has not happened since October 2009, when corporate profits were anemic and share buybacks were less than a third of today’s levels.⁸ Buybacks’ recent eclipsing of free cash flow was not driven by a rise in share buybacks, which have remained relatively stable between \$130-170B for the past seven quarters, but rather because free cash flows are declining. The stimulative effects of zero interest rate policy appear to be waning.

Research by S&P Dow Jones finds that declines in stock buybacks have shortly preceded the last three

⁸http://www.factset.com/websitefiles/PDFs/buyback/buyback_9.21.15

corporate credit default waves in the US, with buybacks last peaking in 1987, 1999 and 2007.⁹ Moreover, declines in share buybacks typically coincide with underperformance of companies that buy back shares. YTD as of October 30th, the S&P 500 Buyback Index, which tracks the performance of the 100 companies in the S&P 500 with the highest buyback ratios, has returned -0.4% including dividends, 3.1% worse than the S&P 500 overall. The only years with worse relative performance since the S&P 500 Buyback Index was created in 1994 were 1998, 1999, and 2007.

M&A activity has also grown dramatically in recent years, with US M&A YTD at \$1.97T as of November 4th, 43% higher than the previous YTD record in 2007, according to Dealogic.¹⁰ Companies take out loans to finance buyouts, increasing leverage as a way to improve returns on equity. In the past year, such M&A activity has been more concentrated in larger deals and in higher-rated companies. Banks have been willing to do so much acquisition financing in part because these loans pay higher fees in compensation for the added risk that banks must hold the loans on balance sheet for the few months that it takes to complete the acquisition. This situation can turn quite ugly for banks when such deals fall through.

3 Parallels to Past Credit Cycles

Today's corporate credit market resembles peaks in a number of past cycles, including the corporate credit markets in 1997 and 2007, as well as the housing market in 2007.

The first parallel to the 2007 housing bubble is that historical returns on an asset class can be a poor indicator of future returns. Much of the increase in leverage in the housing bubble was predicated on the observation that home prices had never fallen significantly (in nominal terms) since the Great Depression. This past-is-prologue line of thinking justified not only the massive growth of subprime lending, but AAA ratings on non-agency bonds that eventually fell to 50 cents on the dollar at the depths of the crisis. A similar dynamic exists today in corporate credit, where investors look at the past few credit cycles and note how benign defaults have been. Today is most different from recent credit cycles in that these recent cycles occurred during a period of steadily declining interest rates, an environment that provided cheaper and cheaper debt financing and helping keep corporate defaults low. Not only did falling interest rates keep defaults low, they also inflated returns on high yield corporate bonds. Interest rates stuck at zero today mean that the current environment is like nothing we have seen before, and barring negative interest rates, the Fed cannot cut rates further like they have in past default waves.

As shown in Figure 7, the BofA Merrill Lynch US High Yield Master II Total Return Index, which is tracked by the St. Louis Fed, has had an average annual excess return over LIBOR of 4.97% and a Sharpe ratio of 0.28 from 1998 to 2015 YTD. However, we estimate that more than half of this excess return was due to declining interest rates. Assuming a duration of 4 on this index and assuming this duration exposure were hedged using 5-year interest rate swaps, the average annual excess return of the High Yield Master II Index over LIBOR falls to 2.07% per year and the Sharpe ratio falls to 0.11.

We believe that these duration-adjusted numbers give a more realistic return profile of high yield bonds going forward, and that investors have been lulled by countercyclical interest rate policy into a false sense of security about the future return prospects of the asset class. Not only are overall returns much lower on a duration-adjusted basis, but Fed policy has in the past smoothed out returns on HY bonds, with rate cuts during recessions. For example, an oft-cited statistic about the resilience of the high yield bond market is that high yield bonds did not lose money during the 1998-2002 default wave. While that is apparent from Figure 7, it is also the case that on a duration-hedged basis an investor would have lost 22% from the end of 1999 to the end of 2002. With interest rates at zero, we believe this duration-adjusted performance gives a more realistic picture of the return prospects for high yield today.

⁹“Examining Share Repurchasing and S&P Buyback Indices for the U.S. Market”, S&P Dow Jones Indices Research, published January 2015.

¹⁰<http://www.dealogic.com/media/market-insights/ma-statshot/>

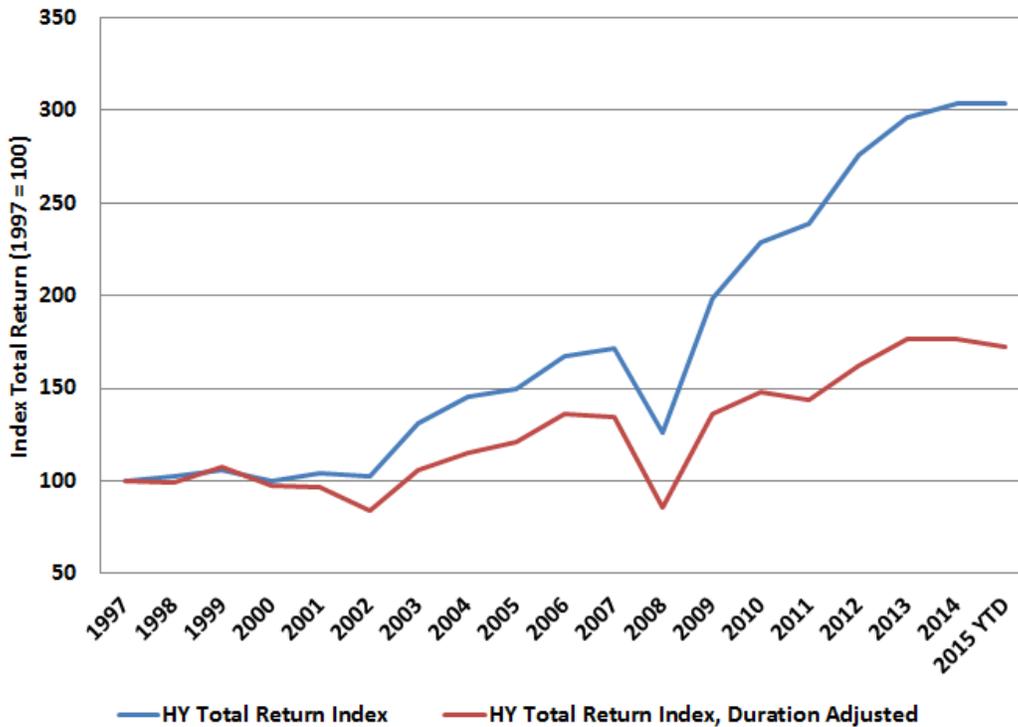


Figure 7: BofA Merrill Lynch US High Yield Master II Total Return Index Performance Since 1997, Before and After Hedging Duration Exposure.

Source: St. Louis Fed and Ellington analysis using data from Bloomberg. Data as of October 30th, 2015.

A second parallel to the 2007 housing bubble is that subprime originators shut down delinquent financing first (New Century in November 2006) and the ABSCDO market shut down well before the collapse in non-agency issuance in the summer of 2007. In 2006 lenders knew that subprime credit conditions were deteriorating, but lenders and investors brushed this off as a few bad apples rather than a systemic issue. An important lesson to learn from this is that the first signs of fundamental weakness typically come from the lowest credit quality lending segments, and this first sign of weakness can have self-reinforcing effects on both primary issuance as well as higher quality collateral. Today we are seeing lending dry up in the weakest segments of corporate credit, with CCC HY bond issuance declining even though higher rated high yield deals continue to get printed (see Figure 19), and with investment grade issuance at all-time highs.

A third parallel to the 2007 housing bubble is that it isn't always easy to identify or measure the extent of froth at the height of a bubble. Credit growth will find a way around whatever simple risk limits are put in place. LTVs in subprime didn't appear to be rising in 2005-2006, nor did debt-to-income ratios. These mortgage metrics were inputs to the rating agency models, and so they had to be doctored through appraisal fraud and liar loans. Only once the GFC was in full swing did the full nature and extent of the frothiness become apparent. In that cycle, you only needed to look at the growth of non-agency/subprime issuance to know that credit standards had deteriorated. As issuance volumes grow, loans that were not made in the past are being made now. Today, companies manage leverage ratios and rating agency definitions of cov-lite for CLOs, and high yield issuance grew unabated until only recently.

Strong parallels also exist between today's environment and the corporate credit cycle in 1997, which ended in annual speculative grade default rates in excess of 10% by the early 2000s. What the Telecom sector was to the corporate credit cycle in 1997, the Energy sector is to the corporate credit cycle today. As with Energy in 2014, in 1997 more than a fifth of all high yield debt issuance came from the Telecom sector. Overconfidence and excess lending in Telecoms did not at first affect the rest of the high yield market, but eventually other previously non-distressed sectors had trouble refinancing debt as lending conditions tightened and companies saw earnings growth weaken as a symptom of a prolonged period of lower quality

debt issuance. Macro conditions today are also similar to 1997, with the Fed on track to embark on a hiking cycle, a high mutual fund ownership share of the high yield market, and meager trailing returns in the high yield sector. High yield 3-year default rates exceeded 7% for three years in a row during the 2001-2003 default cycle, a prolonged period of underperformance. The major difference between then and now is that today the party has been going on for much longer, and the Fed’s punch bowl is empty. The hangover this time could be much worse.

4 Telltale Signs the Credit Cycle is Turning Now

We believe that we are now at the end of the “over-investment” phase of the corporate credit cycle in the US that has been playing out since the depths of the GFC. This view is supported by a number of telltale signs of a reversal in the credit cycle:

1. **Worsening Fundamentals** - Declining corporate profits, record levels of corporate leverage, and an elevated high yield share of total corporate debt issuance
2. **Defaults/Downgrades** - Credit rating downgrades at a pace not seen since 2009
3. **Falling Asset Prices** - Price deterioration in the lowest quality loans and the most junior CLO tranches
4. **Tightening Lending Standards** - Weak investor appetite for new distressed debt issues, declines in CLO and CCC HY bond issuance, and tightening in domestic bank lending standards

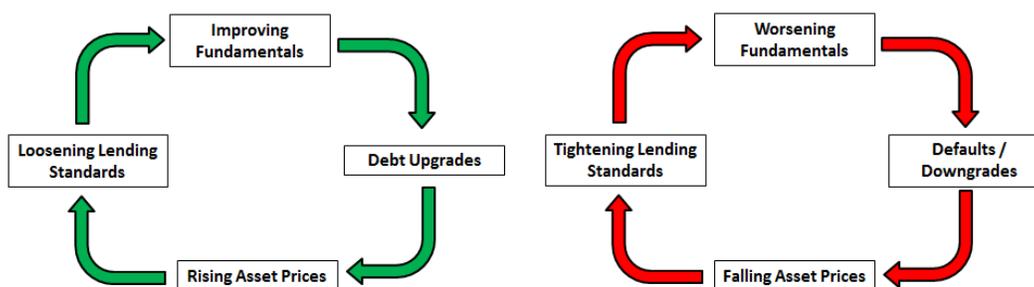


Figure 8: The Corporate Credit Cycle.

The turn of the credit cycle from expansion to contraction tends to play out the same way each time. Initial enthusiasm about a new technology, innovation, or policy change creates an investment boom and easier lending standards. This virtuous cycle repeats itself, with stronger fundamentals, lower volatility, and higher leverage. Financial markets facilitate increased leverage, magnifying booms and busts. Return-chasing investors pile in, fueling more debt issuance. Borrowers who would have otherwise defaulted are able to refinance as leverage increases faster than cash flows deteriorate. Over-investment inevitably leads to loans that go sour, and as the tide of leverage goes out, the full extent of irresponsible lending becomes apparent. The previously virtuous cycle between risk spreads and fundamentals goes into reverse, with lower prices, defaults, and downgrades forcing leveraged investors to sell, leading to even lower prices.

As we have shown, the demand for high yield assets today is fickle. Once these fickle investors exit the market, high yield bonds and leveraged loan prices should settle at a supply/demand equilibrium well below today’s levels.

Telltale Sign #1: Worsening Fundamentals

As we noted earlier, corporations are now running out of steam in terms of their ability to generate earnings. As of Q2 2015, the year-over-year change in annual corporate earnings dropped to -\$8.21 per share for the S&P 500 and to -\$4.79 per share for the Russell 2000. The previous three times this metric fell that far into

negative territory on the S&P 500 were Q1 1990, Q1 2001, and Q4 2007, coinciding with the start of each of the last three high yield default cycles. According to a recent article in *The Economist*¹¹, in the most recent quarter less than half of S&P 500 companies recorded increasing profits year-over-year.

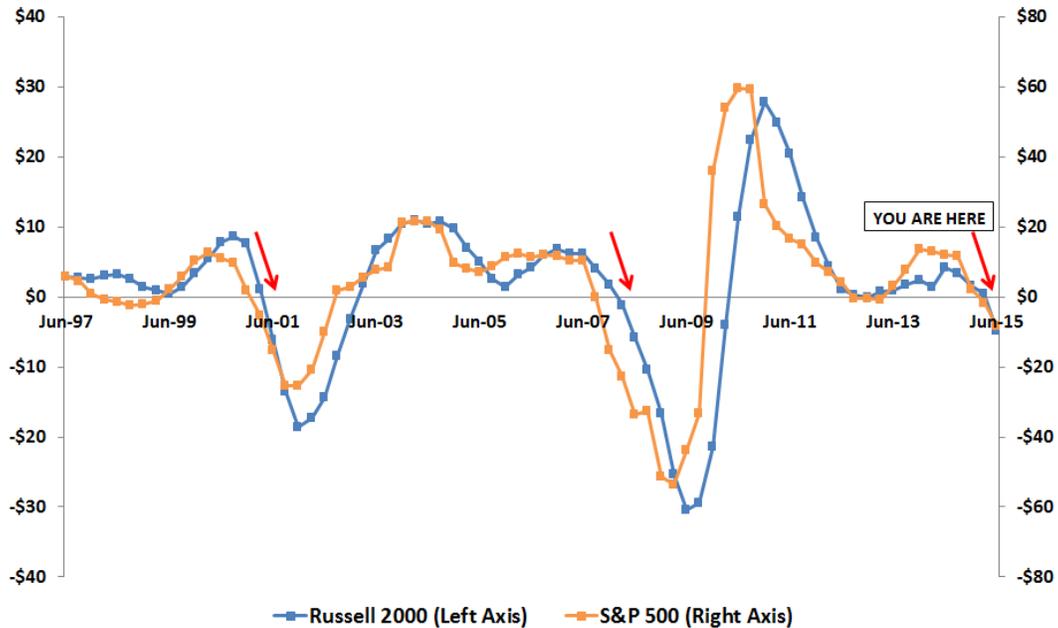


Figure 9: Year-over-Year Change in 12-Month Profits Per Share, S&P 500 Vs Russell 2000.
Source: S&P.

The average quality of corporate debt issuance has also deteriorated in the past few years. Recent research¹² documents a strong link between issuer quality in corporate debt markets and excess returns over the following 1-3 years. This empirical finding holds when credit quality is measured both in terms of credit spreads (market implied default probability) as well as credit ratings. Our research suggests the lag may be slightly longer, with high HY issuance fractions in 1996-1998 and 2003-2004 being followed by default waves in 2000-2003 and 2009-2011. Again, we believe that the root cause of lower issuer quality in recent years is lower interest rates. First, as central banks have purchased massive amounts government bonds and MBS, they push investors into risky assets that they would not otherwise buy. Second, a declining interest rate environment is helpful to corporate balance sheets, thus creating the illusion that lower default rates are evidence of improving corporate fundamentals.

¹¹“The age of the torporation”, October 24th, 2015 edition. <http://www.economist.com/news/business/21676803-big-listed-firms-earnings-have-hit-wall-deflation-and-stagnation-age-torporation>

¹²Greenwood, R. and S. G. Hanson, “Issuer Quality and Corporate Bond Returns”, February 2013. http://www.people.hbs.edu/shanson/Issuer_Quality_2013_RFS_Final.pdf

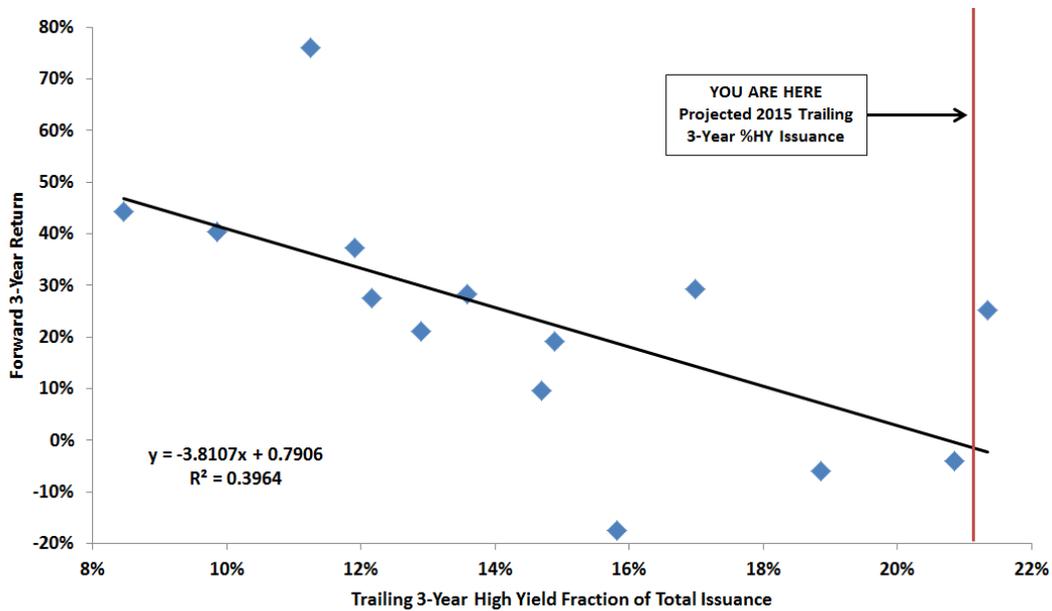


Figure 10: HY Fraction of Corporate Debt Issuance Versus Forward HY Returns, 1996-2014.
 Source: HY issuance data is from SIFMA. HY sector returns are measured using the BofA Merrill Lynch US High Yield B Total Return Index, available from the St. Louis Fed. (<https://research.stlouisfed.org/fred2/series/BAMLHYH0A2BTRIV>)

Since 2010, the HY fraction of total corporate debt issuance has been at or above levels that preceded the last two waves of corporate credit defaults (see Figure 11 below). What is remarkable about today's high HY fraction of debt issuance is not only its level but also its persistence. Unlike the past corporate credit booms of 1997-1999 and 2003-2005, HY companies have faced a very friendly environment of zero short-term borrowing rates and declining long-term interest rates. This has made the most recent credit cycle more extreme and of longer duration than past cycles. Moreover, because the relationship we document between the HY fraction of issuance and future returns has been during a declining rate environment, the predicted excess return over Treasuries is even lower on a duration-adjusted basis.

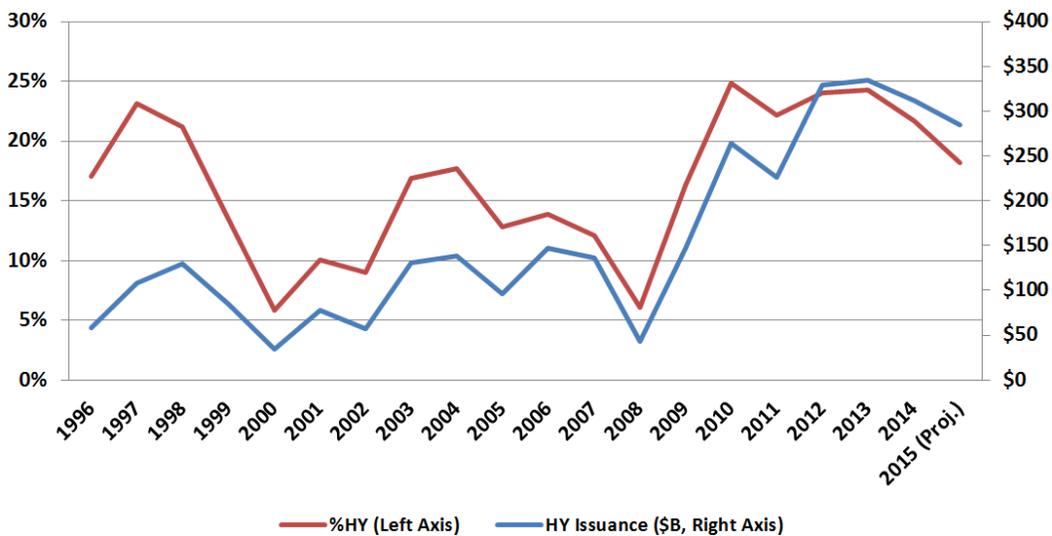


Figure 11: US Corporate Bond Issuance, 1996-2015.
 Source: SIFMA.

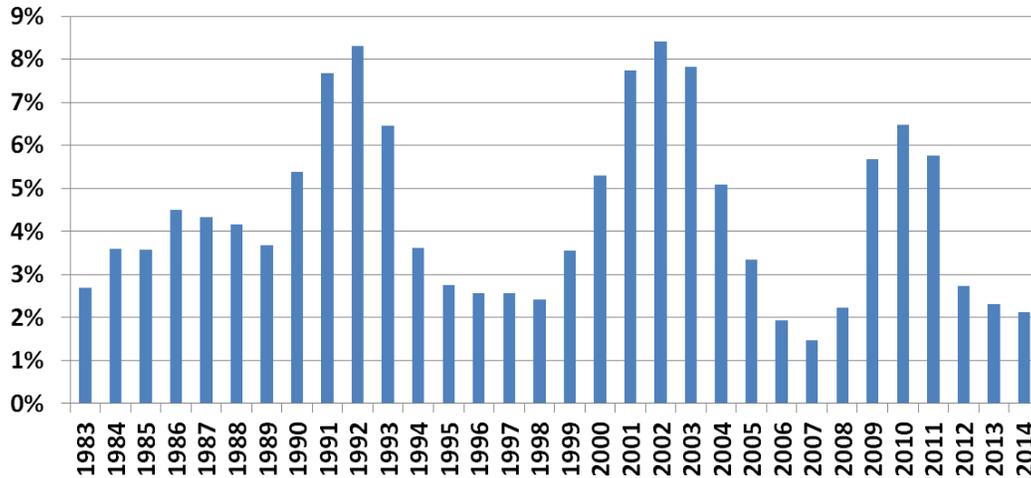


Figure 12: Rolling 3-Year Average Default Rate of HY Corporate Credit, 1983-2014.
 Source: Standard & Poor’s Ratings Services.
http://www.nact.org/resources/2014_SP_Global_Corporate_Default_Study.pdf

Telltale Sign #2: Defaults/Downgrades

Many credit investors have mandates to invest only in bonds with minimum ratings provided by the rating agencies. S&P issued 108 downgrades for US non-financial companies in August and September and 297 downgrades YTD, the most in a two-month period since May-June 2009 and the most in a year since 2009.¹³

Downgrades create a perverse supply problem for high yield. Even if issuance were to shut down, downgrades from investment grade to high yield and from high yield to distressed create net new supply in the lower tier sectors. This is relevant because the investors who play in the high yield and investment grade debt markets are two largely disjointed groups. Since there is a lot more investment grade paper outstanding than high yield, downgrades could potentially present even more of a supply issue for the high yield market than high yield issuance.

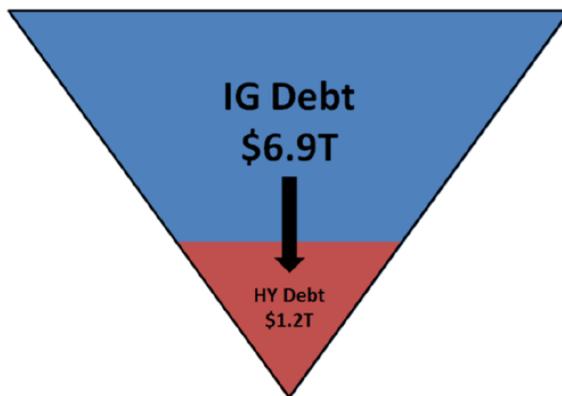


Figure 13: Downgrades Create a Supply Issue for HY.

Ratings downgrades can have immediate impacts on securitized debt as CLOs and other products have ratings provisions that determine how cash flows are allocated to different investors in a securitization. For example, ratings downgrades can shut off payments to the bottom of the capital structure of many CLOs. The size limit on loans rated CCC and below is typically 7.5%. The average CLO exposure to CCC and below is currently up to 4.3% from 2.3% two years ago, while the fraction of CLO holdings just one notch

¹³“Cracks Emerge in Bond Market”, The Wall Street Journal, published October 12th, 2015. <http://www.wsj.com/articles/debt-markets-shaken-amid-more-corporate-downgrades-defaults-1444671712>

above CCC has remained around 20-25% since 2009.¹⁴ If only a fraction of these near-CCC holdings is downgraded, the 7.5% limit will be exceeded, which will trigger a haircut to be applied to the collateral for the purpose of overcollateralization (OC) tests. Once a CLO fails the OC tests, cash flows are diverted away from equityholders.

Because CLOs now absorb 70% of leveraged loan demand, the pricing of par loans will experience a quantum jump down to a new equilibrium level if 70% of demand is taken away. Not only will a halt in CLO issuance lead to a drop in leveraged loan demand, it will also create short-term supply pressures from liquidations of CLO warehouses for deals that did not get done. A number of CLO warehouses are significantly underwater today. We expect to see selling pressure from these warehouses as we approach year-end, especially given the pricing pressure on leveraged loans that has persisted since August. We saw the same dynamics when the ABCDO and CLO markets shut down abruptly during the GFC.

Telltale Sign #3: Falling Asset Prices

Late last year, the first cracks in the high yield edifice began to show with the decline in oil prices. This led to a decline in high yield bond prices, but losses were contained mostly to the Energy sector. As concerns about China weakness intensified this past summer, Metals & Mining also began to feel the heat. However, as Figure 14 shows, while the returns in the Oil & Gas and Basic Materials sectors (the latter of which includes Metals & Mining) have been disastrous over the past year, the rest of the HY bond market is actually up YTD. Moreover, the relative decline in Oil & Gas and Basic Materials has been a slow bleed on a beta-adjusted basis versus the whole sector. While we have seen market jitters, contagion in HY has yet to really extend beyond industries directly impacted by lower oil prices.

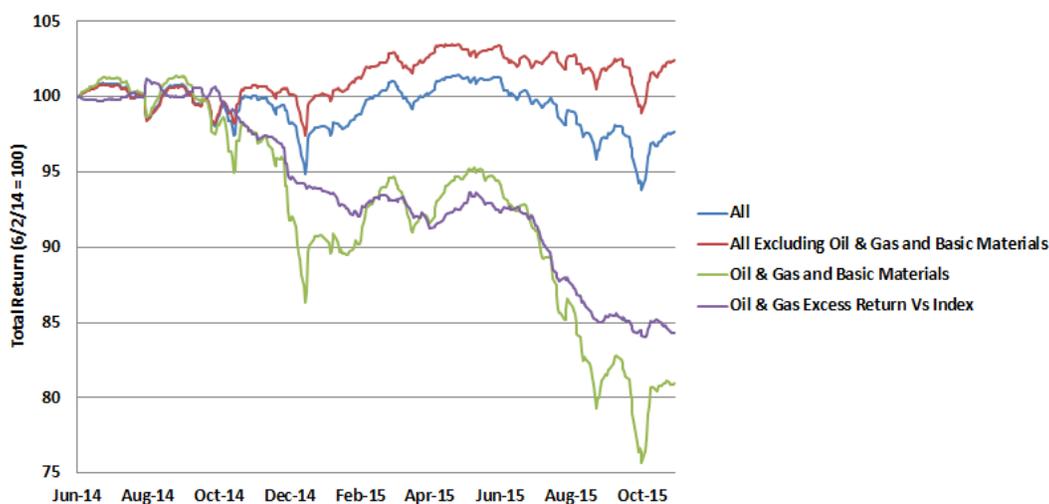


Figure 14: Cumulative Return of iBoxx HY Corporate Bond Indices by Sector, Jun-14 to Oct-15.
Source: Ellington analysis using data from Markit. Data as of October 30th, 2015.

One can tell the same story with distressed versus non-distressed high yield sectors. Figure 15 shows the cumulative performance of the S&P US High Yield Corporate Bond Index versus the S&P US Distressed High Yield Corporate Bond Index. Again, the effects of initial fundamental weakness among the most distressed high yield borrowers have not yet percolated up to stronger credits. This suggests to us that it is not too late to get out now.

¹⁴Citi Global Structured Credit Strategy, “When the Tide is No Longer Rising”, published September 30th, 2015.

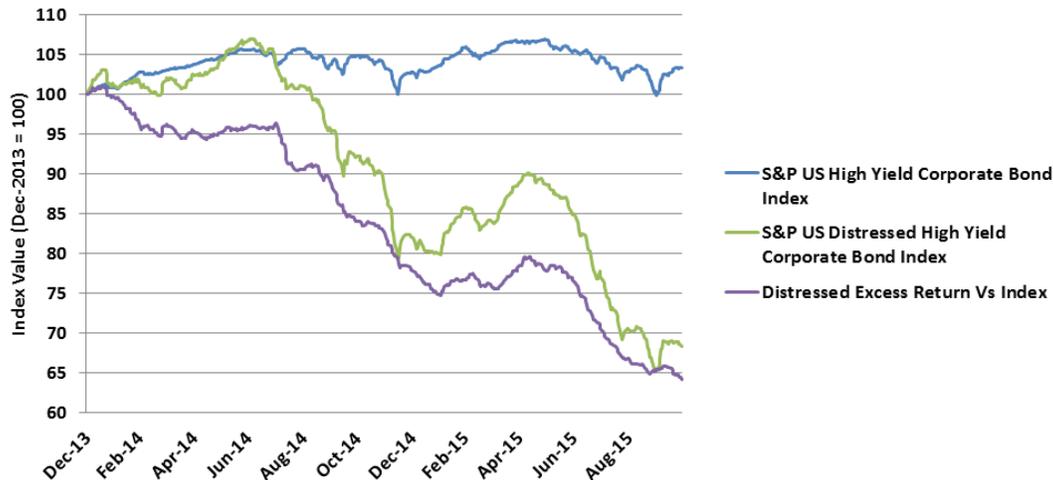


Figure 15: High Yield Corporate Bond Index Versus Distressed Corporate Bond Index.
 Source: Ellington analysis using data from S&P. Data as of October 30th, 2015.

It is not just Energy and Basic Materials names that are contributing to poor distressed returns today. As Table 1 shows, in 2015 most distressed industry groups are seeing underperformance versus high yield.

Industry	YTD Return	YTD Excess Return
Basic Industry	-70.1%	-71.6%
Capital Goods	-34.4%	-35.6%
Communications	-18.8%	-20.3%
Consumer Cyclical	-23.2%	-24.5%
Electric	26.6%	24.8%
Energy	-74.8%	-76.6%
Industrial Other	2.2%	2.2%
Total	-43.7%	-45.3%

Table 1: 2015 YTD High Yield Distressed Returns by Industry.
 Source: Barclays Research. Data as of September 30th, 2015.

Individual sector weakness may at first seem like an isolated issue. However, the contagion process has already been set in motion as the riskiest segments of high yield now trade at multi-year wides. Investors in these assets include distressed investors, leveraged buyers of junior credit index and bespoke tranches, CLO mezz and equity investors, and buyers of new issue Energy sector debt this past spring. Not only are the most leveraged sectors usually the first to crack, but the most leveraged investors tend to have greatest exposure to these sectors. As these investors de-lever, price pressures induce the next round of deleveraging in a negative feedback loop.

As shown in Figure 16, spreads on more senior new-issue CLO tranches (AAA through A) are below their recent trailing averages, while riskier new-issue tranches (BB through B) have widened substantially since July. The same divergence can be observed in the high yield bond market in Figure 17, where lower rated CCC collateral has widened versus B-rated collateral to levels not seen since the GFC.

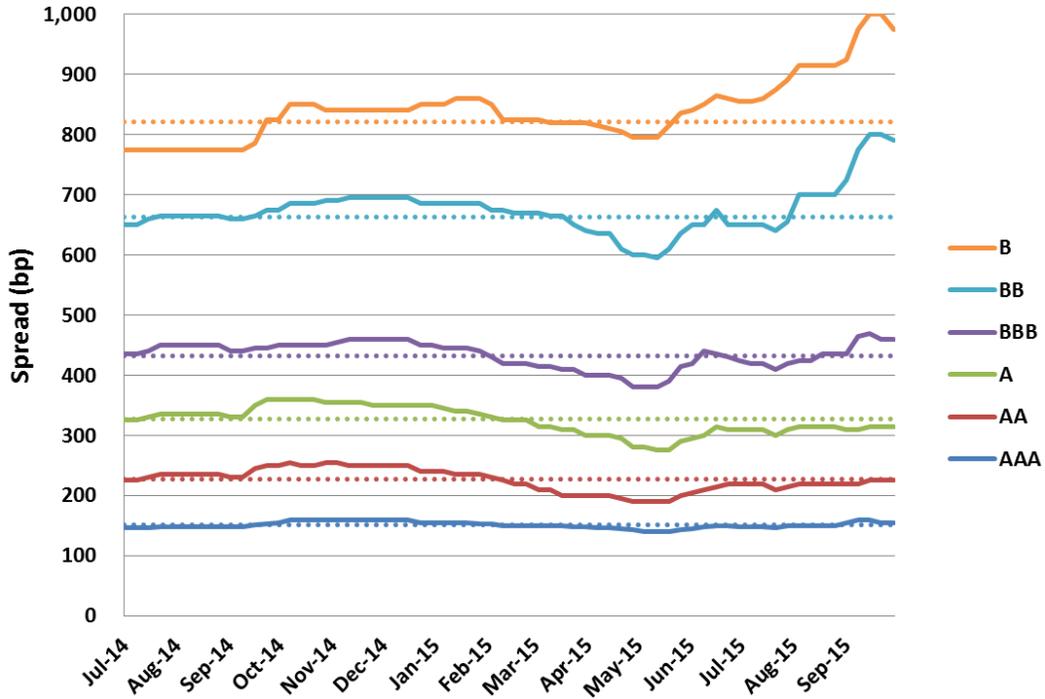


Figure 16: CLO 3.0 Spreads by Tranche.
 Source: Wells Fargo. Data as of October 23rd, 2015.

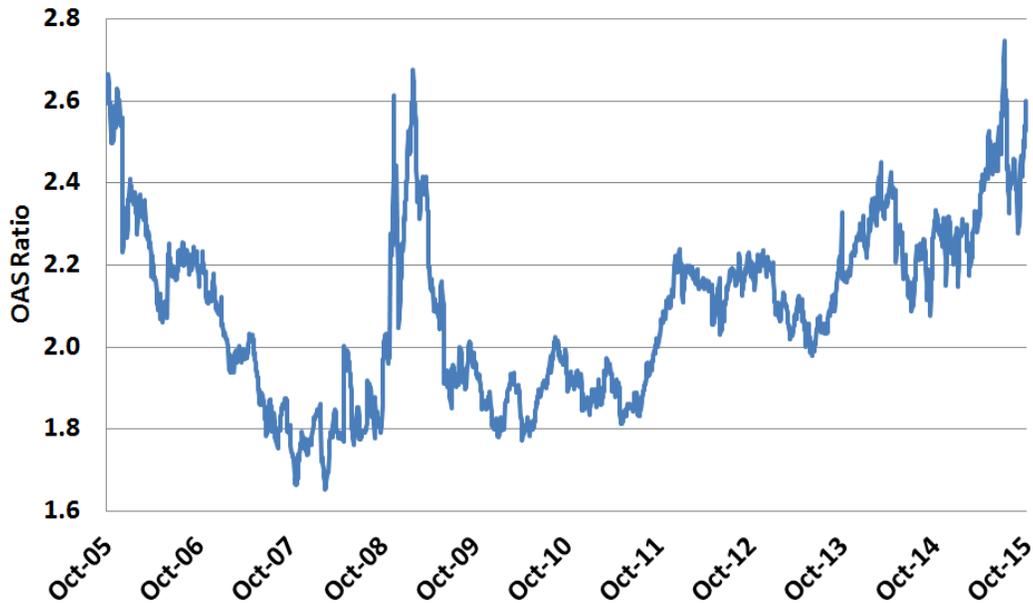


Figure 17: OAS Ratio of HY CCC Bonds Versus HY BB-B Bonds, 2005-2015.
 Source: Ellington analysis using data from BofA Merrill Lynch Global Research. Data as of October 30th, 2015.

Telltale Sign #4: Tightening Lending Standards

The marginal buyers in credit markets are the ones who set underwriting standards. Their losses mean that credit conditions are already tightening, and this resetting of underwriting standards is consistent with the

high number of deals pulled in October. More generally, cov-lite deals are much harder to get done now. A number of new deals are being done, but with lower fees and wider spreads on the junior mezz tranches.

As loan issuance has declined, so have the prospects for M&A among the riskiest borrowers. In recent months, banks that extended loans to high yield companies to finance buyouts are now unable to sell those loans to investors, who have become skittish about the worst quality high yield debt. We are seeing the immediate effects of this lack of a bid as banks who hold these loans on balance sheet must sell them by year-end in order to avoid significant capital charges, resulting in forced sales at a loss.¹⁵ The risk-averse behaviors of banks since the GFC suggest to us that banks will be much less inclined to underwrite risky deals going forward after suffering such losses.

Recent trends in bank lending standards for corporate loans also demonstrate that tightening is underway, and this has historically been a strong predictor of high yield corporate default rates. As shown in Figure 18 below, there has been an 89% correlation over the past 25 years between changes in bank lending standards and speculative grade corporate defaults a year forward. This predictive relationship is strongly statistically significant, even after controlling for lagged default rates. This 89% correlation is much higher than the contemporaneous correlation of 62% between the two measures, suggesting that tightening lending standards drive defaults higher. In the third quarter of 2015, a net 7.4% of banks tightened lending standards for commercial and industrial loans, the tightest reading since 2009. While today's tightening in lending standards looks somewhat similar to that in 2011, that blip was more of a head-fake from the Euro crisis, and was therefore a short-term period of uncertainty originating from outside the corporate credit markets, compared to today's tightening where the major source of lender uncertainty is coming from corporate credit itself.

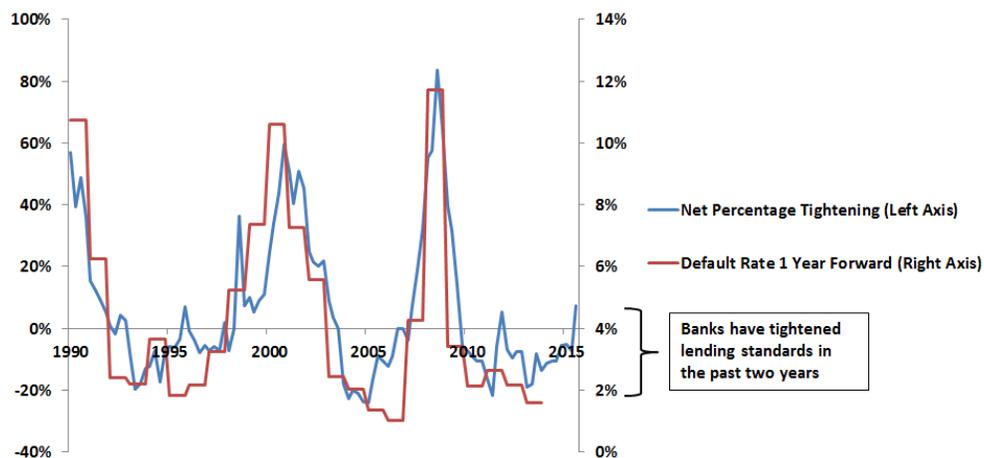


Figure 18: Net Percentage of Domestic Banks Tightening Standards for Commercial and Industrial Loans Vs One Year Forward Speculative Grade Defaults, 1990-2015.

Source: Federal Reserve, Standard & Poor's Ratings Services. Data as of October 30th, 2015.

The predictive power of changes in lending standards suggests that tightening lending standards directly impact future default rates, as companies have difficulty rolling over debt. This demonstrates the mechanism by which contagion spreads from a few isolated sectors to all of high yield. As a few sectors underperform, banks experience write-downs and losses, which leads them to tighten overall lending standards. This leads to broader weakness, perpetuating a feedback loop that triggers a default cycle. An imminent Fed hiking cycle today is yet another reason to expect bank lending standards to continue to tighten.

Deteriorating corporate fundamentals would be less of a concern in the short run if investors chose to ignore the fundamentals, but our distressed loan traders have been seeing the opposite. Investor appetite for risky loans has fallen off a cliff. We give four examples from the distressed sector, followed by some sobering statistics from the CLO market.

¹⁵“Takeover Loans Have Few Takers on Wall Street”, The Wall Street Journal, published November 8th, 2015.

First, Millennium Labs' leveraged loan was trading at par in April. The loan fell to \$50 in June following allegations that the company was defrauding the government and would have to pay a fine of unknown magnitude.¹⁶ The loan facility is relatively large, at \$1.775B in size. A few weeks ago, a block of \$20 million (1% of total issuance) became available. Market chatter was around a price of \$35 (30% below the market level at the time), for a total of \$7 million in proceeds. Even at this steep discount, the block did not clear as the sourcing desk could not find enough buyers.

Second, recent new issues in October have priced very wide to talk or have been pulled altogether. Four deals were pulled in October alone, including SiteOne, Xerium Technologies, Apple Leisure Group, and ABB Optical Group. Other deals are coming out very wide relative to price talk. Fullbeauty Brands had two term loans price recently, with initial talk at \$99 and L+450 for an \$820 million first lien, and \$98 and L+850 for the second lien. These two loans ended up pricing at \$93 and L+475 and \$87 and L+900, respectively (the latter at a 13.2% yield!). In each of these cases, the banks syndicating these loan transactions were stung with losses on the loans. Even for deals that eventually clear, banks have been quick to respond to such losses by tightening terms for new issues.

Third, we see weak investor appetite in combination with financials that appear to be managed to slide in just under the radar of regulatory scrutiny. Builders First Source came to market with a deal in April 2015 that was exactly 6.0x Debt/EBITDA, using a pro-forma EBITDA methodology that contained numerous add-backs, which added around \$50 million to arrive at a final EBITDA number of \$376 million. Excluding these add-backs, leverage would have been at 6.9x, above the 6.0x maximum level that the Federal Reserve and the OCC deemed to be prudent underwriting standards.¹⁷

Fourth, on September 15th, Moody's downgraded Sprint's senior unsecured debt from B2 to Caa1. Fears of downgrades by the other rating agencies to CCC, which would impact portfolio managers' CCC concentration limits, drove pricing on Sprint's \$2.5 billion of bonds maturing in 2028 from \$88.40 the day before the downgrade to \$80.80 two days later. Being one of the largest names in the high yield universe with \$30 billion in total debt outstanding, this price shock was felt across debt markets. While prices eventually recovered, such large price swings on a single ratings downgrade show the extent to which investors have been willing to sell debt at the first signs of trouble.

Adding to this anecdotal evidence, there is an overall trend this year of declining issuance in lower-rated US HY corporate credit. As shown in Figure 19 below, total US CCC issuance this year stands at \$30B on an annualized basis as of the end of October, down 48% from its peak of \$58B in 2013. In contrast, overall US HY corporate debt issuance has fallen only 16% over the same period.

¹⁶“Lab Nears Settlement Over Pricely Medicare Drug Tests”, The Wall Street Journal, published June 14th, 2015.

¹⁷<https://www.fdic.gov/news/news/press/2013/FR-LL-Preamble-and-Guidance.pdf>

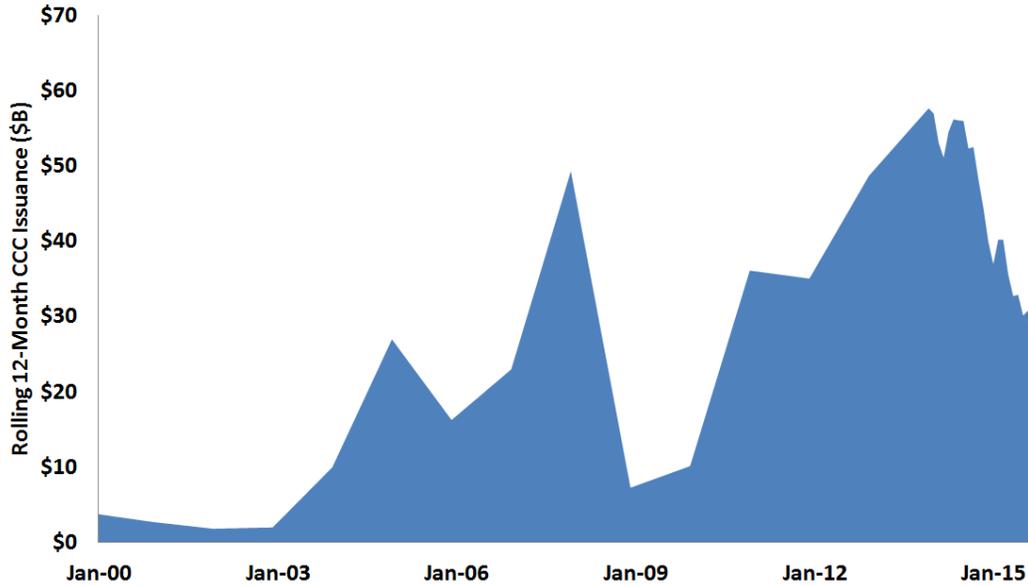


Figure 19: Rolling 12-Month CCC Rated US HY Corporate Debt Issuance, 2000-2015.
 Source: BofA Merrill Lynch Global Research. Data as of October 2015.

The CLO market has also exhibited recent signs of weakness on both the supply and demand side. In terms of supply, leveraged loan issuance is down more than a third year over year and since June, and the rate of US CLO issuance has fallen to half the 2014 rate (Figure 20). Pricing on new-issue CLO equity has weakened substantially given the weakness in high yield Energy, Metals & Mining, and Power/Utilities. Weakness in one sector is enough to make equity and BB tranches risky enough to lack a bid, which should impair CLO issuance.

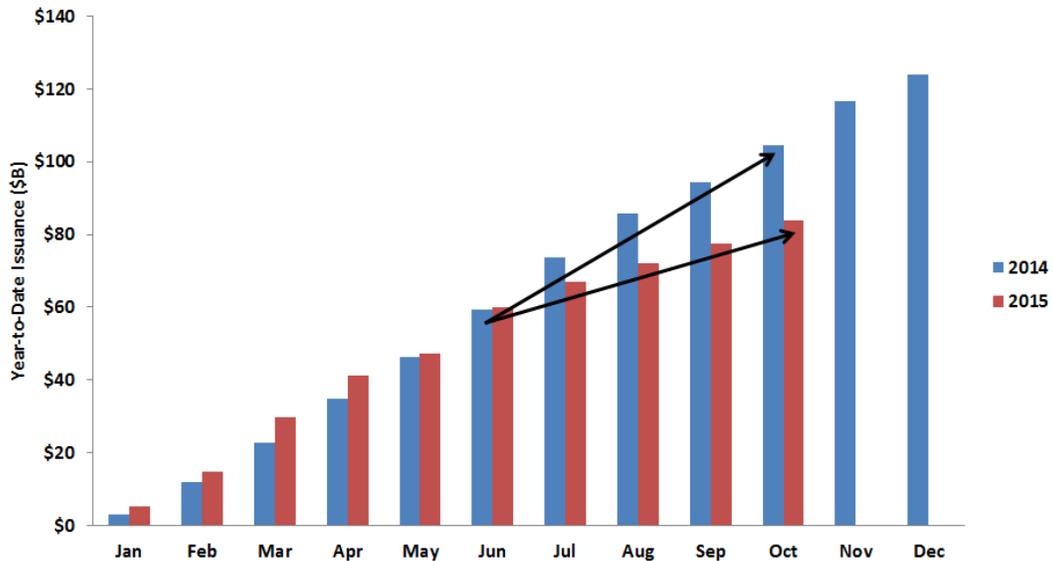


Figure 20: US CLO Issuance, 2014 Vs 2015.
 Source: JP Morgan. Data as of October 30th, 2015.

5 Profiting From the Turmoil

“Given the fundamental factors in place that should support the demand for housing, we believe the effect of the troubles in the subprime sector on the broader housing market will likely be limited, and we do not expect significant spillovers from the subprime market to the rest of the economy or to the financial system.”

— Ben Bernanke, May 2007

“For my own part, I did not see and did not appreciate what the risks were with securitization, the credit ratings agencies, the shadow banking system, the SIVs - I didn’t see any of that coming until it happened.”

— Janet Yellen, November 2010

Complacency today about the risks of contagion from the weakest segments of high yield to the rest of the corporate credit markets is strongly reminiscent of the complacency about contagion risks from subprime in mid-2007. At that time, investors and regulators realized that the sharp increase in subprime delinquency rates was an issue, but believed that losses would be contained to that sector. Even though housing leverage was at all-time highs and home prices had peaked a year prior, markets did not believe that other sectors were at risk. Today, with corporate leverage ratios at all-time highs and a year after corporate profits have peaked, markets are again largely ignoring the risks of contagion from the most distressed sectors of high yield to the rest of the corporate credit sector.

There is a silver lining to all this doom and gloom. Despite all of these warning signs, the window of opportunity is still wide open, with market prices and implied volatilities now back around where they were before the market swoon during August and September.

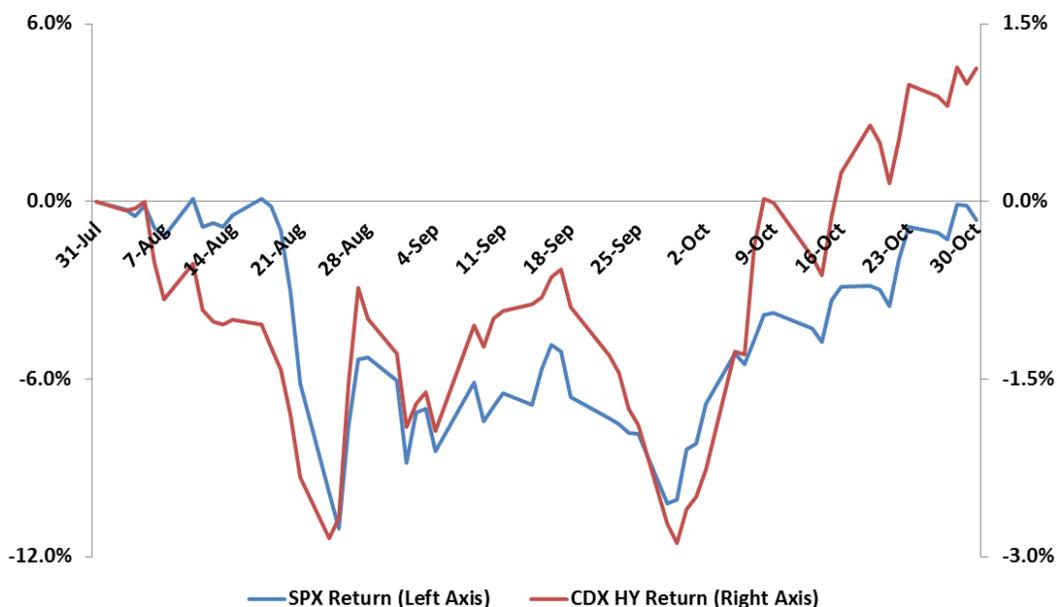


Figure 21: HY Credit and S&P 500 Performance July 31st - Oct 30th.
Source: Markit, Bloomberg, and Ellington proprietary models.

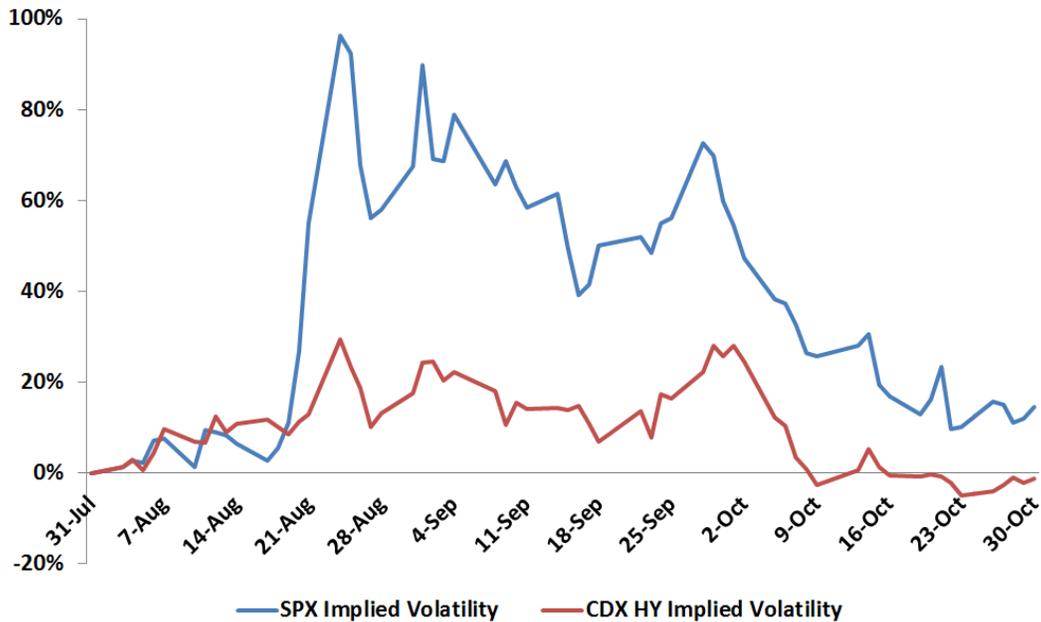


Figure 22: HY Credit and S&P 500 Implied Volatility Change July 31st - Oct 30th.
Source: Markit, Bloomberg, and Ellington proprietary models.

Like most turns in the credit cycle, it is uncertain exactly when the bottom will fall out of corporate credit markets, but the catalyst is likely to be an unexpected major event, perhaps even a single company getting into trouble. While we have been bearish on high yield for over a year now, we didn't think the conditions were yet ripe for a collapse. Now they're ripe.

As corporate leverage unwinds, distortions that have been magnified in credit index tranches are set to dissipate and eventually reverse. Yield-seeking investors can obtain leverage by buying equity and mezz tranches of the CDX HY and IG indices, compressing spreads at the bottom of the capital structure. We think the 0-35 tranche of CDX HY has the potential to be completely wiped out - not unlike the mezzanine mortgage bonds (subprime BBB through AA) that eventually got wiped out in the GFC. Banks, which have been slapped with onerous capital charges on low-spread synthetic instruments, no longer provide the bid for the top of the capital structure that they used to. In order to complete the capital structure, banks must now find a buyer for the senior and super-senior tranches that yield-hungry investors don't want. This double-whammy of spread compression at the bottom and spread widening at the top presents capital structure opportunities that we have profited from in recent years. As the credit cycle turns, we expect these opportunities to change and likely become more compelling.

Opportunities Using Single-Name CDS

Different markets are telling us very different things about the price of credit risk today. As shown in Figure 23, the S&P LSTA Leveraged Loan 100 Index, which is a total return index designed to track the performance of the largest institutional leveraged loans, has declined almost 5.9% since June, while the CDX HY S24 index has declined by only 0.1%. These indices, which measure similar risks, tend to move in tandem. Most of this divergence has taken place since late September. In October alone, CDX HY S24 returned 3.5%, compared to -0.6% for the S&P Leveraged Loan 100 Index. This outperformance coincided with by far the strongest month ever for high yield ETF flows.¹⁸

Using single-name CDS data, we are able to separate out the components of this outperformance since June to better understand whether we think it will revert. Nearly a third of this outperformance (1.23% of the 4.05% difference) is a move in the basis between the CDX HY index and its constituents. This

¹⁸<http://www.bloomberg.com/news/articles/2015-11-02/five-wild-stats-from-october-etf-flows>

move is purely technical, reflecting an unusually large premium at which CDX HY currently trades to its constituents. Moreover, this basis has historically mean-reverted, especially when the basis is greater than 1% of NAV (today it is closer to 2%). The conclusion we make from the graph below is that two factors are at work: not only has single-name CDS outperformed the leveraged loan market, but the CDX HY index has outperformed single-name CDS. The price differential creates a large wedge between CDX HY and leveraged loans, which supports our thesis that synthetic corporate credit is especially overpriced today.

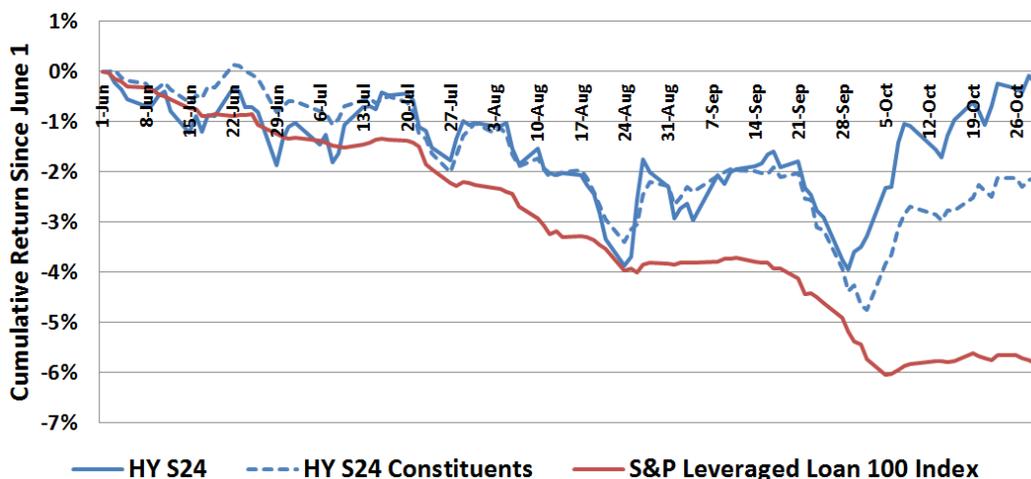


Figure 23: CDX HY Vs S&P Leveraged Loan 100 Index Cumulative Performance Since June. Source: Markit, Bloomberg, and Ellington proprietary models. Data as of October 30th, 2015.

Opportunities in Corporate Credit ETFs

Perhaps the scariest corner of the corporate credit market today is the market for corporate bond ETFs and open-ended mutual funds. These funds, such as the LQD, HYG, and JNK ETFs, provide daily liquidity to investors where the underlying collateral is much more illiquid corporate bonds. These funds are scary because liquidity has been tested in only one direction. Fund flows have been mostly one-sided over the past 5-6 years. Retail investors and institutions have been buying fixed income ETFs at a record pace in their search for yield and liquidity.

Who will take the other side when these massive flows reverse? The answer before the crisis would have been the banks. Now the answer is much less clear. The spate of recent failed placements in distressed loan markets is symptomatic of a liquidity vacuum. Not only have banks reduced their own market-making activities in corporate bonds due to new onerous bank capital requirements, but banks have also wound down their repo financing businesses that are the lifeblood of cheap financing for non-banks to provide liquidity in corporate bonds.

Fixed income ETFs provide daily liquidity to investors by allowing authorized market participants to create or redeem ETF shares in exchange for the underlying corporate bonds at a NAV quoted using the bid prices of the underlying collateral. These authorized participants can therefore make a profit if ETF prices deviate sufficiently far from fair value, a mechanism that keeps these ETFs trading very close to NAV.

However, if flows are large enough to overcome the balance sheet capacity of these authorized participants, ETF prices could theoretically diverge significantly from NAV, and market-makers could be forced to liquidate their positions in the cash bond market. This divergence occurred during the GFC and to a lesser extent during the Euro crisis of 2011.

It is this sudden rush to the exits that concerns us most, in part because it will be hard to see coming. If a large group of investors suddenly decides to sell, there may not be enough market-maker capacity to take the other side. When these ETFs become rich to NAV or when the cash-synthetic basis gets very tight, we can use corporate bond ETFs as a tail hedge or as a source of alpha. The cost of these tail hedges is often surprisingly low.

6 Critiques of Our Views

While we are confident in our views, they depend on a number of assumptions. We critique a few of these assumptions below.

Critique #1: The Credit Cycle May Not Be Turning

One major objection to our thesis is the possibility that the credit cycle isn't actually turning. After all, corporate default waves have historically accompanied recessions, and we are not currently in a recession. However, we believe that avoiding a default wave would require a Goldilocks scenario of both continued easy monetary policy and steady global economic growth, and high yield tends to peak before a recession begins. Today there is significant macro uncertainty about both monetary policy and global growth. Monetary policy could go in a number of different directions, but more easing would likely prolong the high yield bubble. Past experience suggests that dovish central bank surprises are positive for credit spreads, as demonstrated, for example, by the ECB's unexpected increase in asset purchases in January of this year. In the three days following the ECB's surprise announcement on January 22nd, spreads on the iTraxx Crossover Index, the European equivalent of the CDX HY index in the US, tightened to 291bp from 313bp.

As of November 12th, Fed funds futures markets were pricing in a roughly 65% chance that the Fed will hike rates by the end of 2015, potentially marking the beginning of the first rate hiking cycle in nearly a decade. However, the market-implied pace of hikes is extraordinarily gradual, with roughly two 0.25% rate hikes priced in for each of 2016 and 2017. The risk of rates rising much faster than this appears low. Market strategists and even the Fed are now openly acknowledging the real possibility of negative interest rates in the US, and even more quantitative easing.

For example, in the Fed's September minutes, for the first time ever an FOMC participant projected negative interest rates on the Fed's "dot plot", with the optimal policy rate at -0.125% through the end of 2016. Then, on November 4th, Fed chair Janet Yellen acknowledged that negative rates would be "on the table" if the economy were to deteriorate significantly. Some of the world's most highly respected investors and market commentators, including Bridgewater's Ray Dalio, former Treasury Secretary Larry Summers, and Doubleline Capital's Jeff Gundlach, have in recent months been actively speculating about the likelihood of "QE4", or another round of quantitative easing in the US.¹⁹ Foreign organizations including the IMF and the Chinese government have implored the US to keep rates at zero until at least 2016, citing concerns that a rate hike could trigger a global recession. If and when the first hike happens, its effects on markets are highly unpredictable. The Fed must balance the risks of asset price bubbles and bursts along with tracking fundamental economic measures like unemployment and inflation.

Recent examples of persistently low or negative inflation have been quite forgiving to corporate credit markets, a surprising fact given that deflation should make it harder for companies to grow their way out of debt. The reason for such low default rates is that governments have often intervened directly to prevent corporate defaults. In Japan, despite near-zero or negative inflation for more than two decades, the annual default rate of speculative grade issuers there was 1.0% from 1990 to 2013, compared to the global average of 4.6% over the same period.²⁰ One explanation is Japan's cultural history of *keiretsu*, a system of strong financial linkages and cross-ownership between banks and corporations. Japanese banks, faced with weak balance sheets and the prospect of write-downs on loans deemed to be delinquent, continued to provide support for zombie companies, "evergreening" loans as a way to avoid the realization of losses on their balance sheets.²¹

These linkages between banks and corporations are also common in other parts of East Asia and in Europe. In China, the state regularly intervenes directly in financial markets, including bailing out troubled companies, often but not always state-owned. In July, the European Central Bank added debt of state-backed

¹⁹"Larry Summers and Ray Dalio flag return of quantitative easing", The Financial Times, published August 25th, 2015.

²⁰https://www.moodys.com/research/Moodys-Japanese-corporate-default-rates-remain-low--PR_310204

²¹Peek, J. and E. S. Rosengren, "Unnatural Selection: Perverse Incentives and the Misallocation of Credit in Japan", NBER Working Paper, April 2003. <http://www.nber.org/papers/w9643.pdf>

corporations to the list of assets it may purchase as part of its quantitative easing program, potentially opening the door for more direct central bank purchases of corporate debt further down the road.

We believe that the likelihood of such purchases of risky assets or direct bailouts in the US in the near future is remote. In fact, recent hostility by politicians and regulators towards a number of sectors, including auto manufacturers and pharmaceutical companies, suggests that sentiment in the US today is very far from supporting corporate bailouts. These other countries are quite dissimilar from the US today in terms of their direct involvement in purchases of risky assets or in terms of their growth and inflation prospects. The Fed has thus far only purchased assets guaranteed by the US Government or the quasi-government entities Fannie Mae and Freddie Mac. In addition, due to major reforms following the GFC, the banking system in the US is adequately capitalized today. Banks should be able to write down bad debt without risking insolvency, and US corporates are also less interconnected with banks. Moreover, the Fed should be less scared about the impact of declining asset prices on wage growth and inflation, given how little impact the rise in asset prices has had on these measures in recent years.

As for the prospects of benign global growth, there is significant downside risk today owing to a much larger credit and leverage cycle that has recently peaked in emerging markets. Taking lessons from the 1997 Asian Financial Crisis and helped along by high commodity prices, emerging markets have used surpluses to build large capital buffers. Emerging markets invested much of these savings in their own countries, leading to significant increases in overall debt levels. According to research by McKinsey & Company, China's total debt load quadrupled from \$7T in 2007 to \$28T in 2014.²² And in its June annual report, the Bank for International Settlements found that the total government and non-financial debt-to-GDP ratio for emerging market economies doubled to 120% of GDP in 2014 from 60% of GDP in 1997. Such swift increases in debt are inevitably accompanied by misallocation of capital and subsequent defaults and debt restructuring.²³

As commodity prices collapsed since late 2014, this flow of capital to emerging markets has reversed. Because economic growth in emerging markets was fueled in part by the increase in debt levels over this period, even the stabilization of current debt-to-GDP levels will be a drag on growth as debt growth will contribute less to overall GDP. Over the longer term, some of these countries, especially those dependent on oil revenues, including Brazil, Canada, Iran, Norway, Russia, Saudi Arabia, and Venezuela, may encounter balance-of-payments crises if oil prices remain low. For example, on October 27th, Russia announced that it may deplete one of its two reserve funds by the end of 2016 on a widening budget deficit, and on October 30th, S&P downgraded Saudi Arabia's sovereign credit rating to A+ from AA- owing to weak oil prices.

If deleveraging in emerging markets triggers a global recession, it could easily push US high yield into a default wave. At the same time, if growth is benign enough to allow the Fed to begin an interest rate hiking cycle, rising borrowing costs and tightening credit conditions may also lead to a default wave. Whether governments and central banks can or would even want to engineer a Goldilocks scenario for high yield corporate credit remains highly uncertain.

Critique #2: High Yield Maturities Have Been Pushed Far Into the Future

Another objection to our thesis is that low long-term interest rates have enabled companies to push out the maturity profile of their debt. If most corporate debt does not come due until years from now, the argument goes, then we should not expect defaults to spike until much later. As Figure 24 shows, the average maturity of all US corporate bonds issued in 2015 YTD through October was a record 17.1 years, well above the elevated levels seen previously in the zero interest rate post-crisis environment.

²²http://www.mckinsey.com/insights/economic_studies/debt_and_not_much_deleveraging

²³Bank for International Settlements 85th Annual Report, published June 28th, 2015. <http://www.bis.org/publ/arpdf/ar2015e.pdf>

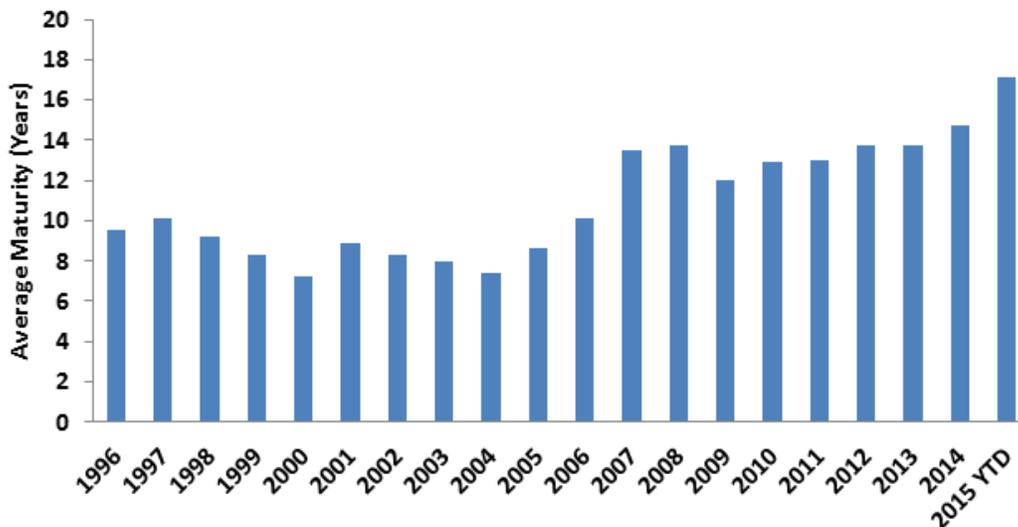


Figure 24: Average Maturity of US Corporate Bond Issuance, 1996-2015.
 Source: SIFMA. Data as of October 2015. <http://www.sifma.org/WorkArea/DownloadAsset.aspx?id=8589942781>

However, recent research by GMO suggests the opposite: in the last three corporate credit cycles, the debt maturity wall was actually much further out at the top of the cycle than at the bottom.²⁴ In the subsequent default waves, defaults peaked long before the maturity wall would have indicated. Historically, companies have defaulted far in advance of debt maturity, and while the timing of debt maturity is certainly important for any one company, a longer maturity profile is likely more symptomatic of easing lending conditions, which sow the seeds of defaults that materialize well before the debt comes due.

Critique #3: Some Measures of Corporate Credit Risk Appear Benign

By some measures, including interest coverage ratios and average leverage, corporate balance sheet risk appears relatively benign. After all, regulators including the Federal Reserve and the Office of the Comptroller of the Currency (OCC) have given explicit guidance on appropriate leverage levels. However, there are a few counter-arguments to this point. First, low overall market leverage is skewed by some companies (such as Apple, with \$200 billion in cash) that have huge earnings and little debt. While many corporations have healthy balance sheets, the default cycle will be driven by the companies at the extreme rather than the average. Second, as noted in the above example about Builders First Source, metrics of leverage can be manipulated when companies use alternative methodologies to calculate financial metrics such as EBITDA. Third, not only does the debt-to-EBITDA ratio matter for projecting corporate defaults, but so does its variation across companies and across time. As we have seen in the energy sector, just because a company's earnings have been strong in the past year or two it does not mean that recent earnings are a good way to measure corporate default risk.

As we mentioned previously, it is difficult if not impossible to find the right metrics to quantify froth in the midst of a bubble. Whatever metrics are declared to be most relevant by regulators, rating agencies, and less sophisticated investors are then gamed by issuers. Once a bubble expands well past fair valuations and new, less sophisticated entrants come into the market, investors become lazy, using heuristics such as an investment's rating to dictate portfolio selection. In the GFC the metrics for mortgages included debt-to-income and loan-to-value ratios, whereas in corporate credit markets today, the metrics are debt-to-EBITDA and interest coverage ratios.

²⁴GMO White Paper, "What Do High-Yield Maturities Tell Us About Timing the Credit Cycle? Another Take on the Wall", published July 2015. <https://www.gmo.com/docs/default-source/research-and-commentary/strategies/fixed-income/developed/what-do-high-yield-maturities-tell-us-about-timing-the-credit-cycle-another-take-on-the-wall.pdf?sfvrsn=3>

7 Conclusion

Prudent investing across the credit cycle requires two approaches. The first approach is highly analytical, data-driven relative value analysis. It relies on recent past trends to identify short-term mis-pricings. This approach works well in fixed regimes, where the future looks to be similar to the past. The second approach requires common sense and an eye for history. It asks simple questions about how the future may be similar to or different from the past. It requires constant self-doubt and the willingness to challenge conventional wisdom. This approach works well when regimes are shifting, and is our main focus in this paper. After our journey through painstaking data analysis and self-doubt, our conclusions about the high yield market are simple to state and to understand.

While it has been our fundamental view for a few years that the distortions created by easy monetary policy following the GFC have fueled a bubble in corporate credit, it is the recent tremors in the market that indicate the credit cycle is turning. Corporate credit markets are remarkably complacent about these risks today. Fundamental weakness, combined with the structural weaknesses created by skittish retail investors and illiquidity in corporate bonds, sets up a perfect storm for corporate credit that could materialize quickly and without warning.

We believe that now is the time to batten down the hatches. While there are reasonable criticisms of this view, we believe the credit cycle has already turned, as evidenced by a peak in share buybacks, declines in corporate earnings, weak industry returns, tightening lending standards, the composition of debt issuance, and fund flows. Much of the strong performance in high yield corporate credit has been thanks to declining interest rate expectations and increasing corporate leverage and asset prices. Even a stabilization in leverage - which at this point appears inevitable, since interest rate expectations cannot fall much further and leverage cannot increase by much more - should be enough to set into motion the next default cycle.

Despite confidence in our outlook, we take a cautious view. We expect high yield returns to be well below historical averages in the medium term, and consequently we believe the expected costs of our high yield short are quite low, if not negative. A cautious Fed and a return to more benign global economic conditions could take us into extra innings. While a broader downturn may still be a year or two away, high yield has tended to underperform in the final stages of the credit cycle. We can't time it perfectly, but we have come to a fork in the road. We are going to take it.

8 Important Notes

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