Today we look at the HY credit cycle after a strong 1H14 was followed by a brutal 2H14 as oil crashed and the lowest tiers of the credit spectrum re-priced. High volatility continues into 2015 with a weak January and solid February. The cycle is now 6 years in with some signs of weakness beyond Energy as the #1 sector. Late 2014 was a reminder of how risk aversion to a major industry and weak secondary liquidity can re-price risk and damage valuations as the CCC index fell 14 points from July to December. Saudi/OPEC policy for now is the #1 HY risk variable followed by Fed action on the front end of the yield curve. Based on history, risk appetites can absorb the expected tightening.

The #1 positive factor supporting demand is income starvation. Despite commodity sector pain, overall HY credit fundamentals remain sound and even favorable in many sectors outside energy. Issuer selection is critical (just as in equities) given developing pockets of credit erosion in HY even if an OPEC decision broadly or Saudi action narrowly could drive a major CCC rally or send the #1 sector into a fresh swoon. It is very rare that a single discretionary production decision has such an overriding effect on HY pricing.

We forecast low-to-mid single digit total returns for HY in 2015 and excess returns to modestly outperform HG. That is not a rewarding year in HY. The heightened volatility and steady aging of the credit cycle will test demand as the year proceeds. Other critical variables include eurozone systemic risk, which will remain a hot topic for inflation and global yield curve predictions.
These slides look at a wide range of data and market histories both from the top down and bottom up. We believe looking at more historical facts and trend lines is useful in countering the tendency of headlines to overly generalize what transpired across past HY cycles.

The slides herein track patterns across HY default cycles and past origination waves and cover a range of areas including asset performance, yield and spread relationships across investment alternatives, and the ebb and flow of multiple risky asset classes over time – both across and within cycles.

We have a lot more slices and dices in the much more detailed HY Slide Pack we periodically publish. We will be out with our full annual update of the HY Slide Pack sometime in the next few weeks. We use the Slide Pack as a reference book for a wide range of market data that is relevant to the HY investor, the credit investor generally, and multi-asset class managers.

We have seen an expanding breadth of new investors in HY over the past cycle. The HY demand growth is attributable to numerous factors including cash flow needs (i.e. income starvation), reach-for-yield impulses globally, and a range of demographic factors that are bringing new sources of demand from rising pension allocations as well as private wealth advisors. There are good reasons, bad reasons, and in-between reasons to be in HY. It is important to distinguish between them and not just look at the bears’ reasons why HY is bad and the bulls’ reasons why HY is good.
This slide highlights the stunning growth in corporate bond market size across HY/HG in $/€. The combined growth of over $4 tn comes despite a declining number of market-making intermediaries and much tighter regulatory controls on these OTC-dependent markets. In theory, the size combined with the regulatory evolution implies a higher liquidity penalty over time. More than a little “fake science” (i.e. “fix” all the moving parts and solve for X) gets used by strategists in estimating the liquidity premium, but the post-oil price action drives home that penalty is likely to be higher over time vs. past cycles.

The Volcker Rule and OCC leveraged loan guidelines are regulatory initiatives that must remain an area of focus for investors in 2015 as the market goes through a discovery process around how the regulators will proceed with implementation and enforcement. There have been myriad headlines around both the Volcker Rule and OCC loan guidelines but not a great deal of clarity around what it means in practice. The big question is how weaker secondary liquidity will translate into HY pricing and notably during periods of heightened volatility or bouts of risk aversion.

The Volcker Rule is a much bigger issue in our view than the OCC given the size of the bond market and the tortuous trail for HY (or HG) trading desks in implementing hedging practices at the desk level (no more “Whale” techniques allowed), developing inventory and risk control procedures, and avoiding the “proprietary” tag.
• The good news is HY faces very low default rates (US HY wrapped up 2014 at 1.9%) and the expectation is for continued low default rates. The chart above tracks current default rates in historical context for the 3 major default cycles since the rapid growth of the HY bond market kicked into gear in the mid 1980s. As we look back at the 3 peaks (13% June 1991, 11.6% Jan 2002, 14.6% October 2009), the transmission mechanism for today’s current HY market to move back in the direction of double digits requires widespread industry stress across a lot more than Energy. Such a default rate also needs a heavy dose of systemic stress and severe credit contraction to go with it.

• We believe the combined factors of low maturity schedules, a record refinancing and extension process in 2012-2014, a much healthier bank sector, and solid aggregate and median financial metrics in the HY issuer base make for a good backdrop when income starvation in the marketplace remains supportive of demand. Refinancing risk remains low in context.

• Debates over deal quality in this cycle vs. prior cycles (the LBO binge, real estate, thrift and oil patch crises of the 1980s, the TMT bubble of the 1990s, and record LBOs, subprime, structured credit, and systemic stress of the last cycle) make for useful compare-and-contrast exercises. There are a lot more differences than parallels in our view vs. today. A leveraged industry crisis (oil) is a very loose similarity to TMT, but we favor oil over fiber in terms of fantasy revenues. Eurozone stress is a new systemic element vs. past cycles.
The maturity schedule of HY bonds is another major mitigating factor for default rate risk in this record refinancing-and-extension cycle. The chart above shows the face value of debt maturities at various dollar price layers. Low face value and high dollar prices translates into low refinancing risk.

Low refinancing risk and a high volume of liability extension is its own reward with respect to default rates whether an issuer is seen as rich, economically viable, or otherwise. Maturity walls bring panics, and there simply is not a wall ahead in 2015 or even 2016 as many companies have been able to refi/extend. The taper tantrum of 2013 allowed a lot of loan refi and extension as floating rate product demand soared. Similarly, many issuers took advantage of much lower rates since 2010 to refinance secured into unsecured, enhancing financial flexibility and unencumbered assets.

Despite justified criticism of weak structural protection (covenant lite), tight pricing, and the fear that the “fuse is lit” for rising defaults down the line, a low default rate now is the reality. Low default rates (even if rising) are likely in 2015-2016. Our house forecast, based on objective quantitative models, is for an issuer default rate range of 3.5% to 4.0% in 2015. Low bond maturities at high dollar prices make that a conservative estimate, and a subjective assessment is that a lower default rate is more likely. Given low bond maturities, a 4% default rate requires leveraged loan credit contraction and a sharp rise in distressed exchanges late in the year (perhaps from E&P?).
The asset return quilt is our “why investors diversify” exhibit and details 15 asset classes across 18+ years or the craziest stretch in credit market history. It includes the longest default cycle (post-TMT) and the worst systemic crisis (4Q08/1Q09) since the Depression. Pick an asset class and follow it across the 18 years, and you see some dramatic moves in annual total return each year. The returns do not factor in the favorable impact of longer time horizons, reinvestment, or compounding (addressed in other charts).

HY acquits itself well against equities and high quality bonds across this period. A key decision point for asset allocators is framing the mix of total return components (price vs. income) over time and how that flows into risk appetites. While HY relative value is still unexciting in this “par market” (note: we expect low-to-mid single-digit returns in HY for 2015), there is ample support for a core holding in HY for any well-diversified portfolio. Par-weighted coupons in the high 6% range are hard to come by.

HY is a distinctive asset class on the menu of alternatives given the strong cash-generative nature of HY in a market of very low global interest rates. The past 18 years and rolling time horizons show the resiliency of an asset class often subjected to simplistic headlines and alarmist generalizations. Issuer picking matters, just as in stocks. We highlight that in the Oct 15, 2014 turmoil, all equity asset classes ranked below HY in YTD return and all high quality debt above HY, consistent with crisis years of 2002 and 2008.
• One of the big problems that we see in this market for total returns across all asset classes and excess returns in bonds is the clear trend toward “return compression” or “getting paid less for your risks.”

• The above chart posts the annual total return differentials of the #1 ranked asset class and the last place asset class from the total return quilt (18 years, 15 asset categories). The chart shows that 4 of the 5 lowest total return differentials are from the last 5 calendar years (excluding 2015 YTD). Only 2013 pushed above the middle of the pack with a breakout year in equities in a period when long-duration assets got pummeled.

• With respect to the allocation to HY bonds vs. high quality fixed income and equities, one has to envision what scenarios cause HY to perform badly and put that in portfolio context vs. equities or the yield curve. The same is true for long-duration, high quality fixed income and what the overriding asset class drivers would mean for other sectors such as stocks, higher risk credit, or dollar-based emerging markets benchmarks (debt and/or equity).

• Sorting out what fundamental weakness would mean for both equities and HY is not rocket science, but the sort of nuanced concentration risks such as what we saw in 2014 (oil and gas exposure of HY vs. equities) gets trickier. Similarly, calling the direction and shape of the yield curve (front end rise vs. shift all along the curve, flattener vs. steeper) would have great significance for the relative return call on HY vs. HG vs. EM debt.
The longer the time horizon in a low rate environment, the better chance HY has of performing well in total return vs. lower-coupon, high-dollar-price fixed income. HY assets have shown the ability to materially build value over longer time horizons (e.g. 3, 5, 10, 15, 20 years) with reinvestment. Many investors buy into HY only when solid equity-like returns are promised (e.g. discounted markets during periods of turmoil), but increasingly large asset pools (e.g. pension, wealth management, insurance) invest for income, to meet cash flow demands, and/or for the superior risk-adjusted returns of HY vs. equity (based on Shapes ratios).

Notable periods in above chart include 2Y, where the negative impact of 2013 rates moves and positive impact of 2014 rates show how duration can be a double-edged sword, and 5Y and 10Y, where the power of compounding really shows up in the numbers. For wealth advisors with varied client needs (income, asset growth), the income and reinvestment aspects of HY are growing in importance. The turmoil of TMT and the credit crisis provide interesting data points around the value of high cash flow in risky assets and how HY can perform vs. equities across down markets over time.

Another interesting frame of reference is Emerging Markets debt (longer duration and higher risk credit). Given the same secondary liquidity and OTC challenges, EM debt and HY bonds encourage the exercise of picking positive and negative catalysts and framing relative value in portfolio context.
This chart compares relative excess return of HY/HG to risk-free bonds (UST and bunds) in the US and euro markets (note: excess return captures the total return differential for the credit asset vs. duration-matched UST/bunds). As with the multi-asset class total return compression in an earlier slide, this chart depicts excess return compression across credit cycles, with high returns in early years and lower (or negative) in later years. We expect HY bonds to post greater excess returns to HG in both the US and Euro markets in 2015.

The main comparisons to consider in the above chart after 2014 is whether HY is in a stage of the credit cycle similar to 2007 or 1998, when pockets of trouble became evident after record origination cycles and the default cycle spiked shortly thereafter. We see more differences than similarities in 2015 with positive differences in HY deal quality, liability structures, maturity schedules, curve dynamics, and bank system risk. Negative differences include weak sovereign credit quality in high income countries and onerous regulatory demands that could contract credit and undermine OTC pricing. Similarities include high systemic risk (though more sovereign-based than tied to the global bugle bracket) and high industry risk (e.g. oil & gas, metals/mining).

The chart shows the cyclical patterns of the very pronounced credit cycles the market had experienced since 1997. While “boom and bust” is an extreme way to describe the results given the solid longer term running returns for HY (vs. annual), the swings in excess returns from year to year are pronounced.

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Source: CreditSights, BofA/Merrill Lynch Indexes, data through 02/20/2016

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• The chart shows the cyclical patterns of the very pronounced credit cycles the market had experienced since 1997. While “boom and bust” is an extreme way to describe the results given the solid longer term running returns for HY (vs. annual), the swings in excess returns from year to year are pronounced.
This chart presents an excess return quilt for credit asset classes across 18 years and 10 asset categories. We look at HY, HG, Emerging Markets (EM) debt (Sovereign, EM Corp, EM HY Corp), Mortgages, and Munis. We also plot HG Industrials, HG Financials, and HG Utilities.

As with other annual quilts, the movement from year-to-year is striking. 1997-1998 showed serious pain in EM only to be followed by two strong rebound years off the trough. Similarly, 2000-2002 showed extreme downside in HY only to be followed by a solid rebound and favorable relative placement in the excess return ranking. The cycle repeated itself for US HY and EM HY with downside in 2007-2008 and a positive spike in 2009-2010.

Our expectation in 2015 is for continued compression in excess returns. Unless systemic risks spike (solid HG Financials performance does not signal systemic fear now), we do not see the seeds for a major realignment of HY and HG based on fundamental risk. Fundamentals are sound (credit metrics support that view) across HY industry groups. HY is showing erosion in the high leveraged quartiles of the B and CCC tier, and that gets back to the need for experienced managers making well-researched issuer selections. Like any “hot” HY cycle, this one brought its share of dogs but less than past cycles.

Aggregate HY excess returns were heavily penalized in 2014 by industry concentration risk in Oil & Gas and Basic Industry. Oil prices remain a wildcard in HY excess returns and heavily tied to Saudi policy decisions.
HY bond index performance in 2015 highlights that volatility could be back to stay a while with a weak January (-136 bps HY excess return for the month) followed by a sharp bounce back in February (+324 bps February month to date through 2-20-15 as the slides went to print and +346 bps through 2-27 as we finalize the attached “Slides with Notes”).

YTD cumulative excess returns for HY stood at +192 bps for HY (2-20 in the chart above, +214 bps through 2-27). That compares favorably with +61 bps YTD for the HG index (2-27) after HG also showed a relatively weak January.

The CCC tier was a major swing factor in the HY index during 2014 and YTD 2015. After wrapping up a brutal calendar 2014 at -522 bps (including -299 bps in December), January stayed ugly for CCCs at -208 bps. MTD Feb (2-20 in chart above) showed a strong rebound of +328 bps excess return (+388 bps through Friday 2-27) to push YTD CCC excess return to +180 bps YTD (2-27), behind the +232 bps on the B tier and +210 on BBs. In tracking spread movements in the CCC tier, it is important to keep some artificial index spread distortions in mind, notably that Caesars exited the index in January, generating 55 bps narrowing as it fell out of the HY OAS.

The bottom line on the relative excess return by credit tier in HY is that you have not been getting paid for the lower tier risk. BB and Bs have been posting the better value relative to the risk.
This chart breaks out excess returns by credit tier and is a reminder that HY market practitioners are accustomed to big market swings. Experienced managers look out over the intermediate term as risk appetites and street market-making ebbs and flows. The main risk in markets such as the current one (good fundamentals in the majority of sectors and low defaults) is getting caught on the wrong side of a redemption wave when bids in the highest risk tiers can quickly erode (or evaporate). The plunge in the US HY CCC index by almost 14 points in 2014 and widening in quality spreads was a reminder.

The most striking aspect of this chart is the fact that the CCC tier has held one of two positions in the excess return ranking for the past 18 years: either #1 or dead last (#9). In fact, the CCC tier has been #1 nine times and #9 (i.e. last) nine times. The CCC tier is inherently volatile, less liquid and presents a historical annual default rate that is exponentially greater than the B and BB tier (BB tier ~1%, Bs ~4%, and CCCs ~16%). It is understandable why the CCC tier sells off hard at any sign of trouble. Quality spreads widen out disproportionately at the bottom and work their way up as in late 2014.

A notable trend above is the relative stability and consistency of BBs and BBBs as you move across the credit cycles. The BB tier was #1 in 2014 despite all the noise around HY. The BBs and BBBs also have posted the best long-term risk-adjusted total returns (Sharpe ratios). Exceptions to stability were BBBs in 2005 (auto downgrades) and BBs in 2002 (TMT).
This chart shows the swings in dollar prices for the B tier and CCC tier indexes over the credit cycles from the TMT cycle (97-99 peak origination years) through the credit bubble (2004-2007) and the post-Lehman market crisis and then through the current credit cycle peak and recent sell-off.

The sheer magnitude of the CCC tier dollar price swings is a reminder of why mainstream investors and intermediaries run for cover and get trigger happy at any signs of trouble. The CCC dollar price trough in the TMT downturn hit a 42 handle (October 2001) and during the systemic crisis of 4Q08 hit a shocking 31-handle. The dip to 86 in mid-Dec 2014 was mild by those standards. The reaction in 4Q14 gets back an earlier slide on why CCCs tend to be either first or last every year in excess return. Higher coupons and yields come with materially and exponentially higher average default rates.

The current cycle saw a “par plus” price at the June 2014 CCC peak. That stands out vs. past CCC dollar peaks. Underlying factors include record low interest rates vs. past cycles as the curve shifted down during this recovery since early 2010, the relatively higher quality of this deal cycle, and the unprecedented volume of refi/extension of liabilities by CCC issuers. Minimal CCC maturities keeps refi risk and default risk lower near term. The higher quality deal cycle comes with the caveat that a very low bar was set by the prior HY cycles. The magnitude of the upside after such sell-offs explains the recently heightened interest from distressed debt and PE investors.
This chart is derived from the dollar price indexes posted for the B and CCC tier in the prior slide. We recognize that interest rates and relative duration (CCC is the shortest duration index at 3.2 yrs vs. 3.8 yrs for the B tier and 4.8 yrs for BBs) also contribute to dollar price differentials, but the dollar price difference between the two does provide a good proxy for how the market sees the basket of risks over the course of credit cycles. As the credit cycle gets more gray hair in 2015-2016, that reality will weigh on the willingness to step up and buy CCC paper at higher dollar prices.

The peak B-CCC price differential in the post-TMT period came in Jan 2002 at over 43 points. During the systemic crisis, the market saw a 31 handle differential in Feb 2009. The systemic swoon of 2H11, when risk aversion reached a mini-peak in Oct 2011, saw the differential rise to just under 17 points. The bottom line is that those are massive swings. Even if comparability can be impaired at times by mis-rated credits, rapid issuer migration across tiers, and distortions from fraud (e.g. Enron, WorldCom, etc.), the swings from mid to high single digits during credit cycle peaks to 3-4x current levels at troughs (at 2-20-15 the difference was 9.4 points) shows how CCCs can at times trade like volatile, high dividend stocks more than bonds.

The low differential came in the bubble period of June 2007 at 4.6 points, which was only slightly below the 6.5 points of the June 2014 CCC peak.
This chart starkly depicts the plunge in the dollar prices of E&P bonds. We plot the month end dollar prices for oil and a derived E&P index with its BB, B, and CCC components. It is notable that the E&P indexes were all above par as recently as August 2014 month end. Oil (spot WTI) peaked in late July (7/23) at approximately $107, so the swoon through January 2015 was dramatic (down almost $11 per bbl in Oct, ~$12 in Nov, and ~$16 in Dec). The recent $50 handle (2-20-15) on WTI is up from the January low ($44+) vs. $53+ at the end of 2014. Volatility will remain a fact of life.

Weakness in the largest HY sector (Energy) and its largest combined industry subsectors (E&P and Suppliers/Services) dragged down HY aggregate performance. The oil plunge put extreme pressure on dollar prices in the CCC tier broadly as the highest risk alternatives re-priced along with industry fear and the mad backpedal on bids to stem selling pressure. Redemption fear and notably for those funds overexposed to oil credits made the situation that much worse for the inherently illiquid low end of HY.

E&P maturities are minimal, so default risks are heavily tied to bank line negotiations as assets get revalued and borrowing bases adjust to reflect new oil prices. Lenders must assess a wide range of borrowers with very distinct operating profiles as borrowers seek funding options to address the projected cash flow bleed and moving target of oil prices, reduced capex, and cost cuts.
• This chart looks at the 2014 excess returns for the range of broad industry sectors (“Level 3”). Not surprisingly, Energy was the slaughterhouse given the 4Q14 collapse while Basic Industry also showed some material weakness from the commodity-based industries in the mix. “Leisure” was really more an issuer problem in the form of Caesars than a broader industry problem.

• The right of the axis shows that a significant majority of the Level 3 sector excess returns were positive despite the weak numbers posted by the HY aggregate index. The issuer picking benefits become clear as you peel back the layers. Funds with outsized concentration risk in oil and gas related sectors would face performance pressure. Those more moderate in taking exposure to the fracking frenzy naturally held up better.

• The CCC tier also was a victim as the low end re-priced with the sell-off in oil and gas. The issuer-by-issuer and industry-by-industry due diligence process or doing a fresh round of homework on the E&P and Services/Supplier names is not a new exercise for seasoned HY investors.

• Holding well-positioned HY names (i.e. the 95% that do not default on average each year) is the goal, as is avoiding the need to sell them into weakness on redemptions. Selling preferred issuers for liquidity needs can make it difficult to “re-source” such bonds later. The verdict on picking those “winners” and avoiding “losers” is unfolding in Energy and Basics.
The above chart presents HY industry mix and concentration data in terms of the face value of bonds. The growth in Energy bond face value is telling with an almost 15-fold increase since 2001 vs. less than a 4-fold rise in the total HY index. The combination of Banking and Financial Services posted over a 10-fold rise since 2001. Much slower growth was evident in Telecom and Media with a combined doubling in face value.

Many sweeping generalizations are made about how backward-looking models can predict the future despite such a radical mix shift in industry groups, different drivers in industry risk, an expanded global issuer base, and a highly diverse asset base that creditors will look to for support. All models can add information value and a frame of reference, but it is always good to remember that there have been only 3 major HY bond default cycles and the primary drivers of changing risk, the economic backdrop, the absolute yield curve levels, the regulatory environment, the health and range of HY bond market-makers, and the industry mix were all quite distinct.

The main takeaway from the shifting industry concentration risk is that the #1 and #2 sectors were among the worst performers in 2014 on commodity price weakness, slowing global growth, and some very aggressive balance sheet policies and cash flow bleed tied to capex levels (i.e. the emerging E&P names). Most other sectors performed well.
• The fear of an LBO wave dominated the headlines in early 2013 after the Dell news but never came to pass. Instead, the cumulative tally of LBOs for the 5 years from 2010 to 2014 is well below just the year 2007, when the credit cycle came to a screeching halt. One could even put asterisks on Dell (i.e. Michael Dell stake) and Heinz (Buffet) for more than 1/3 of the 2013 tally.

• Low US LBO volume followed the big Dell headlines despite very low UST rates, a still-compelling reach-for-yield impulse, record origination of HY in all tiers but notably record volume of CCC new issue. There seemed to be unlimited demand for leveraged loans after the mid-2013 taper tantrum with massive inflows into loan funds that should have eased barriers to getting LBOs done and further broadened the base of available funding for PE deals.

• The LBO boom never surfaced despite cheap funding, rising allocations to PE, and the late cycle excess of past HY cycles. The theories as to why the LBO cycle was so low vary and include valuation (record equity market highs), fear of systemic risk in Europe (i.e. fear of a “sovereign event” in the lag time to deal close), the post-Volcker end of most merchant banking (the theory that less self-interest meant less blank check bridge loan approval), and the fact that Washington and the regulators were cracking down on the banking sector with ongoing litigation and further reform proposals before and after Dodd-Frank. Big bang debates over reform implementation may have encouraged restraint on the use of bank capital in LBOs. That is just some of the theories.
This chart focuses on the ground zero of credit stress right now, which is the E&P sector and the Oilfield Supplier/Services industry that is dependent on E&P spending levels for revenue. The total face value of these bonds (i.e. the par value at risk) rose to 10.6% of the HY index by year end 2014 from only 3.1% in 2001 and under 6% in mid 2008 when oil spiked dramatically.

- The E&P sector had already been bleeding cash dramatically in the good times at much higher capex levels that came at much higher oil prices. The moving parts from here are about framing cash flow risk as the E&P players cut capex aggressively, adjust the risk of drilling programs and modify incremental expansion strategies, move to cut costs, and scramble to find funding on a secured (1st lien, 2nd lien) or unsecured basis.

- The E&P sector will seek to extract price concessions from suppliers, who for their part had to scramble to keep up with the breakneck pace of expansion in the US E&P sector and more specifically the shale oil projects that will feel enormous pressure at lower prices. The pain for the Services/Suppliers revenue line will be immediate and the mad scramble to lay off thousands have dominated headlines in the supplier sector.

- The price action has brought in distressed investors and opportunistic funds seeking to exploit market overreactions in some cases and justifiable fear in others. Hedge funds and PE players have arguably been underweight HY bonds to this point and are now seeing sector-specific opportunities.
This chart breaks out ratings/issuer mix in the Energy sector by face value and by issuer count. The main point is this sector is as research and information intensive as it gets with a combined total of 71 issuers in the B/CCC tiers of E&P and another 33 in the B/CCC buckets of the highly specialized and often tech-specific segments of the Equipment & Services industry.

The challenge is raised by the fact that E&P issuers can evidence widely divergent operating profiles even within the same basin while for Equipment and Service players counterparty/customer risk and product segments can be quite diverse. The research and risk management demands in Energy is a function of “old school” granular legwork and digging for disclosure. The disclosure and data needs are a concern in E&P bonds given the “over-the-wall” negotiations on bank lines. Those walls are not the same height for all investors or all firms, and information extracted in the loan process or in knowledge of most recent hedging positions can be very relevant on the bond side of risk assessment and relative value.

The face value mix above highlights that the overall Energy sector is slightly above average quality vs. the HY Index. E&P is below average quality while Gas Distribution is very much above index quality. We would characterize Equipment/Services as highly risky given the inherent vulnerability of revenues. While the Suppliers are low in terms of CCC weighting, the 70% face value weighting in the single B tier is extremely high vs. the index.
This chart shows major issuer return data (total returns TR, excess returns ER) to show that the largest HY issuers overwhelmingly were decent performers in 2014 despite weak aggregate HY performance (note: the chart lists issuers that were in the market all year. Some new issuers have broken into the ranks in 2015). The Top 50 comprise over 1/3 of the HY Index. Only 3 of the 50 had materially negative returns (Caesars, Linn Energy, and Peabody Energy), 4 posted negative total returns including Sprint, and 9 of 50 posted negative excess returns with only 3 in double-digits. Sprint was at -5.5% in ER.

One element worth highlighting is the small exposure of the largest E&P names in the Top 50 with 2 of the 4 major Energy names in the Gas Distribution sector (CQP and RGP). As highlighted in an earlier slide, the problems in HY performance have been heavily weighted in the long tail of E&P and Supplier/Services names below the ranks of the largest issuers. Exceptions include Chesapeake (CHK), which is heavily natural gas based (72% of production natural gas) while Linn Energy (LINE) was an exception from the “oily” E&P ranks (40% oil, 17% NGLs). The same is true in Metals/Mining (ex-Steel) with BTU as the exception making the Top 50.

Like Texas Utilities in 2014, Caesars was in a class by itself as a problem issuer headed for bankruptcy. Excluding Caesar’s, both Leisure as a broad sector (Level 3) and Gaming as a narrow industry group (Level 4) posted positive 2014 excess and total returns (even if barely positive excess).
The YTD performance (Total Return “TR”, Excess Return “ER”) of the Top 50 posted reassuring numbers. Of the “trouble stories,” an energy issuer rebound helped after a dismal January (see Appendix for January 2015 results). Linn rebounded enough from its -8.6% TR in January to post a positive YTD. Only 4 of 50 posted negative TR/ER YTD (i.e. 46 were positive). That is not a HY crisis. BTU remained pressured (major downgrades to low B). Intelsat guidance drove a February stock plunge.

The biggest YTD loser, Bombardier, is an interesting case since it is a reminder that low rates, reach for yield, and high risk appetites also provide the means for some issuers to take aggressive action to “heal themselves.” For BBD, the ugly news of mid-January (CSeries cost struggles, suspension of Learjet 85 program, scrapped dividend/guidance, ratings downgrades to the B tier, and a stock and bond price plunge) drove a Jan -5.7% TR. The situation was dire enough that it led to a critical change of CEO away from the family to an outside aerospace executive. Only 6 weeks later during the week of Feb 27th (after the date of the chart above), Bombardier materially upsized a bond offering (from $1.5 bn to $2.25 bn) and an equity deal (originally planned $600 mn to $868 mn). Aerospace programs can burn a lot of cash, and execution risk remains a factor. The main point is that strategic and financial responses are available for many issuers with a decent economic backdrop in a low rate environment.
• The real bloodbath in 2014 and January 2015 was in the B/CCC tiers of energy and specifically E&P and Supplier/Services. We looked at the broader dollar price plunge for each credit tier of the E&P universe on an earlier slide. The above charts provide some granularity at the issuer level.

• The catalysts for credit calamity are not just oil prices even if that was the overwhelming factor. Some of the worst performers are even heavily natural gas based and dramatically overleveraged outright – even in the context of the most optimistic Enterprise Value multiples and forward EBITDA scenarios. Some have simply turned in poor results on ambitious capex programs in the face of deeply negative cash flow. An example of that full range of shortcomings would be Quicksilver with its -77% total return.

• Our energy team is swamped assessing details of operational performance, financial risk profiles, hedging offsets, where issuers stand in their E&P cycles, and the flexibility they have to weather the storm and make it to an oil price recovery. Bank risk appetites are critical at this juncture for liquidity.

• The magnitude of price weakness has drawn significant interest from hedge funds, private equity, and distressed debt players as investors (debt and equity) do their homework on a research-intensive space. The good news is capital will be available. The bad news is structural subordination will increase, asset coverage will erode badly, and a failure to make progress on the supply-demand imbalance could lead to distressed exchanges or bankruptcies.
There is little question that without a radical change in Saudi/OPEC policy, that the E&P and Supplier/Services sectors will remain volatile and subject to issuer-specific news flow around liquidity and liability management plans, production and capex guidance, and the usual speculative fervor that drives spot oil prices. Beyond the supply side, the question marks around global demand and how developed markets or growth markets (read China) might influence forecasts will make for volatile price action.

This chart looks at the updated YTD return profile for the Top 50 B/CCC issuers in Energy. The swing in YTD returns from January (See Appendix) to February YTD (2-20) highlights the influences of some new capital circling energy debt, some relief in demand forecasts, and a very modest rebound in oil off the late Jan lows. As of Jan month end, the market saw 14 of 50 post double-digit negative total returns. As of the YTD Feb numbers posted above, that number is down to 4 of the 50. The month of January saw almost half post negative total returns. For YTD Feb, over 2/3 are positive. That is still a brutal set of numbers in a market where risk appetites remain high, but at least February broke the freefall.

In terms of excess returns, January posted negative excess returns running at worse than -5% for 19 of the 50. YTD that number has now dropped to 9 of the 50 with excess returns worse than -5.0%. An interesting twist is that 5 of the 9 are Services as opposed to E&P.
In contrast to our objective quant-modeled default forecast (3.5% to 4% range), this chart is our “pragmatic gut check” on defaults. We assume any short-dated bond (2015 to 2017) that trades below a certain price (one scenario for a 95 dollar price and one at a 90 dollar price) goes bankrupt in 2015. That extreme scenario is a conservative approach since a bond trading at 90 or above has a range of refinancing options and liability management alternatives. In the table we provide and issuer weighted and debt-weighted number. It is important to distinguish from the debt-weighted number that the greatest risks for now are in the long tail of smaller issuers.

If every issuer with a short bond maturity (from 2015 to 2017) below 90 defaults in 2015, that translates into only a 2.3% issuer default rate and a 1.3% debt-weighted default rate. If every issuer with a short bond maturity below 95 defaults, then the issuer default rate would be 2.9% and 1.6% debt-weighted.

The main point of the exercise is to highlight that very light maturity schedules and near record low interest rates have kept default rates low and are likely to keep the default cycle extended. Whether you believe the bonds are rich or not or the issuers creditworthy or not, the reach-for-yield incentives and the lower coupons that have been locked in during the record refinancing wave provide time and room to maneuver on the default cycle.
• More than a few seek to create perfect default predictors or rich-cheap models whether macro models from the “top down” or micro models from the “bottom up” (the latter often issuer based). We are in the model business and no different. Weighing correlation vs. causality, past-is-prologue assumptions, and a shifting mix and relative weight of risk factors (systemic, fundamental) across the very small universe of HY bond default cycles make for contentious debate and more than a little academic ego. We use a basic sound bite on models: “Treat models like you are in a hardware store and not a church. Pick what you need for utility. Don’t worship.”

• In terms of macro factors, the role of the yield curve as a predictor of recessions has raged at the Fed for years. Its role in predicting default cycles is usually not an area of focus though it is assumed bear flatteners (short end rising faster than long) undermine risk appetites and reduce the penalty on being in cash. Rising short rates of course do squeeze interest coverages and earnings for leveraged companies with loan exposure in their capital structure.

• The above chart highlights the simple fact that we have not had a crack in the credit cycle until we saw a flat curve first. We have only had a few HY bond cycles as it is, and there have been protracted period of very strong credit demand even in the face of a flat cycle and even bear flatteners. The fact of what the curve looked like in 1989, 1998, and mid-2007 is there to consider. At this point, the curve has a long way to go to be flat.
• With respect to whether the yield curve is flat, we would highlight the decision is not a Rorschach test but is a hard number as detailed in the above chart (2-20 date). The section of the curve most relevant to the HY bond market is the 3M to 5Y segment of the curve with a slope of 159 bps.

• As we send these slides to print, the UST curve had been flattening from the long end beyond 5Y UST. The 5Y was down by 14 bps since the start of 2015 and 22 bps since the start of 2014, but the “flatter” is still steep in the context of historical averages for the 3M-5Y. The same is true for 3M-10Y and 2Y-10Y, other curve segments most relevant to HY. We are definitely flatter (but not flat) vs. the post-Lehman averages but not so flat looking back across trailing time horizon averages from 10 to 35 years.

• The curve moving in the direction of “flat” can continue if the Fed pulls up the front end as it departs from ZIRP and if at the same time the mid-to-long end keeps feeling the effects of disinflation/deflation and either stabilizes or keeps coming down. Consensus curve views still fight the tape, however, and calls for an upward shift in the UST curve, so the flat curve may remain elusive for some time if the 5Y and 10Y move north also.

• The fact that the recent flattening trend is from a bull flattener and not a bear flattener makes for a very distinct trend. We compare and contrast some past curve shifts (e.g. 1994, 1997-1999, 2003-2006,) in the appendix.
The plunge in oil and deflation fear calls for a review of past inflation cycles. The chart plots CPI and the GDP deflator from the inflationary and stagflationary 1970s through the Volcker inflation-fighting years and on through three decades of a bull bond market. The main point is that every major downturn and crack in the credit cycle was preceded by a “CPI pop” (March 1980, October 1990, March 2000, July 2008) often on a spike in oil.

Clearly there were other economic, structural, regulatory, globalization, currency, and asset quality issues at work through these periods, but the direct link of CPI to the consumer that dominates GDP is obvious. The recent plunge in oil and rally in the dollar (and what it might mean for imported disinflation/deflation) does make 2015 a different backdrop than 2008, 2000, and 1990. That is at least worst something when one considers that each credit cycle downturn also had a flat yield curve on the way into it (we are still steep).

Earlier cycles (2008, 2000, and 1990) also had plenty of moving parts across the health of the bank system and intermediaries (e.g. thrift crisis, regional banks, bridge loans in 1990, near-death experience in 2008), the real estate market (commercial real estate, housing weakness in 1990, subprime 2008), the quality of HY bonds in the market (1980-style LBOs still set a standard for uniquely bad quality, TMT in 2000, record LBOs in 2007). In this cycle, LBOs have been low and oil is declining. CPI is going the other way.
As we consider the yield curve shifts and ponder the potential trend in the shape and level of the UST curve, it is hard to ignore the extraordinarily low levels of government curves in developed markets around the world as detailed in the above table.

The natural question is how far can the UST curve move from the other curves when the UST 2Y, 3Y, 5Y and 10Y is basically the high yielding government security of choice? The US dollar generally is perceived as the safer currency vs. the euro and is by far the largest and deepest and most liquid market – even in the face of recently voiced concerns around the diminished liquidity of the UST market and the ability to trade in the massive size of past years.

The comfort with the lower risk of a very onerous bear flattener actually playing out is partly rooted in the global yield curve trends. The 5Y UST already trades wide to every security listed above. Notably Portugal has been out of the IMF bailout program less than a year and Ireland less than two.

Negative yields across Switzerland and Germany through 5Y make for reassuring comparisons for UST paper and what it might mean for a continuation of reach-for-yield demand for HY bonds. The disinflation/deflation debates also help as does the plunge in oil and stagnant wages. We note the UST 2Y, 3Y and 5Y were the highest on the list above also, so that is food for thought.
The refrain in high risk credit (US/Euro HY, EM Sov/Corp) is that yields are irrationally low. This chart takes a cross-section of indexes/benchmarks and “lines them up by height.” The ordering is not irrational in the sense that the US and Euro HY CCC tiers are well above the pack along with Emerging Markets. In other words, the tiering of yields across the delineated asset classes and subsectors can be seen as rationally aligned. The debate then is about whether the higher yields pay you for the risk (i.e. an asset risk opinion).

The decision to be made around foregone coupons and cash flow from higher risk asset classes loom larger with such painfully low yields in the higher quality subsectors. The argument that the yields are irrational has been going on for some time, and the “head start” from coupons and reinvestment returns (i.e. lost ground) are often ignored when the perma-bears start anew.

We would be hard pressed not to agree that yields are in fact brutally low, but that still has to be framed in the context of minimum required yields and relative yields as well as investment alternatives. As with PE and EV multiples in equities, there comes a time when an investor has to “throw the penalty flag” on valuations for crossing the line on minimum expectations. The US HY market arguably did that last June when HY index yields dipped below 5% (4.8%). In contrast, the BB-heavy Euro HY index has been resilient at a recent 3.8% as sovereign curves plunged and many turned negative along the short duration buckets that are used to frame the HY markets.
• Putting incremental yields in the context of historical default rates, this chart frames incremental yields (bar chart) against running defaults (line graph). The average of 77% is the dotted line. If you look to the left of the 2015 120% average, the comparable periods include high default years (2001-2002, 2008-2009), bouts of risk aversion (2H11), or periods ahead of sharp rallies (1H03, 2012) where HG has already rallied and HY follows. The “mental leap” could be that defaults are set to spike now (we do not see that by any stretch) or spreads are set to rally (we also do not see that as likely unless oil does a radical rebound on an unlikely early Saudi reversal). We do see the yield relationship as a good case to make that HY demand will remain very strong and especially as yield curve fears subside or get more balanced.

• We do see credit quality currently in deterioration mode within a subset of the weakest names in the B and CCC tier (see the credit metrics section and related slides), but we also believe fundamentals are still strong at the median in HY with rising sales, solid EBITDA growth, stable median EBITDA interest coverage, and relatively stable EBITDA margins. Partially offsetting this is higher median leverage.

• We do expect defaults to rise in 2015 and 2016, so we view HY as a “winners and losers” game in issuer and industry picking. We do not see 2001-2002 parallels or the type of excess that sent 2008 into a downward spiral.
This chart tracks par-weighted coupons over time for the HY bond index since the post-TMT 2003 rally year, through the bubble peak of 2007, into the crisis years of 2008-2009, and then through the record origination wave of 2010-2014. Our basic theme around coupons is that such cash flow generation by the HY asset class has become more important than ever in a period of very low interest rates, ongoing deflationary fear and QE in Europe, and even negative rates in short to intermediate maturities of various so-called “safe” sovereigns and/or safe currencies. The need for cash flow is critical to pensions (i.e. current benefit payments) and dividend payers (mutual funds).

Coupons reflect cash flow generated by an asset class over a year (before reinvestment). Those par-weighted coupons across the credit tiers have to be put in the context of UST markets that are bouncing around in the low to mid 1%-handle range for 5Y UST. While the HG index offers a coupon of around 4.5%, you only get to buy into that coupon stream at more than a 8 point premium (HG index just over a dollar price of 108) vs. the HY index at a 100.7 dollar price. Everything comes at a price.

The 6.9% par weighted coupon in the HY index frames up pretty well vs. the 1.5% 5Y UST yields posted this past week. Income desperation and cash demands definitely do promote reach for yield behavior in HY with CCC demand a function of that 8.7% coupon. Most HY investors expect to be able to pick the 84% of CCCs a year that do not default (vs. the 16% that do).
• For some context on HY coupon relationships within the HY index, this chart plots the ratio of CCC coupons to BBs and to single Bs. The ratios are near all-time highs since the 2003 post-TMT rally with the CCC/BB ratio of 1.44x and the CCC/B ratio at 1.21x.

• We note again the relationship of default risk across the tiers shows an exponential increase in default rates when moving down the spectrum. The BB long-term default rate is around 1%, the B rate around 4%, and CCCs around 16%. Chasing high coupons can be dangerous in CCCs with historically minimal compensation for poor CCC liquidity as derived from market implied default rates. We detail that in our separate High Yield Slide Pack publication.

• Cash flow is king for many HY portfolios and that encourages long term CCC holders who have any combination of cash flow needs or conviction that mark-to-market swings are less important than their ability to pick the winners and losers. That high level of CCC cash flow can be used for reinvestment in high quality tiers or for cash build to address redemption. At the very least, the high coupon lowers the investment cost basis.

• CCC’s with minimal bond maturities and the lack of major refinancing demands can strengthen investor fortitude in dealing with the historically volatile excess return patterns of CCCs detailed in earlier slides. The 14-point plunge in the CCC index in 2H14 from July to December is an example.
The recent uptick in equity volatility (reflected in the VIX) had the expected effect on the HY market by roiling spreads and driving more defensive pricing in the secondary market. The VIX crossed the 20 line a few times in 4Q14 (highs on 10-15 at 26.3 and a spike on 12-16 to 23.6) and took HY OAS along with it as the combination of plunging oil and stock market turmoil through mid-October sent spreads materially wider. On 10-15-14, the VIX closed at the highest level since June 1, 2012 when it hit 26.7 at the back of the May 2012 global stock market meltdown. We would note that on 10-15-14 the HY index was at YTD returns above all the major equity benchmarks, so a lot was going on besides oil in the global risk markets (UST dislocation, M&A risk arb, etc.).

- We look in more detail at the correlation of equities with the HY/HG indexes in our HY Slide Pack, but the patterns in the above chart are clear in terms of how rising or declining equity volatility translates into HY OAS moves. The sharp decline in the VIX from the August 2011 highs (48.0) was accompanied by a slow and steady grind tighter in HY OAS with a few bad months thrown in such as May 2012. Earlier spikes such as May 2010, which came on the back of the initial Greece headlines, sent the VIX to almost 46.

- A general statement can be made that systemic worries generate a lot more of a threat to the equity markets than oil price weakness, and the biggest systemic threats in the market still are rooted in excess debt levels in some troubled eurozone nations and the inevitable macro questions around China.
In this chart we look at the range of monthly peak-to-trough US HY OAS moves since the start of 2010. We list the Top 25 monthly spread ranges. It is not a pure measure of spread volatility but a good proxy for when the spread backdrop was any combination of very bullish, very bearish, simply confused about the two intra-month, and/or wholly surprised by an “event.”

As you look at the Top 5 of the Top 25, one can characterize the worst periods as “systemic months” where Eurozone headlines (or UST default/downgrades) dominated. The same holds true for 10 of the Top 12.

The big systemic threat in 2010/2011 was the Eurozone. The same systemic pecking order holds true today, but the sovereign risk issues, the awareness of banking sector risks, and the understanding of the long-tailed risks generally are much more refined today after all the discussions of ECB policies, LTROs, QE, and the allocation of risk across central banks. That is not to say lurking counterparty and hidden exposures could not surprise since counterparty disclosure remains wholly inadequate for investors and regulators alike.

Looking at the fallout from oil, 2 months from 2014 made the Top 10 with Dec 2014 at #6 and Oct 2014 at #9. Feb 15 just moved into #16. The taper tantrum of July 2013 ranked #16. Only 4 months in 2014 made the list and only 2 months in 2013, so the conclusion is either those months were not so bad after all or a reminder that things can get a lot worse. For now, we see relatively solid median credit metrics as a good foundation for US HY.
In this chart we plot the trailing 5 years of B-CCC quality spreads (defined as CCC OAS - B tier OAS) through 2014 against the trailing five years from 2003 to 2007, a period now widely agreed to be a credit bubble of epic proportions. While credit cycles can vary dramatically in terms of underlying risk drivers (which we believe in turn inherently limits some of the usefulness of using a few macro variables in correlation studies), a comparison of the 2003-2007 quality spreads at the lowest end of the credit spectrum to those in 2010-2014 is interesting in highlighting where the market stands today.

By late 2007, the credit cycle was near a screeching halt and the structured credit market virtually shut down. Subprime was unraveling. As noted in excess return charts, 2007 and 1998 often get cited as good comparisons for the current market. We flag the fact that trough HY spreads in 2007 were dramatically lower than today but also note that quality spreads in late 2007 and late 2014 both were widening rapidly. HY OAS in 2007 was much tighter in absolute terms and was framed against a much higher UST curve.

One question is whether the scale of the problems in 2007 (systemic bank crisis, a housing and consumer credit crisis, counterparty collapse risk, record LBOs, etc.) is matched by the oil sector spiral. In our view, the 2003-2007 market had a lot more differences than similarities to the current credit cycle including the consumer, credit metrics, LBO volume, and bank system health. The systemic asset crisis and deal cycle quality was much worse then.
The above chart tracks the 2014 running year-to-date (YTD) cumulative excess returns of US HY vs. US HG and also for Euro HY vs. Euro HG. To be clear, the excess return for HY and HG is vs. the risk-free asset (UST for US and bunds for Euro). The time series above then tracks the differential between the excess returns for HY vs. the excess returns for HG in each market.

The main question on excess returns is whether you got paid for taking the greater risk of being in HY index vs. the HG index. In 2014, the answer to that question was no with a -125 bps shortfall for US HY. For the US, oil prices blew that potential out of the water in 2H14 although funds that were materially underweighted energy (that would be a rare fund indeed) had ample room to deliver superior excess returns given the favorable excess returns in the majority of US HY industry sectors vs. US HG. Given the high yields in E&P and Supplier/Services names and high oil prices through July, it would have been a very bold call to be underweight energy down the credit spectrum.

In Euro HY, excess returns were favorable for HY vs. the US HY counterpart and vs. bunds. In the match-up vs. Euro HG, however, the Euro HY market also flunked the test in 2014 and Euro HG excess returns YTD were superior vs. Euro HY by 19 bps by year end. In other words, you did not get paid for your risks in Euro HY either during 2014.
We look at various credit metrics on a rolling basis to frame where a defined HY universe has trended since the first full year of the credit cycle recovery in 2010. The metrics news is reassuring on balance. The universe of the HY Index that rolls up into the series of metrics charts (almost 3/4 of index face value and over 1/2 the issuers) overall shows weakness in median leverage mitigated by good profitability.

In the above chart, we break issuer leverage metrics into quartiles. We order Net Debt/EBITDA from highest to lowest at the most recent quarter and then track the trend line backwards for the “same-store” universe from 2010 through LTM 3Q14 and show “how that quartile got there.” The good news is that the current low leverage quartile has been steady and rock solid.

Median leverage for the total same-store universe has risen modestly from 3.0x to 3.6x. The 3.6x number does not worry us relative to the balance of other metrics and prevailing Enterprise Value multiples that the industry teams see vs. leverage. The high leverage quartile shows the area of worry and focal point for default concerns. Like in any HY credit cycle, this one brings its share of dogs. The rise in leverage from 5.2x to 7.3x for the high leverage quartile underscores where issuer picking and seasoned managers add value.

This is the “winners and losers” process unfolding. We highlighted in past commentaries that we are past the credit peak on the balance of credit measures. The duration and forward pattern of the credit cycle is the debate.
In the EBITDA margin growth charts, we take a slightly different approach. While the total universe and median is “same store,” the high/low quartile growth rates allow for issuer migration within a constant total universe. We draw the high/low quartile lines at the “boundary” or “border” of the upper and lower quartiles. For the most recent quarter, it took 28% EBITDA growth to qualify as upper quartile and -4.8% for lower quartile. Median EBITDA growth for the total universe was 10.4%, up sequentially from 2012 and 2013 and a favorable profitability trend for the HY universe broadly.

The EBITDA growth time series reflects a cyclical pattern one would expect coming out of a downturn with higher growth rates in the early years and slower in later years. The sequential uptick in EBITDA growth across many industries is notable. Key drivers include higher spending across many industries (e.g. rising capex after an early, defensive lag) as well as a strong consumer sector (rising job count, a higher population reaching working age or higher, rising base of retirees, easier consumer credit, etc.). More credit availability and more bodies (working or retired) means higher PCE.

A bullish stock market in 2013 through today contrasts with a sharp sell-off in HY on oil sector stress in 2014. All major US equity benchmarks ex-NASDAQ reached highs in 2014 and even the NASDAQ is heading toward March 2000 highs. For the HY Index mix (a hybrid mix of large caps, midcaps, small caps, tech, international), the profit story is positive to date.
• In the sales growth chart above, we take the same approach as we do on the EBITDA growth chart with respect to allowing constituent migration across quartiles (within a *same store total universe*). As in EBITDA growth, the time series frames the “borders” of the upper/lower quartile rather than a median.

• Sales growth trends are like EBITDA growth trends in that one expects a cyclical pattern coming out of such a steep downturn and notably off the collapse and brutal inventory destocking of 4Q08/1Q09. The early 2009 plunge drove many industries to the precipice of financial collapse and a record number into default. That supports 2010 sales growth while credit markets opened up in 2010/1H11, driving even more spending and rising consumer and corporate confidence despite the 2H11 mini-panic.

• The takeaway from the sales growth chart is that sales are in fact growing and at a faster rate than 2012 and 2013 for this universe. The sales growth inevitably slows, but such growth together with resilient profit margins has been a major driver of EBITDA growth and favorable overall profitability.

• The crack on HY has been that leverage is higher and issuers need sustained earnings growth to grow into those balance sheets. It is not clear that this cycle will die of old age. It will take a catalyst to kill it. Oil is not that catalyst in our view. Many industries and consumers directly benefit. Many industries (and nations) will be hurt by commodity weakness, however, and that needs sorting out in risky credit and the vulnerable issuers/securities.
The high leverage quartiles of the B and CCC tier are not surprisingly where the trouble lies. There is also a developing rating disconnect with isolated but large scale BB and BBB tier names in oil-exposed names (notably in Suppliers/Services but also at major “national flag” oil issuers, i.e. from Russia and Brazil) where there is also a clear sense of stress. But the B and CCC tiers are still the main event.

The record volume of debt issuance in 2012-2013 pushed up median leverage across the board and a subset of single B and CCC tier credits in the high leverage quartiles are showing very weak numbers and a material deterioration in balance sheets. This again revisits the “winners and losers” theme.

The high leverage quartile – with a median of 8.9x Net Debt/EBITDA – posts numbers that will ring the bell with the OCC leveraged loan guidelines but should also with bondholders. Those are ugly leverage numbers and that is where the fuse has been lit for a forward default cycle. Low maturities help.

In this leverage chart above we also add an “actual” line to the same-store line. The actual line allows for constituent migration and shows the time series of what a “typical” high leverage quartile looks like as opposed to just tracking the current issuers (i.e. same store) in the high leverage quartile back over time. The bottom line is the current leverage profile in the upper quartile is very weak by any standard.
Questions around the HY market today include whether the oil and gas industry stress mirrors the TMT crisis after the deal binge years of 1997-1999 and the ensuing default spiral of 2001-2002. Another is whether the oil price crash constitutes a “systemic event.” We say “No” on both. The TMT crisis was radically larger in scale and issuer quality much worse. We do not see the oil sector stress as systemic in terms of contagion or sweeping risk aversion. We say “No” to the systemic question given low asset risk at major banks (and overwhelmingly 1st lien) even if such direct exposure will grow as E&P and Supplier/Services issuers turn to bank lines. However, systemic risks can tie into oil-exporting nations and sovereign stress (e.g. Russia, Venezuela) and emerging market turmoil. A mitigating factor is that an oil price rebound is a production decision away in the form of any concerted Saudi or OPEC action. Venezuela is good for headlines, but there is a case that such problems make US and Euro HY interesting alternatives for relative safety vs. EM. The chart above drives home that the relative asset class exposure for the HY bond index to Energy sector developments is much lower now at 15% of face value than it was to TMT back in 2001, when combined TMT stood at over 39% of the HY index. In addition, many of the business models in TMT were beyond salvaging and were based on completely concocted revenue models. Oil revenue is under pressure, but longer term are very viable business models as prices recover. The question is when prices recover and who falls victim.
• As low as the LBO volume was in the US, the fact remains that total M&A volume was back near the highs in the US and back to very high levels globally even if short of 2006-2007. The above chart tracks target by domicile, and the US is showing the influence of a wave of M&A transactions across wide range of industries. Low all-in costs on high grade debt funding is a significant catalyst to deal flow.

• If one views low-coupon long bonds as “cheap equity” there is a reason to expect continued high deal flow all along the credit spectrum and especially if organic and cyclical earnings growth falters. The environment is friendlier to HG debt-financed M&A than HY and LBOs, but the latter is getting done in the new year already. If core businesses do not bring earnings growth the ability to drive valuation via M&A and financial aggression is clearly available. M&A and shareholder incentives have already been a major factor in growing the high grade universe to a record face value total outstanding ($6.5 trillion in the US HG and Euro HG combined with $4.7 tn of that in the US HG index, up from $2.0 tn at 2Q07).

• The industry mix varied but the global M&A volume in 2014 was led by Oil & Gas related deals with Pharmaceuticals 2nd, Cable 3rd, Nonresidential Real Estate 4th, and Health Care Equipment and Suppliers 5th. A long tail continues from there with Food & Beverage, Telecom Services, Banks, Power, and Chemicals rounding out the global Top 10.
• Watching the rolling cumulative returns of risky assets broadly across both debt and equity is a good exercise and a reminder that time horizons vary beyond the ritualistic annual return forecasts. This chart looks at total returns (note: assumes reinvestment) on asset classes across the “risky asset bucket” of debt (US/Euro HY, Emerging Market Corporate and Sovereign USD benchmarks) and in equities (US benchmarks across large, mid, and small caps plus tech, Europe, and Emerging Markets).

• In looking at the returns over time, HY benchmarks lost some of the edge they had vs. equities over longer time horizons (10 yr, 15 yr) as stocks turned in a very strong 2, 3, and 5 year stretch. HY total returns still are a reminder of the power of compounding coupons even in a market with record low interest rates. In the case of HY, that is especially in a market with record low interest rates since high quality fixed income offers so little in real yields while presenting a higher level of interest rate risk in long duration benchmarks.

• The twist in the story on the long duration fixed income benchmarks after 2013 is that the deflation/disinflation bug and European QE talk in fact rewarded interest rate risk in a material departure from the UST consensus. Besides promoting humility in predicting yield curve moves and reminding everyone why they diversify their portfolio, the diminished fear of yield curve risk undermined a key demand driver for HY bonds and leveraged loans.

<table>
<thead>
<tr>
<th>Global Asset Class Returns</th>
<th>Feb 20, 2015</th>
<th>Short-Term Cumulative Returns</th>
<th>Multi-Year Cumulative</th>
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<tbody>
<tr>
<td></td>
<td>YTD</td>
<td>1Mo</td>
<td>3Mo</td>
</tr>
<tr>
<td>US High Yield</td>
<td>2.3%</td>
<td>2.3%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Euro High Yield</td>
<td>2.3%</td>
<td>1.8%</td>
<td>2.4%</td>
</tr>
<tr>
<td>EM Sov BBB &amp; lower</td>
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<td>0.8%</td>
<td>-0.6%</td>
</tr>
<tr>
<td>EM USD HY Corp</td>
<td>0.8%</td>
<td>3.9%</td>
<td>-4.3%</td>
</tr>
<tr>
<td>S&amp;P 500</td>
<td>2.8%</td>
<td>4.6%</td>
<td>3.3%</td>
</tr>
<tr>
<td>NASDAQ</td>
<td>4.9%</td>
<td>6.7%</td>
<td>5.8%</td>
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<tr>
<td>S&amp;P Midcap 400</td>
<td>4.6%</td>
<td>6.4%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Russell 2000</td>
<td>2.4%</td>
<td>5.3%</td>
<td>5.6%</td>
</tr>
<tr>
<td>FTSE EUROTOP 100</td>
<td>11.3%</td>
<td>6.9%</td>
<td>11.8%</td>
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<tr>
<td>STOXX 600</td>
<td>11.9%</td>
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<tr>
<td>MSCI EM Index</td>
<td>3.1%</td>
<td>2.9%</td>
<td>-0.1%</td>
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<tr>
<td>Hang Seng</td>
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<td>NIKKEI</td>
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<tr>
<td>Shanghai Composite</td>
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<td>32.4%</td>
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<tr>
<td>BOVESPA</td>
<td>2.5%</td>
<td>7.0%</td>
<td>-4.1%</td>
</tr>
</tbody>
</table>

Source: CreditSights, BoA/ML, S&P/LSTA, MSCI, Bloomberg
Note: EM Sov BBB & lower is USD EM Sov BBB & lower index
• This chart frames up the long-term average annual total returns (assuming reinvestment) over trailing 5 year increments (trailing 5, 10, 15 years etc.). The good news is that corporate credit asset classes stack up very well including HY despite the craziest 10-15-20 years in credit market history (the ongoing Eurozone sovereign crisis, the systemic bank crisis and bailouts of 2008-2009, the TMT bubble and the record duration for a default cycle that came with it, multiple emerging market crises, LTCM).

• The new starting points in yields in the current market will make life more difficult for fixed income to measure up to these past annual returns, but the same could be said for equities and numerous asset classes. With an annual returns for US stocks from 1980 to 1999 of just under 18%, it is not as if other risky asset classes will not have their challenges to match past running returns. The best years for China specifically and the “BRIC trade” generally may be stalled for some years so that generates question marks also.

• As pension funds, insurance companies, wealth advisors, and a full range of retail savers run through their asset allocation decision points, the trade-off of various portfolio parameters (risk appetites, total return expectations, income and cash flow needs, secondary liquidity) will still be on the menu. The HY bond index with a par weighted coupon of just under 7% in a world where the 5Y UST is the high yield government alternative drives home that fixed income decisions are not easy by any stretch in an income-starved world.
• This chart highlights the very wide gap between the BB and CCC tier LTM total returns (through 2/20/15). Over the past year, the BB tier of US HY posted total returns that were 8.8 points ahead of US CCCs. In Euro HY, the favorable gap for BB total return was 10.5 points higher than Euro CCCs.

• The BB tier performed well vs. HY on stable credit fundamentals and good demand (including HG investors stepping down) and also benefited from longer duration in a rallying UST market. In contrast, the CCC tier was crushed in both US HY and Euro HY with the lower tiers of risk showing much weaker prices as the oil price collapse worsened.

• The pain inflicted on the CCC tier in both markets was concentrated in the trailing 6-month period in the chart above with a -5.8% total return for US CCCs and -7.3% for Euro CCCs. That price action took on more of the profile of an equity market correction than a market where interest rates and the curve were supportive of debt.

• The CCC index in the US dropped around 14 points through year end as the panic around oil prices and redemptions flared up although we have seen a modest CCC tier rally YTD 2015.
As we look at total returns across the HG benchmarks in the US and Europe, the news was surprisingly good for those who stayed the course favoring interest rate risk. Heading into 2015, the risk of Fed hikes, potential curve shifts, or bear flatteners will be an overriding factor in US HG returns.

When one frames the fear of the UST curve coming out of 2013 and the negative returns generated by the US HG index that year, the trailing 1-yr return of 6.4% is a remarkable turnabout. The impact of 2013 is evident in the fact that the cumulative 2-yr return is barely higher at 7.7%. That 7.7% over 2 years trailed HY at 10.9%. Over 3, 5, 10, and 15 years, HY outperforms HG in more material fashion given the coupon and reinvestment factor, but both asset classes performed quite well in nominal terms and risk-adjusted terms (based on Sharpe ratios).

The good news for yield curve risk has been even better in Euro HG despite the shorter duration of the Euro HG index (4.9 years for Euro HG vs. 6.9 years for US HG at most recent date). Calling the curve is a very tricky business as so many investors and economists have found out over the cycles. The inflation/deflation debates will be an academic hot button in the future just as they were since the 1970s and through the Volcker and Greenspan years.

As we head into 2015, it is a safe statement that the ECB will remain more supportive of the Euro HG curve than the Fed will be in US HG.
In terms of the “relative yield” equation in US HY, we use this chart to frame the incremental gross yield an investor receives for moving from a high quality basket of “default exposed assets” (i.e. the investment grade index) to a higher risk basket of corporates (i.e. the HY index). The formula is (HY index YTW minus HG index YTW divided by HG YTW). The concept is simple enough and can be used to look back at past peaks in credit.

The recent differential of 94% is high in the context of multiple credit cycles and the 77% average. While we appreciate the law of small numbers comes into play, we would flag the fact that the “small number” in the denominator is in fact one of your primary investment alternatives and also one that has a much more significant interest rate risk component (duration adjusted comparisons are even more favorable to the HY market).

While those addicted to the Greek alphabet might bemoan the simplicity of the idea, the basic relationship is at the core of financial repression and reach for yield. The yield you leave on the table simply adds up and the power of compounding takes over in cumulative cash returns. The skeptic has to supply the means of this relationship unraveling and the transmission mechanism to losses is needed to derail the value equation. If it is default and redemption driven losses, that is fair. If it is a curve shift, then that UST yield curve factor has to be applied to the curve in the HG asset class. Returns matter and you just cannot say “sell” without a time horizon and an alternative.
• This chart is another angle on framing HY vs. HG and again drives home that
the lows of past hot credit markets (2007, 1997) were dramatically below
current levels. The deal quality erosion and weak underwriting standards that
followed 1997 (i.e. the TMT bubble) and that were evident in the 2007 bubble
broadly (structured credit, mortgages, record LBOs) are well known.

• These relationships are hard to ignore even though they typically are. In a
series of credit cycles (TMT bubble, the credit crisis) where the term
“unprecedented” was used quite a bit, we find a heavy overreliance on
“precedents” and correlation studies in framing up what comes next. We look
at as many past relationships as possible and have a team looking at
correlations and how various factors drove patterns in defaults/losses. The
trick is not to get overly fascinated with your technical virtuosity and to make
sure you look at what was not included but that you know conceptually was
crucial (e.g. systemic risk and counterparty fear in 2008 and what that meant
for defaults as well as liquidity risk in the banking system.)

• In this current cycle, the role of the Fed pushing ZIRP and QE well into the
cyclical recovery breaks a lot of patterns by itself. The sovereign debt curve
plunge in developed markets is unprecedented in the HY era. The Volcker
Rule adds some new elements in a record-sized market with fewer market
makers as does stress in high GDP sovereigns. The low LBO volume but
record refi and extension in 2012-2013 for the CCC tier adds more.
Perhaps the most unusual twist in HY relative performance is the materially better excess returns in Euro HY vs. bunds than that posted by US HY vs. UST. As we detail in other slides, both HY sectors (US and Euro) have been weak performers relative to High Grade (HG) excess returns in their respective markets. Euro HY still is showing the material benefit from reach-for-yield demand (especially with QE rolling in).

Overall, Euro HY index performance has the benefit of a disproportionately high mix of BB tier paper. The BB tier has done well and also did relatively better in US HY. CCC paper has been battered in both markets.

The weaker state of EU economies has perplexed those expecting better relative performance in US HY than Euro HY. Euro HY has a very low bar to clear in posting superior excess returns than the USD market given negative short yields in bunds and record low rates across sovereign alternatives (ex-Greece). A lot has to go wrong to generate negative excess returns in Euro HY, which also has benefitted from the lack of a HY E&P sector and lower exposure to the some of the more beaten down commodity sectors.

In the end, HY investors generally did not get paid for their risk in either market in 2014 as both US HY and Euro HY came up in negative territory vs. HG. The key to getting paid for the risk incurred is now more tied to industry and issuer selection than we have seen to date in this credit cycle.
Another angle is to look at excess returns across credit tiers to see if investors got paid for the incremental risks along the credit spectrum from investment grade layers downward. In the above chart, we track relative excess returns for the BB tier vs. the BBB tier (BB excess return – BBB excess return) along the speculative grade divide. While the magnitude of excess return to be expected at this point in the credit cycle can be debated, the BB tier for 2014 was 80 bps ahead of the BBB tier and actually ranked #1 of all the tiers during calendar 2014 ahead of #2 single A tier.

The chart also shows notable swings during 2H14 as the BB tier intermittently underperformed and outperformed BBBs before in the end turning in a decent cumulative excess return performance YTD.

Such a pattern as that demonstrated above feeds the view that “buying on dips” paid off in the relatively more liquid BB HY names. The redemption waves that began to cycle into the market in 2H14 could very well have been a catalyst for selling more liquid higher quality BB names. The downside swings in the BB names could have created opportunities. There was certainly more than a few anecdotal stories of liquid high quality names (e.g. Ally, GM) getting whipped around near term before recovering.

As we detail in the credit metrics slides herein, the BB tier remains in very good financial shape across a range of credit measures.
The news with the CCC tier was radically different than the BB tier so the running excess return performance framing the high end vs. low end of the HY tiers was very unfavorable for CCCs. The excess return gap between the CCCs and BBs widened materially and kept on widening.

The cumulative CCC excess return fell short of the BB tier by 595 bps in the end with the low price and weakest relative performance generated around mid-December as oil went into a freefall and posted the largest monthly decline in December after brutal months for oil and higher risk credits in October and November.

The chart above basically frames the upper and lower bounds of HY to highlight relative compensation you received for taking more credit risk. As we detail from numerous angles (excess return, total return, CCCs vs. equities, etc.) the year 2014 was an ugly one for the lowest end of the HY spectrum and the second half of the year extremely so.

The good news for CCC tier demand is that more capital is flowing back into the low end of HY from hedge funds and distressed debt players who had stepped out of the picture back before the “par-plus” HY market of sub 6% yields. Sorting out the CCC’s and weakest B’s that have overreacted on the downside is an ongoing process in the market.
The above chart plots cumulative excess returns for the HY Index as well as for the E&P sector and Metals and Mining (ex-Steel). HY overall was doing quite well through midyear as the year progressed and energy was doing well also even if Metals/Mining lagged on coal weakness. Yields reached an all-time low in June (4.85%) and HY spreads touched down to a frothy +335 bps (still well above the 241 bps of June 2007). The market was priced to perfection in terms of risk, flows, and demand, and nothing could go awry. Oil changed that in a hurry.

The mix of demand weakness and aggressive Saudi supply policies created a supply-demand imbalance that wreaked havoc in the spot markets, drove bearish speculative action higher, and sent E&P bonds tumbling on negative cash flow and balance sheet capacity fears.

The above pattern of excess returns for a few major commodity-base sectors says a lot visually and highlights the pace of the drop-off after the September quarter, when oil (WTI) was still north of $90. The sheer size of the E&P sector overwhelmed the HY aggregate excess returns before even rolling in some major pockets of weakness in Metals and Mining (ex-Steel). In Mining, coal and iron ore names took a severe beating as the problems around global growth undermined a broad range of commodities.
The new Top 50 list for 2015 adds a few new names for this year’s running tally. As in 2014, the year started off with subpar excess return performance in the month of January, but an early year risk rally seems to be underway in early February. Equities got off to an even slower start in 2015 with the S&P 500, NASDAQ, and Russell 2000 all posting negative total returns in January.

As highlighted in other running excess return charts herein, the last few years in the credit cycle underscore that it is good to restrain early optimism on 1Q14 rallies or for that matter pessimism on widening. When the new fiscal year gets under way and balance sheets open up again, P&L hope springs eternal. Thus the early Feb spread performance after the negative January does not mean much at this point. We keep in mind that the 2014 market showed a very strong spread rally through midyear before the implosion of oil markets. Oil is the main ingredient on the prospects for any recipe for quality spread tightening in the lowest tiers. Oil slaughtered CCC spreads in 2H14, and will remain the key factor in 1H15.

The headline swings in coming weeks and months will be dominated by oil price speculation, the unfolding Greek drama, and the escalating conflicts in the Ukraine among others. The handicapping of Fed action on the front end of the curve goes on and will remain a matter of to and fro debate as economic indicators roll out.
This chart shows calendar 2014 returns (total returns, excess returns) for the Top 40 BB tier names in the Energy Sector (note: issuer total face value drops off sharply toward lower end of Top 40). The BB tier in Energy shows a heavy weighting of Gas Distribution (e.g. Pipelines, Midstream, Processing) relative to the B/CCC tiers, but the E&P sector was still the largest slice of BB face value ($44bn for E&P vs. $39bn Gas Distribution at 12/31).

The greatest price pain in the BB tier was felt by Supplier/Services names with some negative total returns in the high-single-digit and double-digit area. Examples include Precision Drilling (PDCN) at -12%, Hornbeck Offshore at -10.5%, and Petroleum Geo-Services at -15.3%. Just below was Atwood Oceanics (offshore drilling) at -9.0% and Unit Corp at -9.4% (hybrid mix across drilling, E&P, and midstream). Weaker BB E&P performers include Baytex Energy at -7.7% (85% oil and liquids, a mix of Eagle Ford and Canadian heavy oil and oil sands exposure) and MEG Energy at -5.6% (“pure play oil sands” company).

The stark downside price moves across BB tier Supplier/Services names even in the higher end of the HY spectrum was almost instinctive since the immediate reaction of the E&P companies will be to effect heavy cuts in capex and to seek immediate concessions along the supplier chain. That comes right off the revenue line for these issuers. Capacity excess could further exacerbate price pressure and lower utilization in various segments.

### 2014 Returns: 40 Largest Energy BB Issuers

<table>
<thead>
<tr>
<th>Ticker</th>
<th>Sector</th>
<th>Ticker</th>
<th>Sector</th>
<th>2014 TR</th>
<th>2014 ER</th>
<th>2014 TR</th>
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</thead>
<tbody>
<tr>
<td>COP</td>
<td>BB1</td>
<td>CHK</td>
<td>BB1</td>
<td>$8,540</td>
<td>5.0%</td>
<td>$5,089</td>
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</tr>
<tr>
<td>CMPI</td>
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<td>GS</td>
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</tbody>
</table>

Source: CreditSights, BofA/MI, Indices: note: 50 largest issuers that were in the index for all 12 months during 2014, data through 12/31/2014 rating as of 3/2/2014.
The BB Energy sector is home to the majority of the Gas Distribution issuers that post inherently less volatility than the E&P and Supplier/Services names in the market. With higher ratings and more balance sheet flexibility, the BB tier names have more room to make adjustments to the weaker operating environment. At the same time, more issuance and refinancing will keep pressure on Energy sector spreads as new issue ebbs and flows, structural subordination increases, and more downgrades roll in.

The ongoing descent of more eroding BBB tier names into the BB tier (notably large issuers out of Russia, Transocean (RIG) in the Services sector, Petrobras out of Brazil, etc.) will keep swelling the middle and upper tiers of the HY universe as Energy investment alternatives (whether the issuers are classified in the US HY Index or otherwise).

The chart above looks at YTD February (2-20-15) results for the BB tier. The numbers are not alarming for the Top 40 BB Energy names with only 3 BB index names posting negative total returns. With the ranks of BB energy swelling from the top down, more pressure lies ahead (Note: this list is only for names that have been in the BB index since the start of the year). January 2015 showed 8 names with negative total returns (January results are on the next slide), so the HY rally in February provided ample relief with the exception of the sliding prices of the DCP Midstream junior sub bonds (the senior debt is still in the BBB index).

### YTD 2015: Returns: 40 Largest Energy BB Issuers

<table>
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<tr>
<th>Ticker</th>
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<th>($mm)</th>
<th>TR YTD</th>
<th>ER YTD</th>
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<tbody>
<tr>
<td>CCPL</td>
<td>Pipelines BB</td>
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<td>3.7%</td>
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<tr>
<td>CHK</td>
<td>E&amp;P BB1</td>
<td>7,928</td>
<td>3.2%</td>
<td>2.7%</td>
<td>1.9%</td>
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<tr>
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Source: CreditSights, BofA/ML Indices note: 40 largest issuers that were in the HY index for all months in the YTD period data through 02/20/2015
The Energy sector bond price action in January was somewhat muted in the BB tier in the context of the unraveling of E&P and Supplier/Services names that was seen in 4Q14. Among the worst performers was the long-dated junior sub bonds of DCP Midstream at -4.6%. DCP took another downgrade as Moody’s joined the other two major agencies in the BB tier while leaving the bonds on watchlist for additional downgrades.

Citgo Petroleum was also roughed up at -3.8% for the month as the ongoing Venezuelan meltdown was compounded by the attempt to execute on a major secured loan and secured bond financing (for refinancing and dividends) that put further pressure on the 1st lien 6.25s of ’22 ($650 mn outstanding). Despite single B tier ratings from S&P and Moody’s, Citgo still was a BB constituent in January based on its average ratings (including Fitch). As of February, Citgo moved to the B tier.

Price erosion continued in January at Hornbeck Offshore (-2.8% total return for the month) as the Supplier/Services sector remains under siege. In E&P, Denbury Resources (DNR) weakened (-2.2%). DNR has a favorable hedging position but also has the highest oil mix of the E&P debt peer group. DNR has guided to one of the industry’s largest % capex cuts and left its dividend flat to support cash flow.
January energy bond performance did not reflect a wellspring of new year optimism as oil sank to a late-month low ($44 handle on WTI) ahead of a fits-and-starts rebound that took the market back closer to a 50-handle range. During January, 14 of the Top 50 B/CCC names posted double-digit negative total returns. While a cross-section of bonds have started a rally in February, the results are ugly in the context of mainstream HY investors (vs. distressed debt investors). Holding is easier than stepping in and buying for many funds given the very low bond maturity schedules.

The market gets a full menu of price expectations from OPEC heads (non-Saudi) with the OPEC head talking about $200 oil. Consistent with production planning game theory, some Saudi leaders are talking about $20-$30 oil potential if needed and yet other Saudis are saying $100 oil will never come back. The heads of major multinationals are cautious with BP essentially saying sub-$60 is the logical planning level. Speculation and jawboning will be the order of the day, and market confidence can fade in the face of that range of price chatter. Looking back to July 2014 ($107 WTI), it is hard to find oil industry leaders predicting a collapse to $40-handles in 6 months.

A wide band of possible outcomes for a sector mired in geopolitics translates into inherent bond price volatility until Saudi planning (which could be immediate or protracted) and/or demand trends (an inherently slower process) is clear. It is a very tough call in a world “long missiles” as well as long oil.
• This chart is a yield history using 5Y UST instead of HG in framing what the HY index provides in incremental yields. It is a ratio of the HY Index to the 5Y UST. With the 2H14 pain in HY, the recent level of 282% is back to well above the median of 178% and above the long term average of 262%.

• No one needs reminding that Fed policy is whetting risk appetites, but the chart plots the extraordinary dislocations in the UST market vs. HY in 2012 especially (as QE rolled in and ECB action got more aggressive). The term “credit bubble” was bandied about since the fall of 2010 and again in the fall of 2012 with more than a few models screaming “rich, richer, richest” before a massive rally in HY. That is worth remembering even if the market is clearly moving further along in the HY credit cycle (and in the Fed policy cycle) and a growing subset of HY deals are showing financial wear and tear. Cash coupon collection and reinvestment since 2010 and 2012 are on the books after models signaled rich but did not tell you where to go or for how long. We address foregone coupon risk in other slides.

• The “law of small numbers” effect is certainly to be kept in mind in such relative yield relationships, but the fact that the UST represents an investment alternative and serves as the benchmark for risk premiums makes the relationship specifically relevant to HY investing. It is not the same principle as comparing a YoY earnings distortion. It is about investment return differentials subject to your forward view on risk and current pricing.
The pain in HY and Emerging Markets is captured in this monthly spread chart detailing spread moves since the end of June 2014, which marked the cyclical trough in spreads (+335 bps HY OAS) and the all-time lows in absolute yields for the US HY index YTW (4.85%).

We saw a logical and rational widening in spreads across all high risk credit asset classes with a major quality spread widening from the lowest tiers radiating upward. The US CCC tier, the Euro CCC tier, and the HY Emerging Market Corporate names took the brunt of the price pain. US CCCs are wider by 242 bps since the end of June 2014 (through 2-20-15) with Euro CCCs wider by 637 bps, and the EM Corp HY index 339 bps wider.

The case can be made that once one major industry sector (in this case the largest industry in the form of Energy) sees a spike in risk, the lowest tiers of risk all re-price along with it. The decline in the US CCC index from over par in July to a low of 86 in December reflects that broad re-pricing pressure.

The pattern of quality spread widening is consistent with a more defensive posture on risk by market-makers and investors alike with the US CCC tier 242 bps wider on a cumulative basis from the end of June to late February (2-20-15), US Bs 140 bps wider, US BBs 46 wider, and across the speculative grade divide the BBB tier out by 47 bps. As we detail in the excess return slides herein, the BB tier has seen more sell-offs and bounce-backs while 2H14 was steady pain in CCCs.
• In the above chart we look at the trend line in HY spreads across the credit tiers (BB, B, CCC) since mid-2012 for a frame of reference. We chose mid 2012 (6-30-12) in this chart as a starting point since the summer of 2012 is when the Fed and ECB turned most supportive after the turmoil of 2H11 and spread tightening really hit the accelerator across all credit tiers.

• Spreads subsequently troughed across the board in the BB, B, and CCC tier in June 2014. The 2H14 swoon took the worst toll on the CCC tier. CCC tier OAS is 254 bps wider rom the June tights to 881 bps at the most recent date on the slide (2-20-15). That is 270 bps inside the July 2012 wide point for the period from 2Q12 plotted above. In contrast, the BB tier is 63 bps above the June 2014 tights and the B tier 162 bps off the June 2014 lows.

• The idea of trying to call the CCC tier rich or cheap vs. the B and BB tier is a tricky one since any hint of risk aversion or a turn in credit fundamentals sends spreads by credit tier wider in a broad-based quality spread widening with the CCC taking the worst beating.

• The flip side can also be true if the right set of conditions play out ahead. For the CCC tier, the main driver will be any sustained shift in oil prices or the supply-demand imbalance. Energy sector bond pricing was the primary culprit that infected the CCC tier (14 point drop in the CCC index from July to December) and drove risk to re-price broadly on the low end. A rebound turns on a discretionary move from the Saudis, which seems unlikely near term.
• This spread walk for LTM (last twelve months) period recaps the widening that unfolded with higher volatility and extreme price pain in the second half after a very solid first half. The end result and the cause is no mystery at this point as spreads over the LTM period were out by over 100 bps to 526 bps. As noted in the footnote spreads have decreased by 73 bps in the February MTD period to 453 bps.

• The pattern of big swings has been picking up along with risky asset volatility generally including emerging markets and stocks. In US HY, the year 2014 saw two months with moves of 50 basis points or more and both were wider.

• We would highlight that swings of 50 bps or more is not new to this cycle. We saw 5 such months in 2010 (4 tighter and 1 wider by 137 bps), 5 in 2011 (3 wider, 2 tighter), and 4 in 2012 (3 tighter, 1 wider). The year 2013 saw only 2 months of 50 bps or more (1 wider in the taper tantrum and 1 tighter the following month).

• Note: We review annual spread walks each period from 2010 in the HY Slide Pack.
The above chart details the spread widening by broad industry sector and the wider move in spreads by year end *almost* across the board (ex-Banking and Automotive). As detailed in the excess return slides elsewhere in this presentation, it takes more than a little spread widening to offset a HY issuer coupon and drive a negative excess return.

The Energy sector (heavily tied to E&P and Suppliers/Services) and Leisure sector (primarily Caesars) took the most spread pain and spread widening did in fact drive excess returns into the red for both sectors (although the Gaming sector narrowly and Leisure returns broadly were dominated by issuer-specific stress at Caesars and presented less of an industry-wide problem). For the E&P companies, the dollar price plunge and negative returns (total and excess) was particularly pronounced as detailed in numerous earlier slides.

The main takeaway from the divergence of spread moves detailed above is that many pockets of HY did in fact remain resilient in the face of a broad re-pricing of risk on the low end of the credit spectrum. The heavy concentration in a few industries was one key driver but across other industries it also fell harder on the CCC tier names.
This chart tracks the quality spread comparison for the BB vs. B tier and for the B vs. the CCC tier. The time series essentially tracks the incremental spread the investor receives for each move down the credit spectrum. The basic formula is (B tier OAS – BB OAS) and (CCC OAS – B OAS). Distortions in comparability for such a time series involve issuer upgrades/downgrades or constituent migration out of the index entirely on default (i.e. exits from the CCC index such as Caesars and TXU, which can drive artificial “rallies” in the CCC tier).

The main trend in recent months has been the steady widening of quality spreads all along the credit spectrum but notably on an intra-HY basis for incremental spreads across BB-B and B-CCC. During June 2014 the quality spreads for the B-CCC comparison had reached levels more consistent with what we saw in the 2006 bubble periods even if not yet back to 2007 levels. The 290 bps B-CCC level at month end June 2014 looked more like the 2Q06 average of 294 bps but was well above the 2Q07 average of 185 bps. The recent 392 level (2-20-15) is slightly below the first 2 quarters of 2008. We detail those histories in the HY Slide Pack.

The BB tier was the best relative performer in excess returns in 2014, but the quality spread widening across the BB-B tier to 194 bps is consistent with the first half of 2008 and dramatically above the 2Q06 average of 34 bps during the credit bubble (73 bps in 2Q07).
• We see that backward-looking frames of reference only get you so far given a HY history with only 3 very distinct default cycles. We find it inconsistent, however, when people bemoan the idea of “backward looking” and then use models with backward-looking factors. The compare-and-contrast exercise sharpens the analysis whether in framing spreads, macro cycles, yield curves, the deal quality backdrop, systemic events, an ever-shifting industry mix, or other risk wildcards ahead (Volcker Rule, OCC guidelines).

• For intra-HY quality spreads (i.e. CCC-B, B-BB), factors cut across industry mix, asset demand (i.e. the “BB is the new BBB” theme and “CCC is the new B, not the old equity”). Current B-BB quality spreads (194 bps) are above the post-1996 median of 163 bps, above the long-term average of 186 bps and just slightly below the 2H11 sell-off (199 bps). We attribute that in part to solid demand for BBs and less regulatory distortions at the BBB-BB divide than evident in past cycles. The BBB to BB divide is increasingly viewed as another step along the risk-reward continuum and less of a junk abyss.

• The current CCC-B OAS of 392 bps is below the long-term median (447 bps), well below the long-tailed average (602 bps), wide to the 1H04-1H07 credit boom (363 bps), and just below 1997-1998 credit peak (400 bps). With the February 2015 rally, we are again materially below the 504 bps average that the market saw in the 2H11 systemic whipsaw.
Looking at HY-HG and BB-BBB quality spreads during this credit cycle rebound (using 2010 calendar year to current), the wide range from the 2H11 post-systemic peak to the 1H14 spread trough is evident.

The peak-to-trough range on HY-HG quality spreads stands at 410 bps (638 bps peak – 228 bps trough). The recent 315 bps level reflects a 87 bps widening off the June 2014 lows.

For BB-BBB quality spreads, the range since the October 2011 peak stands at 287 bps (376 bps peak – 89 bps trough). The recent 104 bps level reflects only a 15 bps widening off the March 2014 lows as BB demand remains relatively firm and the BBB tier has had its own set of issues.
This chart looks at quality spreads for the US HY vs. US HG index and also for the narrower speculative grade dividing line between the BBB and BB tier. The quality spreads equation is simple enough: (HY OAS – HG OAS) and (BB OAS – BBB OAS). They measure the incremental spread received for taking on more risk, e.g. moving from the HG index bond basket into the lower quality (higher risk) HY index or from the BBB tier into the BB tier.

We break out the quality spread data for a range of notable time periods and rolling time horizons. As much as past is not prologue, comparing economic and market risk backdrops is an interesting exercise.

At 315 bps, quality spreads for HY-HG are below the median of 376 bps and long-term average of 420 bps since 1996. Current HY-HG quality spreads are running tighter than the average from 1H10 and substantially tighter than the 2H11 period (491 bps), when spreads spiked with the systemic crisis potentially unfolding in Europe.

A good frame of reference is the period of 1H04-1H07 (3 ½ years) when HY-HG quality spreads averaged 252 bps, well through current levels and in a period when the UST curve was materially higher. Current HY-HG levels are above the 263 bps averaged in 1997-1998, when the TMT bubble and the Asia crisis blurred into Russia and LTCM. In contrast, current BB-BBB quality spreads of 104 bps are again through the 109 bps of the 1H04-1H07 period and just above the 95 bps in the 1997-1998 period on very strong BB demand.
• If we run the cumulative excess return time series for HY and HG across 2014, the magnitude of the swoon from the early July peak is clear enough. After running at +400 bps YTD return, the HY market YTD excess return plunged to a -444 bps lows on 12/16 before a rebound to end the year at -129 bps. The HY market saw a -522 bps excess return on the CCC tier and -202 bps in the B tier while BBs turned in a +73 bps excess return.

• The overwhelming driver of negative returns was Energy (-1148 bps), Metals/Mining (-1138 bps), and Gaming (-805 bps). No other sector was close to that type of awful performance in what was a highly dispersed set of industry results. The vast majority of industry line items were positive for the year.

• The HG market showed notably less volatility on the upside and the downside with a July YTD excess return peak of +201 bps before hitting a low of -75 bps on 12/16 and closing out the year slightly negative at -4 bps.

• The HG index has its shares of energy problems as well and notably so in the BBB tier. Energy turned in a horrid -370 bps excess return in the HG market in 2014. The good news is that the HG index is at record size and very well diversified including in the BBB tier, where the 2014 excess return was only a modest -8 bps excess return. HG saw solid results from the important Banking (+84 bps) and Financial Services (+102 bps) sectors.
• Framing excess returns for the US vs. Euro HY sectors, the absence of the industry problems plaguing the US HY market (Oil & Gas, Metals/Mining) and the scale of a few issuer-specific crises (e.g. Caesars) was the difference.

• A frame of reference for Euro HY with negative yields (i.e. bunds) sets a low bar for excess returns for short duration HY. The reach-for yield factor is in both markets but especially so in Euro HY as a very supportive rates policy gave way to the expectation for and eventual launch of “QE euro style.”

• The 2014 excess return for Euro HY of 218 bps vs. -129 bps in the US was about industry concentration and relative sector mix as the 4Q14 oil collapse crushed US HY aggregate excess returns. The difference was not about superior economic or issuer level credit fundamentals broadly given the favorable performance turned in by such a wide cross-section of industries in the US. There is a reason that the ECB is scrambling to be supportive, and it is not due to strong credit fundamentals in the corporate sector.

• Another notable distinction in Euro HY vs. US HY is rating mix since the Euro HY index is so heavily tied to the BB tier (almost 2/3 of the index market value vs. 46% in US HY). In Euro HY, BBs posted +373 bps excess return in 2014 vs. the Euro CCC index with an excess return of -413 bps. Whether by market value or face value, the CCC share in the US is more than double that in Euro HY. Euro B excess returns weighed in at +66 bps vs. -202 bps in the US as Oil & Gas B tier paper in the US was slammed in 4Q14.
This chart takes the worst 3 excess return performers of the Level 3 Sectors (Energy, Leisure, Basic Industry) from the earlier slide and in turn breaks those three into their more granular industry components (i.e. Level 4 sectors). The excess return results get back to the basic point that you have to keep peeling back the layers to see how HY industry groups and issuers performed and that there is a wide range of results even within the weak broader groups.

Energy is dominated by E&P and Gas Distribution with E&P doing quite poorly (for good reason given the oil price collapse) while the BB-heavy Gas Distribution industry turned in positive excess returns despite in some cases getting tagged with a broader Energy brush on some manageable knock-on effects (NGL prices etc.). Oilfield Suppliers/Services is the third largest Level 4 sector within Energy, and the sector was justifiably punished given the serious threats to the top line inherent in E&P capex cuts and the inevitable push for pricing concessions from major customers. Refining and Integrated Energy are very small subsectors.

For Basic Industry, it is all about stress in Metals/Mining (ex-steel) and notably weakness in various coal credits (e.g. Peabody) and iron ore names (notably Cliffs Natural Resources). Forestry/Paper, Building Materials, and Building & Construction turned in positive numbers.

Leisure weakness was in substance all about Caesars and Gaming. In contrast, Hotels and Recreation & Travel were in the black.
• It is useful to look at the health of various high grade sectors that are important in framing risk all along the spectrum into HY. During 2014, Financials ranked as the best performer of the three main group in HG with excess returns at +87 bps in 2014 vs. -56 bps for Industrials and +44 bps for Utilities.

• HG had its share of pressures in a few key sectors during 2014 (notably Energy and to a much lesser extent Telecom) but overwhelmingly the industry sectors have been solid performers despite subpar excess return in “Industrials” (essentially all non-financials and non-utilities). Among the main risks in Industrials for HG was high debt-financed M&A. Low rates and a very deep HG market provide some positive event risk symmetry for HY credits that could be part of the M&A wave in some key industries. Oil & Gas and Health Care broadly were the two busiest sectors in the US (and globally). The appetites are there to acquire and the banks and HG bond market are there to backstop M&A and refinancing.

• The superior performance of US Financials broadly highlights the market perception (which we see as supported by reality) that bank health is sound and asset/funding risks are much lower than similar stages of past credit cycles (think 2007-08, 1998-99, and 1989-90). That holds true for the global HY bulge bracket. Whether it be the major banks or those on the other side of syndication, a healthy bank system is a positive factor at this stage of a HY cycle in its 6th year. That was not the case in past credit cycle peaks.
We looked at Net Debt/EBITDA for HY in a separate slide, but the Total Debt/EBITDA metric is significant by itself. “Total Debt” leverage matters just given the fact that the use of the cash is not predetermined and cash domicile can vary (onshore vs. offshore). The headline value of the Total Debt/EBITDA metric, however, is now its visibility as a focal point for the OCC Guidance on Leveraged Lending. The theory is the OCC is taking aim at bank profitability to reel in both cov-lite structures and leveraged lending.

The focus on a 6.0x Total Debt metric is prompting debate over the merit of a single leverage number across such a wide range of industries with widely varied EV multiples, cash flow volatility, and asset support. The chart drives home that the high leverage quartile is above the 6.0x with an upper quartile median of 8.0x. The overall median is 4.3x and the low leverage quartile is 2.1x. (Note: the OCC rules go well beyond this metric).

A recurring question will be to what extent the OCC rules will interfere with refinancing activity of loans already in the market and if that might cause secured credit contraction to spill over into the unsecured bond market or the leveraged equity market. The silver lining is that such a rule can be a braking influence on the late-stage “crazy deal” cycles that characterized periods such as 2007 and 1999. Arguably, the years from 1987 on was one big crazy deal cycle until Drexel collapsed and hung bridge loans at the securities houses back in the Glass-Steagall years brought the first HY wave to an end.
The part of the story that works best in supporting a more constructive view of HY is the trend line in profitability across EBITDA margins, sales growth, and how those two combine to drive EBITDA growth outright.

The above chart plots the EBITDA margins highest to lowest and backtracks the margins for the high/low margin quartiles and median on a same-store basis. The trend line is self explanatory as the universe shows a very stable and favorable median EBITDA margin over 2010 to LTM 3Q14. The highest margin quartile is likely to come under pressure in coming quarters given the high representation of E&P and energy issuers. The low margin quartile has seen its share of cyclical pressure points and global competition. Watching how international currency translates into pricing pressure or softer volume on trade flows will be another area to watch.

Note: “Same-store” contrasts with “actual” given the changing mix of the index over the years on rating migration (up/down), defaults, mergers, etc. “Same-store” focuses on the index and universe of credit as it exists today and tracks how that universe got to where is positioned financially now. It also removes the distortion of industry and issuer mix trends. Different industries can comfortably carry different debt loads consistent with EV multiples for that industry. Different industries also can have widely divergent margin profiles, e.g. higher margin pharmaceuticals or software vs. lower margin retail or cyclical manufacturing. Same-store removes that distortion.
• An interesting twist in the theme of rising leverage is that median interest coverage in this universe nonetheless ticked up slightly to 4.1x. That is a function of solid EBITDA trends together with lower all-in coupons. The coupon factor and better coverages result from any combination of the Fed-engineered yield curve shift since early 2010 (see Yield Curve slides), tighter HY spreads in the record new issue wave, a liberal use of leveraged loans in a ZIRP world, and a record refinancing-and-extension cycle that included a robust and historically distinct refinancing cycle for the CCC tier.

• Extended liabilities at lower coupons frustrates the perma-bears, but it is a self-fulfilling prophecy where the credit cycle gets extended in duration and coupons and/or reinvestment keep building asset value as cumulative returns stay strong over a longer time horizon. Some of these HY issuers will end up on the bankruptcy court steps at some point, but the time that is bought in all of this refinancing activity, lowered maturity schedules, and through the process of locking in lower coupons allows many to live to fight another day.

• The extended credit cycle – now in its 6th year – allows for a full range of scenarios to be handicapped across regional/global economic growth, industry trends, or issuer-specific factors. The oil and gas cycle went bad along with some others, but numerous industry groups (telecom, tech, banking and finance, consumer credit, autos, homebuilding, etc.) are going through a full range of trends of their own. Many of those trends are favorable.
In the next few slides we look at the Net Debt/EBITDA time series across the credit tiers of BB, B, and CCC. In addition to the high leverage and low leverage quartiles on a same-store basis, we also look at an “actual” line that allows for migration of constituents across the quartiles.

Adding the “actual” line drives home that the current high leverage quartile for the BB tier is stronger than the “typical” high leverage quartile with the 4.8x comfortably below the 5.3x of 2010. The same-store issuer group that is a focal point currently has trended up on a same-store basis to that 4.8x from 4.4x.

The median for the entire group at 2.7x only marks a minor uptick while the low leverage quartile in our view posts investment grade leverage metrics. In other words, the largest tier (by face or market value) of the HY market is quite strong.

Net debt/EBITDA trends require the analyst teams to peel back the layers across the moving parts of cash, debt, and EBITDA. For some companies, the increase is tied to spending down cash (capex, shareholder enhancements, M&A etc.) or increasing debt. In other cases, EBITDA trends can be the difference. The latter risk factor (EBITDA) serves as the pivotal variable around the issuers’ ability to “grow into their balance sheets” and reduce or stabilize higher leverage.
The problems become more apparent as we move into the B and CCC tier and see the trend in the higher leverage quartiles. The chart shows the rise in the same store metrics to 7.3x 3Q14 LTM from 5.1x in 2010.

That 7.3x is not an atypical high leverage quartile metric as noted in the range of 7.0x to 7.4x for the periods presented, but trend clearly is an unfavorable one.

The median for the entire group has ticked up more materially than what we saw in the BB tier with the median rising to 4.0x at 3Q14 LTM from 3.2x at 2010.

The low leverage quartile stands at 1.5x in a more or less steady sideways move from the 1.6x in 2010.
• The CCC tier is where default rate risk has historically been exponentially higher (literally) than the BB and B tier. The direction of leverage metrics in the CCC tier is adding to the worry. As noted in the chart, the high leverage quartile is showing Net Debt/EBITDA running well above historical levels and getting into a range that is materially worse on a same-store or actual basis.

• The CCC universe has some limitations in our study given the high mix of companies that are private and/or where we cannot get the disclosure to generate the required metrics. Our sample includes approximately half the face value of the US HY CCC universe (vs. 87% of the BB tier and 68% of the CCC tier) but just over a third of the number of the HY CCC issuers by count (vs. 75% of the BBs and 54% of the Bs). Regardless, the leverage numbers for the sub-group are still ugly. We combine the B and CCC universe in a separate slide to smooth the population effect, but the basic conclusion is the same, i.e. the high leverage quartiles down the credit spectrum are running off the charts.

• The median for the CCC tier is also aggressive at 6.4x, up from 5.2x in 2010, and that is likely to raise questions under the new OCC guidance. On a more positive note, the lower leverage quartile in absolute terms is not alarming at 3.4x even if up from 2.5x at 2010. The numbers in the lower leverage quartile have actually improved and moved lower since 2012 (4.0x) and 2013 (4.0x)
This chart frames the maturity schedule from the angle of credit ratings tiers and underscores the disproportionately high credit quality mix rolling off over 2015-2016. Only 1.4% of the HY index matures in 2015 in total and 85.3% of the maturities in 2015 reside in the BB tier.

The CCC tier faces minimal bond maturities in 2015 at $.7 bn or less than 4% of 2015 maturities and .3% of the CCC index. At 9.8% of 2016 maturities, the CCC tier will still be well below its overall index weighting representation of 15.4% of index face value. This cycle has been a very unusual one for the CCC tier in historical context with record refinancing and extension in 2012-2013.

Maturity schedules get more demanding in 2017 with a major jump in CCC debt maturities in 2018. A lot can happen between now and then in terms of the credit cycle and economic trends.
In this chart we look at the bond maturity schedules by ratings tiers for a few of the major trouble sectors – notably, across E&P, Oil Equipment/Services, and Metals/Mining (ex-Steel). A very low bond maturity schedule is again a feature of the financial risk profile for these sectors, and that helps feed more interest from new money (e.g. distressed, PE funds, loan platforms, etc.) and particularly at the beaten down dollar prices across a wide range of names. The lag time to major unsecured bond refinancing demands creates a lot of room for scenario spinning and the different risk probabilities assigned to some of those outcomes by the “bulls, bears, and betweeners.”

With low maturity schedules, new players are entering (or old players returning) HY as the CCC tier overall took a pummeling in 4Q14. CCCs as a group remain weak even if the CCC index has climbed off the lows after dropping 14 points as oil plunged in 4Q14.

For the troubled energy sectors (E&P, Suppliers/Services) and beaten down Metals/Mining names (coal, iron ore), these sectors are posting substantial discounts to par that have not been seen on such a wide scale in years. The pricing will garner attention even if just on the basis that there a lot of scenarios ahead to sort through on the upside and downside (Saudi/OPEC production decisions, the rate of declines in capex and eventually production in cost-intensive and shorter-lived shale properties, the swing factor of global demand, the China macro wildcard, etc.)
In this chart we drill down to the security level for the most beaten-down oil & gas exposed bonds in the HY index in shorter maturity buckets (2015, 2016, 2017). We list them across price bands by face value (and recent index mark as of 2/20). There is a relative handful of E&P bonds that have dropped into the distressed and quasi-distressed price ranges at this point. The main takeaway is the market has the benefit of light bond maturity schedules.

While we do not review the BBB tier in these slides, there is a heavier maturity schedule in the BBB tier and refinancing risk is on the rise there. For 2015, the main event on refinancing risk is in the area of loans (1st/2nd lien), adjustments to borrowing bases after the oil plunge, and a market that awaits some clarity on the relative risk appetites of leverage loan players across the banks, private equity, and various new sources of loan capital. Structural subordination will be on the rise, but the need for cash takes priority.

The deeply discounted bonds in the 2015-2016 maturity bucket involve a handful of issuers. Even if we assume those issuers all file bankruptcy, it does not move the needle much at all on the issuer or dollar weighted default rate.

As we get into late 2015 and the oil markets remain in disarray in terms of OPEC cartel production levels (Saudi aggression, Iraq and Iran overproduction to mitigate price impacts, Russia for cash flow needs, etc.) or slower than expected shale declines, then the well-worn practice of distressed exchanges (targeting maturities 2017 and beyond) might creep into the picture.
The complaints about record low yields reached a crescendo in 2014 as June saw a 4.85% HY index YTW, an all-time low after more UST declines and spread compression. The 5Y UST declined but the curve has seen a bull flattener and an even more notable rally beyond 5Y UST.

When HY YTW fell below 5% in 2Q14, the HY market was at a point where minimum expected yields offset any discussion of relative yields. At that point, the ratio of HY YTW to HG was near the average and also vs. the UST 5Y. Quality spreads down the credit spectrum at 2Q14 had started to look more like those posted in 2006 and the market was heading back in the direction of the 1H07 bubble. Quality spreads were priced to perfection in 2Q14, but the oil price collapse that accelerated in 4Q14 was clearly not perfection.

Current yields are now back in a zone where the relative yield equation has improved with a recent HY YTW now 120 bps wide to where it stood at the June trough. That 120 bps is in from almost twice that amount near the end of January. The balance of asset risks are now worse than they were in mid-2014 given the pronounced weakness in a few key sectors (including Energy, the largest sector). A positive note is that the CCC YTW of 10.1% is supportive of issuer-specific value seekers and is slightly in excess of the long-term nominal return on equities. Post sell-off levels are attracting more attention from hedge funds, distressed debt, and PE investors in the highest risk names.
This chart shows the sharp decline in interest rates and the downward UST curve shift since the spring of 2010 as Eurozone sovereign contagion fear flared up and US jobs lagged. The cycle has since been distinguished by the unusual nature of declining interest rates into a cyclical recovery and a still-steep curve on protracted ZIRP. Rounds of QE1 (12/08), QE2 (11/10), and QE3 (9/12) kept rates low as part of the Fed’s dual mandate (jobs, prices). The 5Y UST was down by 104 bps from 12/09 to the end of 2014, the 10Y by 168 bps, and 30Y by 191 bps.

In the typical cyclical relationship across the HY bond cycles since the mid 1980s, the UST curve steepens through the economic downturn on Fed easing and then rates rise and eventually flatten through the recovery period. Then the market sees a replay of a downturn and Fed yield curve support kicks into gear again. (Note: We look in detail across the history of cyclical yield curve patterns since the Volcker years in the High Yield Slide Pack).

The traditional pattern of past years has been that spreads tighten into a recovery on improving fundamentals while rates rise on Fed action (i.e. inflation risk). That correlation (not causality) of rising rates and tighter OAS saw its pattern broken in this cycle on the timing of OAS compression vs. rising interest rates. Fed support had continued through the current recovery and more recently the deflation/disinflation wildcard has served to drive global curves to record lows with the 5Y UST higher than Italy and Spain.
The hikes/spikes of 1994 was part of the most bearish case for risk assets coming out of 2013, but 1994 scenarios have since faded as a probability or debating point with slowing global growth and the plunge in oil. Surprise hikes above consensus and the potential for negative market reactions remain fair game for those seeking to gauge how the Fed could seek to normalize the supply and demand for credit in the current market.

The Fed did not explicitly target fed funds publicly back in the “old days” of 1994 but spoke in terms of “directives for reserve pressure.” In 1994, the Fed increased reserve pressure 6 times and fed funds rose from 3.0% to 4.75%. The curve saw an ugly bear flattening with 1Y UST out by ~360 bps to 7.18%, the 5Y ~ 264 bps to 7.85%, the 10Y ~ 204 bps to 7.85%, and 30Y ~155 bps to 7.90%. Despite that Fed aggression, 1994 to 1998 were years of low defaults and favorable US economic fundamentals.

The mark-to-market pain from Fed hikes was real in the market broadly in 1994, but an important takeaway is that the risk markets rebounded sharply in 1995 (S&P 500 +37.5% return) followed by a string of very strong equity years with low HY default rates and record bond origination (low quality though it was). Another takeaway is that the Fed was wrestling with some very challenging domestic and international market crosscurrents (like today), and finding the right mix of tools was a struggle. The bottom line is that 1994 was not the year to sell HY into weakness.
As with the post-1994 risk rally, UST curve moves from 2003 to 2006 underscore that bear flatteners do not necessarily kill risk appetites. That is an important fact and notably the case in 2003-2006. Fed funds bottomed at 1% after the TMT implosion and into the cyclical rally as the market saw 5.25% fed funds by 2006 (after 17 hikes from 6/04 to 6/06).

Rates steadily moved higher well after the TMT default peak (2002). First, the market saw a massive rebound in equities in 2003 (NASDAQ +55.9% total return, Russell 2000 +47.3%, Mid Caps +35.6%, and S&P 500 +28.7%) as well as HY bonds (+28.1% return). Short rates doubled in 2004 (3M bills at ~1% 2003 to ~2.2% 2004) and almost doubled again in 2005 (~2.2% 2004 to 4.1% 2005). By 2006 (the peak calendar year of the credit bubble but ahead of the 1H07 lows in HY spreads), 3M bills stood at 5.0% and were above 5Y UST rates of 4.7%, 10Y UST at 4.7%, and 30Y at 4.8%.

As rates rose, loans spiked in share of leveraged finance and LBOs and loans set records through 1H07 before the credit cycle started to unravel. Loan market excess during 2013 showed some limited parallels to 2007, but that has been moving in the other direction on diminished rate fears.

A critical distinction in the post-1994 and post-2003 credit markets vs. today is the stage of the credit cycle. Those earlier bear flatteners occurred early/earlier in the recovery period, and today the credit market is 6 years in process. The debate as to where the cycle is at this point (middle or end) is ongoing.
• Compare-and-contrast exercises are often heard framing today vs. the 1998-1999 period. The 1997-1998 timeline saw tight HY spreads despite the onset of the Asia crisis (fall 1997), the Russian devaluation/default (August 1998), and growing risk aversion around emerging markets broadly (including Latin America). HY defaults stayed low from 2H96-1998 (avg. ~2.5%). After easing in late 1998, the Fed tightened in mid-1999, defaults accelerated, and the NASDAQ soon peaked (March 2000) and TMT bubble burst.

• During 1998, the Fed debated how inflation was declining despite very strong demand, growth in output, tight capacity, tight labor, and rising compensation. Unemployment declined below theoretical “NAIRU” levels (Non-accelerating Inflation Rate of Unemployment). Inflation remained a hot Fed topic even as inflation declined and oil prices plunged (1997 WTI spot High $26.62 per bbl, 1998 Low $10.76 and average $14.40, 1999 High $27.92).

• The switch from a tightening “bias” in 2Q98 to easing in Sept 98 came in response to financial market stress. The 2H98 easing (25 bps each in Sept, Oct, and Nov to 4.75%) came during the TMT bubble and some of the worst underwriting practices (debt and equity) in history. With so much turmoil in the markets in late 1998 and low inflation, 30Y UST yields fell by over 200 bps from 1Q97 to Aug 1998 (5Y, 10Y by almost 250 bps). The Fed started tightening again after mid-1999 on inflation fear. The rate hikes (including 25 bps each in February and March 2000) began and the market spiraled.
We routinely review the layers of the job market and look for signals around where the pockets of strength and weakness lie in order to frame reality vs. theories on long-term trends such as secular shifts in labor force participation, jobs “offshoring”, part-time vs. full-time, retirement vs. “double-dip” economics (i.e. pension plus part-time). There is no lack of theories.

Just counting heads in the BLS data yields more angles for framing the jobs picture beneath the headlines, but industry analysts help sort out trends across the cyclical (construction, motor vehicles, etc.) and the secular (e.g. government payroll, health care, textiles, printing, food processing, paper products). The tendency is to circle either “cyclical” or “secular” and pick sides in the labor force debate, but plenty of both is in the numbers by industry. The cumulative job adds in 7 years is exceeded by just the LTM Jan 2015 jobs adds, so the jobs issue looms large with the oil patch under siege (Note: We look in detail at industry employment in the HY Slide Pack.)

“Goods-producing” jobs show secular pressure in “Manufacturing – Nondurables,” down a cumulative 516K jobs from Dec 2007 with negative “adds” in almost every category. Durables and Construction show a mix of cyclical/secular. “Manufacturing – Durables” is at -900K through Jan 2015 and “Construction” -1.2 mn as -2.42 mn in “Goods-producing ” is more than offset by 5.4 mn job adds in the larger “Services” sector, which is showing good and bad secular trends for job count.
The industry mix shift of payroll underscores structural changes unfolding since the credit crisis. Much of it was in process before the crisis though many notable moves are a reaction to and aftereffect of the crisis.

Using cumulative change in nonfarm payroll since December 2007 (“official” start of the recession) of +2.5 million jobs, we see material and even dramatic moves by industry with Health Care at +2.4 million, Leisure & Hospitality at +1.4 million, Construction at -1.2 million, and Manufacturing at -1.4 million (Durables -0.9 million, Nondurables -0.5 million). The moving parts are widely divergent.

It is critical to consider which industry trends are more likely to bring a multiplier effect on jobs. For example “Manufacturing” and greenfield plant expansion brings related infrastructure and supporting services in other industries. Oil & Gas drilling does the same. Health Care and Leisure arguably brings much less of that. The fact remains that the cumulative job adds in the cycle is weak and only turned positive in the 5th year of the recovery (May 2014). As much as a “Manufacturing renaissance” is touted, there are manufacturing industries going through their own version of the dark ages, and job count still comes down to net trends. There is also the question of skill sets (i.e. required or not) and what it means for wage trends.

The mix shifts raise questions of job mobility, structural underemployment, and the rate of job adds in an economy that requires significant increases to keep pace with population trends and demographics.
Employment trends by state reflect the uneven and subpar growth during the economic recovery in the aftermath of the crisis. The variations by state (note: state level data does not fully reconcile to national BLS data) are based on a wide range of factors, not the least of which is the relative exposure to changes in the industry mix noted in the national employment numbers.

Other major factors include the relative exposure to the subprime and housing sector excess of the prior cycle, fiscal/tax/budget policies of the state, and the subsequent investment and recovery within sectors with the needed jobs multiplier effects.

The fact that Texas is by far the largest contributor to job adds at 1.25 mn (+11.9% for TX vs. +1.5% for total state payroll) ahead of #2 New York at .3 mn (+3.4%) and that a relatively tiny state such as North Dakota (49th based on population in 2010, up to an estimated 47th in 2014) is ranked #6 in job adds with the highest percentage increase is a testament to the shale oil boom that dominated the headlines. It attests to the multiplier effect beyond narrow BLS headcount on the “oil and gas extraction” line and related direct “support activities” listed. Such wealth creation brings a wide range of adds across many job categories and especially in services. The TX and ND results in turn raise questions around where jobs are headed in 2015-2016 from the oil sector subject to the magnitude and duration of the oil price downturn plus what it means for ongoing investment after the Saudi action.
The above chart shows the time series of BLS payroll data for the industry categories most related to the oil and gas drilling boom. The “Oil and Gas Extraction” and “Support Activities” jobs lines roll up into the total “Mining and Logging” line of the “Goods-producing” category.

The shale revolution has driven jobs higher but well beyond these narrow categories as highlighted by the trends in Texas and North Dakota, where oil production soared. There were also adds in areas where natural gas production was rising though in states (e.g. PA) where declines in other industries did not bring the magnitude of top line additions seen in TX and ND.

Overall, among the states posting the largest growth in oil and gas related jobs since the onset of the recession in 2007 has been TX, PA, ND, OK, CO, CA, LA, and NM with PA and NM among those not ranked with the leading state net job generators.
The effects of the housing bubble and mortgage binge is still evident in household debt indicators, but home price trends off the early 2012 trough are supportive of the consumer sector. The home price rise supports the ability of the creditworthy to refinance and free up discretionary cash flow, improves job mobility (i.e. ability to move and sell a house to find a new job), or improves the ability of “move-up” buyers to sell a home and buy a better one. As a general factor, higher home prices support consumer confidence and the propensity to borrow (e.g. credit cards, auto loans, etc.) and spend. With consumer PCE over 2/3 of GDP, that is an important economic factor.

The 20-City Case Shiller index tracks the rise and fall and recovery of prices and has retraced over 1/2 of what it lost since the 2006 peak when it plunged by 1/3. A mixed regional performance is consistent with past cycles although high correlation in the last cycle blew subprime models out of the water.

New York and Cleveland are up single digits from the lows while Las Vegas and San Francisco rebounded the most (50% + from low). Detroit, Vegas, Los Angeles, Miami, San Fran, Tampa and Phoenix dropped the most (40%+) from the peak. Dallas and Denver only dropped by single-digits and since reached a new peak. Vegas, Phoenix, Miami and Tampa are the farthest off the peaks (30% +) though Vegas, LA, Miami, Phoenix, San Diego, Tampa, and Washington had triple-digit spikes from Jan 2001 to April 2006.
The chart tracks single-family housing starts vs. employment and drives home the anemic volume in the 6th year of this economic recovery. Current volumes only recently moved above most pre-2000 recession troughs even if almost double the post-systemic collapse and March 2009 lows. The new cyclical high in December was below the 1975 recession and just above 1991.

Numerous trends are used to explain the weakness and shifts in demand although the #1 braking factor is tight mortgage credit (tight bank lending standards, down payment requirements, restrictive securitization practices after the crisis, etc.) and uncertainty over the final form the overhaul of housing finance will in fact take in the face of Washington gridlock and deep divisions over housing policy across the parties and committees.

Other trends include the rise in rental properties as an economic option (and whether secular or cyclical), a shift toward multi-family units (retirees and/or prime working age), and urbanization of retirees in some regions. An overhang of distressed/high LTV properties is a variable that gets analyzed. Gauging the housing expectations of the younger demographic (e.g. more discretionary spending, more rentals, or “more car and less house”) is among the factors prone to speculation. Trends will only play out over time with more data points and when mortgage credit is available and housing finance reform is completed. Gauging trends is easier and more reliable when more people have a job and can actually get a mortgage. Then there is a choice.
As reviewed in the “payroll mix” slides covering employment, the cycle has posted a poor manufacturing recovery in historical context when looking more narrowly at capacity utilization levels, the implied pricing power against such slack capacity in aggregate, and what that translated into with respect to more greenfield capacity vs. maintenance capex. The multiplier effect for jobs or the threat to inflation from tight capacity is not evident although reinvestment is improving in recent years. The manufacturing recovery has only been a very good one relative to the radical inventory destocking and near industrial production collapse in 4Q08/1Q09.

We recognize that the profitability of manufacturing and impressive rebound in operating results has been excellent, but that is a different equation. Cost management, rationalization of capacity, restrained capex early in the cycle, and the ability to lower break-evens and be profitable at much lower volumes has been a hallmark of the manufacturing “profit recovery.”

The average capacity utilization during this recovery of around 74% is below 3 of the 5 pre-2007 recessions and modestly above 1982 double dip and the brief 2001 recession. The recent 78.1% (January 2015) is solid in the context of this recovery but is actually below the long-term average since 1967 of 79.2%. The recession of 12/07 to 6/09 posted the worst utilization levels of all the recessions, and the rebound in industrial capex lagged.
Using the trend line from the BEA stats, the chart plots the extraordinary growth in ‘Fixed Investment’ across both “Residential Structures” and “Nonresidential Structures.” The pattern does not require much explanation given the unprecedented spike that came with the explosion in RMBS and CMBS in the past credit cycle to a 2006 residential peak.

In addition to the absolute volume of investment to record levels, another glaring aspect is how far Residential Investment departed from the trend line in Nonresidential. Both show a stunning break from trend line that is mirrored in separate charts on mortgage credit for both (see HY Slide Pack for more detail), but Residential was in a class by itself.

Both GDP line items are back on a steady rise again, so the question is whether the growth is sustainable. The separate population chart for the census data is a reminder that more bodies means more demand for space, goods, and services. Meeting incremental demand and spending for current capacity (maintenance, upgrades, etc.) should be helped by low interest rates for long-term funding subject to decisions on timing and mix. As discussed in the housing slides, it may just be a function of mortgage reform, mortgage credit availability, and some clarification of demand patterns (e.g. single family vs. multi-family, by region, home ownership vs. rental) that will drive more investment. Solid corporate profitability and record stock market valuations in theory will promise sustained investment in nonresidential.
The simple matter of “counting heads” is reassuring for the PCE line of GDP and in framing the prospects for growth in demand. A growing population revolves around jobs creation for those reaching the prime working age bracket, and is a reminder that a growing retiree base with a longer life expectancy will fuel higher demand for a range of goods and services.

The consumer drives GDP, and today there are more consumers with more jobs even if the concerns around structural underemployment and labor force participation are quite justified.

There is also a very well recognized growing base of retirees, and that is a consumer segment that does not stop consuming. The basic economics that “3 Big Macs is more than 2 Big Macs” is the essence of the PCE line in GDP and the evolving payroll mix by industry serving the shifting demographic demands. Growth in sectors such as Health Care and Leisure & Hospitality and the growing employment in those sectors reflect that reality.

The trick will be seeing investment patterns and incentives in the US that can make “3 Big Macs” into “2 Big Macs and a strip steak” and not a can of spam split 3 ways. That means value-added industries with higher wages and skill sets that drive consumer wealth and the middle class. That end result and the means to effect such change (wealth redistribution vs. wealth creating investment) gets mired in politics and the “labor vs. capital” clash.
The chart details the auto cycle in the US and Europe and especially the contrast between the US and Europe. A car/truck is typically the second largest item on the purchase list behind a home (we exclude education/tuition), so trends in auto sales say a lot about economic trends. For now, the US has soared while Europe is mired in low volumes despite the slow mend in 2014. Fleet age remains favorable for replacement cycles in the US.

Bigger-ticket consumer durables serve as a very useful lens for viewing the benefits of more jobs, more readily available non-mortgage consumer credit, low rates, and higher consumer confidence. While the US has rebounded, the EU 15 remains modestly above multi-decade lows.

The US consumer benefitted from the economic recovery and steady job creation. The trend line in auto sales underscores how the natural forces of fleet expansion and a rising base of replacement demand come with a growing population, easier retail credit, and low rates. These forces drive volume and bring multiplier benefits (e.g. finance/insurance demand, higher profits of the dealers that employ even more bodies than auto manufacturing).

Jobs and credit availability provide the foundation for growth in the US, and it is a missing ingredient in Europe on the back of austerity and painfully bad employment trends.
The health of the global “growth markets” (whether China narrowly, the BRICs more broadly, or emerging markets generally) is far more tenuous now than in recent years with Brazil and Russia facing the worst headwinds.

The term BRIC has brand buzz, but in the end the main event for HY is China first, second, and third since China is the dominant driver of incremental commodities demand (iron ore, base metals, oil) even if the Middle East and US shale oil are the regions wagging oil supply. China also is the destination for so much investment by US and European multinationals and thus a key driver of large cap equities (via guidance adjustments).

In the above chart we plot the auto cycle sales volumes for the BRIC nations. We give the “C” in BRIC its own line as China sales still dominates the global picture. The fear of a serious slowdown in China’s rate of growth and even a hard landing has been on the radar screen for years, we have been hearing it for the last 10 mn units of sales growth – with growth still continuing.

We expect a China crisis at some point just as in many countries that went through periods of rapid growth or faced bubbles in hot industries including recent events in the last 35 years in the US (oil patch crisis in the 1980s, commercial real estate, and TMT) or in the way-back machine (Great Depression, the boom-bust of the US Gilded Age). The main point is that inevitability does not translate into predictability for a nation like China with massive liquidity backstops and inherent balance of payment advantages.
We like to watch the Class 8 truck market as one of the more volatile, capital intensive cyclical sectors in the US markets. The pronounced swings have been driven by a mix of inherent cyclicality of the order trends but also by some factors such as EPA emissions phase-ins that drove some major “pre-buy” programs in past cycles ahead of key regulatory dates.

The Class 8 truck market is highly sensitive to GDP growth and tonnage, and the lagging capex cycle, the slower recovery of housing and construction, and the tepid manufacturing sector recovery all feed into theories that this cycle will be fundamentally less volatile as long as a major systemic whipsaw can be avoided that promotes a fresh bout of risk aversion. The hope for a steadier capex investment cycle and a slow-but-steady recovery in construction markets provide some ammo for the “long and slow” cycle theories.

The expected peak for North American sales volumes is 2015, and a favorable side effect of lower oil prices and lower diesel is that helps the competitiveness and operating cost structure of the truck OEMs’ major fleet customers. Stubbornly low interest rates also help the capital budgeting decisions for replacement cycles at a time when fleet ages are near highs. Financing availability remains favorable.

The outlooks are much less sanguine in Europe and key BRIC markets but as a cyclical signal in the North American market, we are not seeing signs of trouble from Class 8 trucks.
This chart frames systemic debt risk by major sovereign domicile across government, nonfinancial corporate, and household debt. We frame the last credit peak (2Q07) vs. 3Q14 in the above chart and the main conclusion is that every single bar is higher in 2014 despite growth across many economies. The smallest move is not surprisingly registered by Germany on growth and fiscal discipline.

These numbers are subject to frequent revisions (e.g. inclusion of shadow economy statistics which had the effect of lowering some debt/GDP ratios) and have inherent limitations. Shortcomings include off-balance-sheet debt, questionable government accounting standards, and the failure of government accounts to capture massive and potentially crippling legacy debt obligations (pensions, health care, miscellaneous social safety net protections). It is difficult to capture subnational, state, and local debt that might be contingent (politically or otherwise) debt-like exposures for some sovereigns.

The bar graph height only tells a partial story since the quality of the debt (household or nonbank financial) can heighten the risk of any given Debt/GDP ratio vs another. A glaring example is the strong government balance sheet of Ireland in 2007 (25%) morphing into very weak metrics (115% 3Q14) since the government bailed out the banks in the real estate crisis. Similar erosion has been seen in Spain’s government metrics.
• As we covered in the earlier slide on comparative government yields, the relative absolute rates of the UST curve vs. some of the more troubled Eurozone sovereigns has been an eye-opener. The chart above tracks the yield curve for the UST vs. Italy and Spain and also Portugal, which has been out of its original 3-year IMF bailout program (signed May 2011) less than a year.

• Relative to where Italy and Spanish rates have moved, the UST is seen by many as a high yield alternative in a more liquid market (diminished though that secondary liquidity may be vs. prior cycles) with a less risky currency (i.e. the dollar). The main point is that in the search for yield in exchange for proper risk compensation, the pricing on risky sovereign debt still makes many higher risk corporates look more reasonably priced.

• The reach-for-yield pressure tied to such record low sovereign pricing in Europe has promoted demand for large cap high quality corporate issuers. Moving all the way down to the lower tiers of high grade may be a reach too far for many, but Eurozone issuers in the BB tier have found a natural buyer base with high grade investors given that many of these BB tier issuers are fallen angels that are blue chip benchmarks. The result feeds the reach for yield pattern as former BBB and BB buyers move into even lower tiers.

• Shaking this relationship will require some upward pressure on sovereign yield curves, which usually is associated with even bigger problems.
In the above chart we plot the “before and after” effect of what has transpired since the famous Mario Draghi statement of “whatever it takes…” made on July 26, 2012: “Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough.”

Together with supportive action by the Fed (by mandate but not directly tied to European systemic risk) and more supportive actions by the ECB (e.g. LTROs, later QE) and despite periodic bouts of headlines from elections (e.g. Italy, Greece) or bank system crises (e.g. Cyprus), all-in yields have plunged.

Through the acronym fest of LTROs (longer-term refinancing operations) and TLTROs (“targeted” LTROs) and OMTs (Outright Monetary Transactions), a concerted effort was made by the ECB to ease funding fears in the market and de-link the systemic risk associated with the fiscal mess on the sovereign front from the funding risks of the bank system. That went to a long way toward providing reassurance on bank counterparty risk and eased the memories of interbank stress that was hammering the markets.

The overall effect of the jawboned policy support, official program announcement, and the extension and funding actions under LTROs eased the sense of systemic stress and drove rates materially lower for the two most critical troubled sovereigns – Italy and Spain. Whether the programs were used or not or the facilities repaid, the policy aggression did the trick, eased risk aversion, and even promoted the reach for yield.
• Euro HY default rate history shows issuer default peaks of 17.1% (9/02) and 11.3% (12/09). Issuer defaults in Euro HY are quite low as record refinancing/extension and a supportive ECB (including QE) promotes high demand and allows for favorable excess returns vs. negative bund yields. A 2014 Euro HY bond default rate of 1.6% was down from 4.4% in 2013. Euro leveraged loan issuer defaults are higher than bonds at 3.7%.

• US HY bond history offers few frames of reference with only 3 major default cycles. That does not stop people from making a lot of past-is-prologue conclusions based on plug-and-play models. The correlation vs. causality debate it hardly new, but 3 data points should promote caution before making the leap to high certainty. The risk menu and the portions change each cycle just as risk appetites do. To beat the metaphor to death, so do the diners.

• The Euro HY market has an even more limited history with two default cycles since the euro launch with the post-TMT implosion and later the systemic crisis of 2008. The 1999-2002 Euro HY market was like a leveraged TMT call option (note the 74% TMT weighting in March 2000). The crisis in 2008-2009 descended from the high grade market downward in a systemic meltdown that Europe still has not recovered from and fed the 2010 headlines and 2011 volatility. The latest cycle has a heavy systemic element in the form of eurozone sovereign stress, and this further complicates framing the mix and weighting of risk factors that could set off another default cycle.