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Downside to Recoveries after a Long Recovery

Bradley Rogoff, CFA
+1 212 412 7921
bradley.rogoff@barclays.com
BCI, US

Rizwan Hussain
+1 212 412 7997
riz.hussain@barclays.com
BCI, US

Scott Schachter
+1 212 526 9716
scott.schachter@barclays.com
BCI, US

www.barclays.com

Credit investors tend to focus primarily on default rates when looking at potential losses to their portfolios in times of stress. This makes sense considering the significant increase in losses when default rates move to above-average from below-average levels and the potential to build robust forecasting models. Recovery, the other component of loss, is harder to predict and is very volatile. We attempt to forecast recovery rates through the next cycle using historical recovery rates, along with current trends in leverage and market structure.

We find that there is more downside to loan recoveries than bond recoveries. This is due to the increase in total leverage for loan issuers, primarily through more first-lien debt and the lack of unsecured capital behind loans compared with the past. An increase in the amount of loan-only capital structures to almost 60% is likely to pressure recoveries as well. We believe that over a full cycle, recoveries could be as much as 10pts lower ($60 versus $70). However, this does not account for a shift in industries that has caused purchase price multiples of new deals to increase compared with past cycles. If this means that enterprise values will be a similar amount higher in a future downturn, then recoveries should be closer to $66. Our conclusions of lower recoveries are supported by rating agency recovery data on covenant-lite loans, which now represent 80% of the market.

For bonds, the story is a bit different. Leverage is lower overall, and the amount of loans ahead of unsecured bonds is slightly lower than at the start of the previous downturn. However, secured bonds have increased substantially, and senior subordinated bonds outstanding have decreased substantially, both serving as a detriment to unsecured recoveries. We expect unsecured recoveries to be 4pts below their previous cycle averages in the low to mid-$40s if we once again hold enterprise value constant. We recognize that recoveries in both markets are likely to be as volatile as ever in the next downturn, with increased collateral sharing, use of covenant baskets for asset stripping and stress in certain industries making predicting potential recoveries more complex than in the past.

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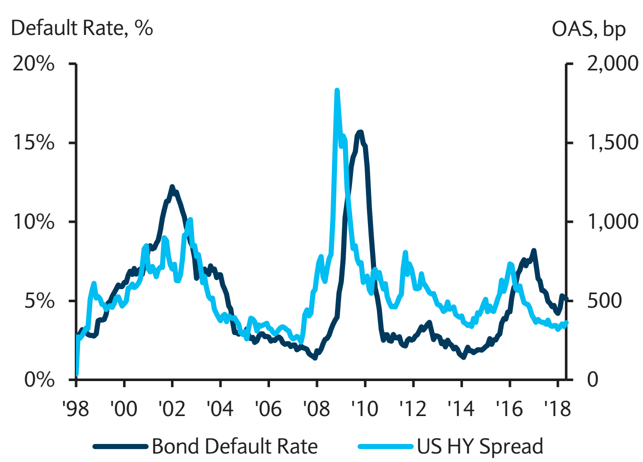
Recoveries Are Cyclical

When investors focus on potential portfolio losses from distress, the conversation typically gravitates toward default rates. This is not surprising considering that it is widely acknowledged that an uptick in defaults in the near future is likely to portend wider spreads. In fact, we find that spreads often peak about 10 months prior to the local high in default rates (Figure 1), implying that forecasting the one-year-forward default rate is a useful exercise. Despite testing numerous other variables, we find that a regression using lending standards and bonds or loans trading at stressed levels is quite effective in forecasting default rates (Figure 2). This informed our 2-3% default forecast to start the year (see *2018 High Yield and Loans Default Outlook*), and if we plug the latest data into our model, the results remain in this range. The issuer-weighted rate remains at 5.1% for high yield, with leveraged loans at 2.5%, according to Moody's. However, the more relevant number for investors is likely the dollar-weighted default rate, which is in line with our expectation for high yield at 2.1%.

Although default rates are important, they are only part of the equation when it comes to losses. The difference in peaks and valleys with respect to recoveries is also significant. However, forecasting recoveries is an imperfect science. The inverse correlation between defaults and recoveries is well established (Figure 3), but requires a prediction of the default rate to determine. This has been true in the bond market historically, with previously low recoveries coming when defaults spiked in 2000-02 and the next lowest figures in 2008-09 and 2016. The loan market has had less violent swings, with the early 2000s only modestly below average, but 2008-09 moving lower more substantially as the loan market evolved during the mid-2000s LBO boom. Since energy was a much smaller part of the loan market, there was no noticeable change around 2016. While the link between defaults and recoveries is slightly weaker in the loan market, it seems to have increased as the market transformed in recent years.

FIGURE 1

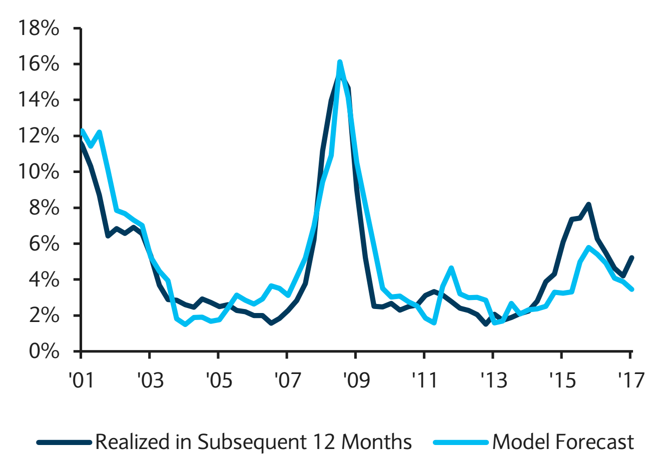
Ten-Month Delayed High Yield Spreads versus High Yield Default Rate



Source: Moody's, Bloomberg Barclays Indices

FIGURE 2

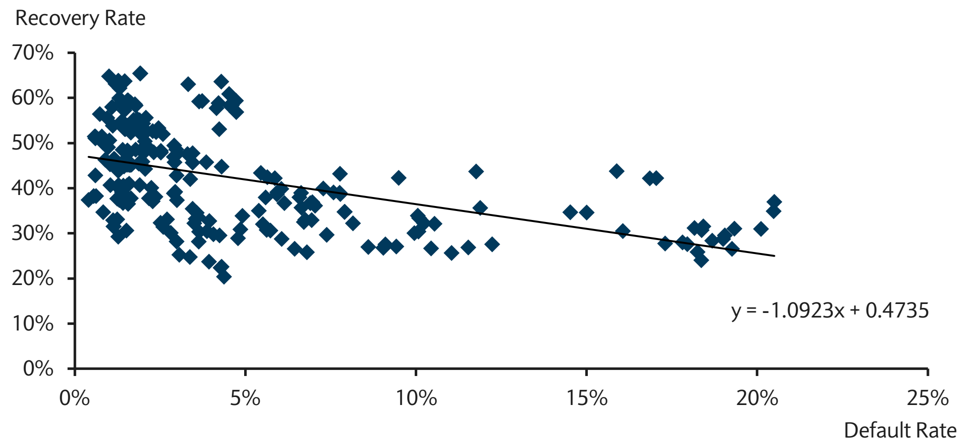
High Yield Default Rate versus Regression-Based Expected Default Rate



Source: Moody's, Federal Reserve, Bloomberg Barclays Indices

FIGURE 3

Monthly High Yield Recovery Rates versus Default Rates (1999-Present)



Source: Moody's, Bloomberg Barclays Indices

Sudden changes in default rates tend to be the most significant driver of losses, but the variability of recoveries also plays an important role. The standard deviation in unsecured bond recovery (and, therefore, loss given default) over the past 20 years has been over 10pts. As a result, we believe that default rate expectations, as well as recoveries, should remain prominent drivers in portfolio positioning.

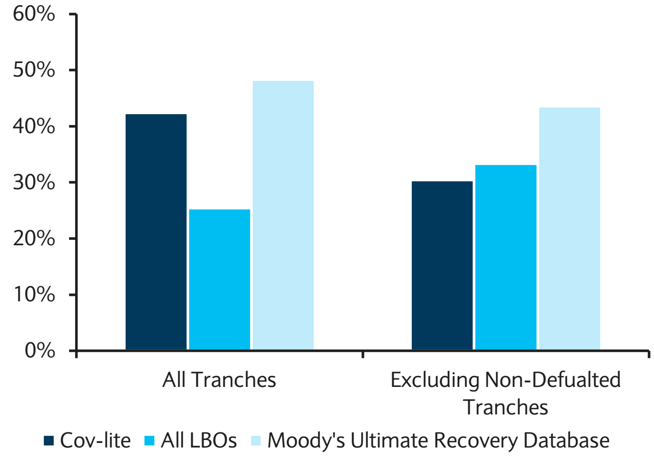
Potential New Normal: Lower Default Peaks with Lower Recoveries

As covenant-lite loans have taken over the market, the calculus of losses in a downturn is likely to change. Going into the credit crisis, approximately one-quarter of the loan market was covenant-lite, compared with almost 80% today. Common logic is that this should lead to lower default peaks and perhaps even lower long-term default rates, as companies are likely to have more time to fix their balance sheets in a stressed environment. In addition, if a downturn is fairly quick, companies can right the ship and grow into their capital structures as the economy rebounds. The 2008 recession provided a test for this theory, but with no similarly steep downtrend on record during the approximately 30-year history of the high yield market, it is difficult to isolate the effects of covenant-lite structures.

To illustrate these difficulties, Moody's issued a report in June 2011, *Seeing Where it Hurts*, showing that covenant-lite issuers defaulted at a rate modestly below historical averages. However, three years later, when the rating agency issued a report entitled *Time is Catching Up with Covenant-Lite*, the data showed somewhat higher default rates for companies with covenant-lite loans, although the default rates for the actual loans were similar to the rest of the loan universe (likely because distressed bond exchanges inflated the company default rate). This calls into question the conclusion of lower overall default rates, but based on a sample of 29 defaulted issuers, it is somewhat limited. The report also concludes that, as expected, covenant-lite structures can defer default, as the 29 covenant-lite issuers had a time to default of 3.3 years from origination, compared with 2.1 years for the average loan.

FIGURE 4

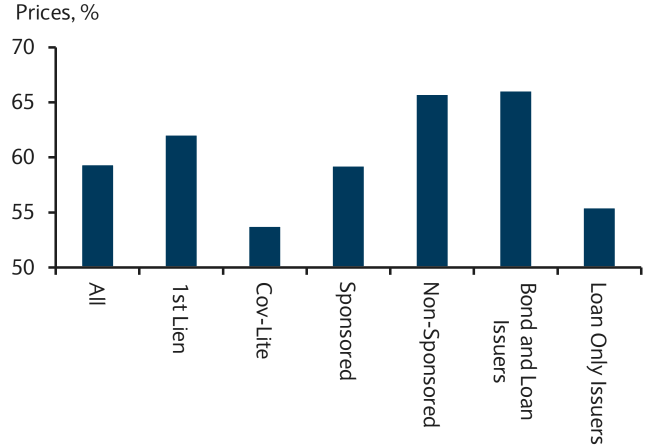
Recoveries for Senior Unsecured Bonds



Source: Moody's

FIGURE 5

Leveraged Loan 30-Day Post-Default Prices, 2007-17



Source: Fitch Ratings

As for recovery, the Moody's report from 2014 does not indicate lower recoveries for covenant-lite loans; it states that the ultimate recovery (as opposed to more commonly quoted 30-day post default trading recovery) is in line with that of the larger universe. However, as discussed later, incorporating more recent data, with a larger covenant-lite universe, starts to skew recoveries lower. Interestingly, the recovery of senior unsecured bonds in covenant-lite structures appeared to be detrimentally affected, even though it was more in line with the average LBO recovery, consistent with many covenant-lite loans being from private equity-backed corporates (Figure 4). A word of caution about this negative finding is that the added time to default likely resulted in extra coupons, which would make returns on the unsecured bonds more similar over a longer term.

With a more updated and less sanguine view on covenant-lite loans, Fitch published a *U.S. Leveraged Loan Default Insight* in January showing that 30-day trading recoveries of covenant-lite loans are historically more than 8pts lower than first-lien loan recoveries and 5.5pts below the average sponsored loan recoveries (Figure 5). When looking at emergence prices, covenant-lite trails by closer to 6pts, and recoveries are similar to sponsored recoveries. However, the data including emergence prices is based on only $18bn of defaults, whereas the 30-day trading recovery has two times the sample size. Away from covenant-lite, the big discrepancy in the Fitch data is between loan-only issuers and those with bonds as well (Figure 5). This trend of lower recoveries for loan-only issuers holds looking at either type of recovery data, with a gap of 11pts in 30-day trading recovery and 17pts in emergence price.

Recoveries Look Set to Change More Than Default Rates

When we aggregate data from multiple sources on defaults and recoveries in the evolving credit markets, we come to a few conclusions.

- Cumulative default rates are likely to be similar in future cycles, although they may be more spread out, and any surprise would likely come from their being lower in quick downturns. In general, this should allow us to keep using our current forecasting models, but we may overestimate spikes at the beginning of a downturn. We would prefer the error to be in this direction, as spreads will likely jump at a similar time even if defaults plateau at lower levels as opposed to peaking at extremes.

- Covenant-lite companies are unlikely to have meaningful different default rates over a long time range. This is somewhat counterintuitive, but considering the preponderance of private equity-backed covenant-lite issuers, there is some sampling bias to account for what might be slightly lower default rates all else equal.

- While the default conclusions are fairly close to the status quo, the direction of travel for recoveries on covenant-lite bonds and loans appears biased downward. For loans, some of this can be attributed to backing from aggressive sponsors and an increase in loan-only structures. A portion is likely also due to coupons and other payments to unsecured creditors prior to default. Bonds face lower recoveries as a result of these payments as well, but potentially recoup some of this value over a longer pre-default lifespan.

Quantifying the Downside in Loan Recoveries

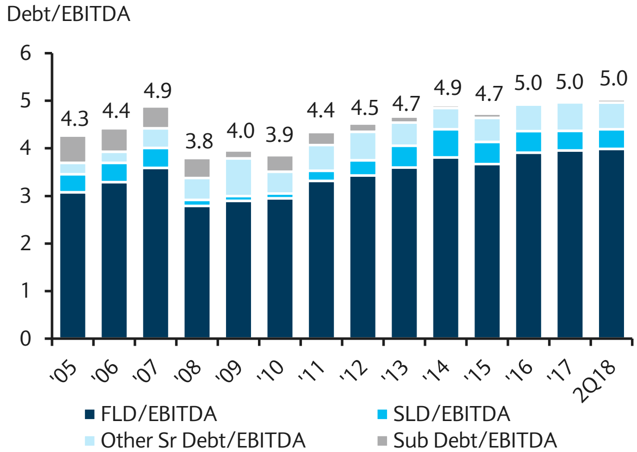
Trying to quantify the exact effect on recovery is challenging, but if we make a few simplifying assumptions and use historical data, we can get a reasonable estimate of the new range. We believe that loans will be affected more than high yield bonds and therefore start with that asset class. Using new issue leverage data that are readily available for the loan market (and considering we are coming off a record new issue year, this should be a good proxy), the total debt levels of issuers in the loan market have risen to new highs, but only slightly above prior peaks. If we take the average of 2006-07 (peak of the previous cycle) versus 2016-17, the increase in total leverage is only 6%. We also note that 2018's total leverage thus far is slightly higher than 2017's, so the average is, if anything, likely to be skewed higher over time (Figure 6). Next and just as important is the way that leverage is proportioned. In 2006-07, the average deal had 72% of the debt as first-lien loans, compared with 79% in the most recent period. Taking both these factors into account, the recovery difference should be approximately 10pts lower for the average deal if we base our model on historical recoveries of 70%, as per Moody's database, and assume that enterprise values are the same. If, instead of focusing on the full cycle, we use the 58% low point in recovery from 2008 to 2009 as our baseline, the drop in our model is only 8pts.

Clearly, the first counterpoint to our stylized example is that it relies on enterprise values being similar. Purchase multiples have been a bit higher than historical averages in recent transactions, and this is likely skewed somewhat by the prevalence of technology deals in the loan market. We believe that in times of stress, multiples typically converge to some degree; however, if we assume that the increased purchase prices hold, this would boost our recovery estimates. Using the same cycle peaks analysis, we find that purchase price multiples are a little more than 10% higher this time around. However, for recoveries still to be at about 70%, enterprise values would need to be 17% higher. For those who think multiples can hold at about 10% above the previous cycle in a downturn, this would imply recoveries closer to 66% than 60%.

On the other hand, we simplify our analysis by assuming that the recovery occurs in a pure waterfall analysis. Although beyond the scope of this article, if anything, we think that changes to the market over time could negatively affect secured recoveries with respect to this assumption. The changing face of the high yield market means there is less debt that is subordinated in right of payment and more that has a senior claim, whether it is secured or not. The bond market now consists of only 4% senior subordinated bonds, compared with 23% in 2002. Secured bonds have also doubled to 18% from 9% in high yield over that timeframe, with many pari passu with first-lien loans. Less senior subordinated debt at the expense of more senior secured and senior unsecured means that collateral fights could be more intense considering the lack of contractual subordination. Evidence of this trend exists within the loan market, as revolving credit facilities that almost never have any collateral ahead of them have seen their recoveries diverge from term loans that have more often been forced to share collateral in recent years (Figure 7). Another related downside is that the weaker covenant package has led to asset stripping in several instances that benefited

FIGURE 6

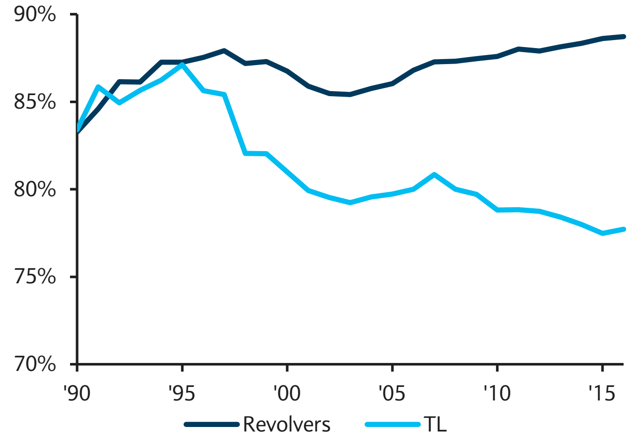
Average Loan New Issue Gross Leverage Multiples



Source: S&P LCD

FIGURE 7

Cumulative Average Recoveries of Revolvers versus Term Loans



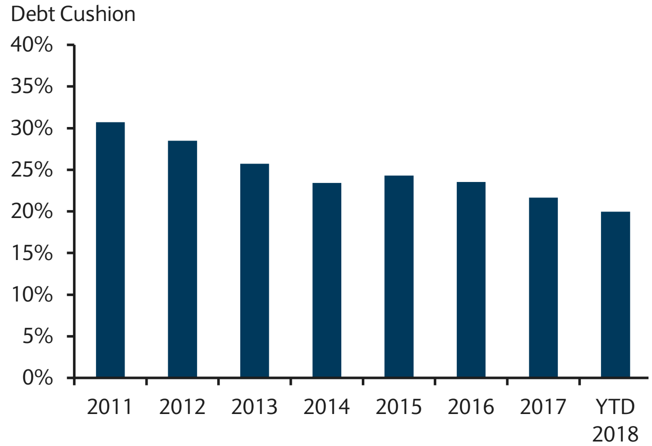
Source: Moody's

other creditors at the expense of loan investors. These instances remain idiosyncratic, but are increasing in occurrence, as we detail in *Credit Market Activism through Covenants*.

Once again with respective to our waterfall analysis, there are real world realities that differ from simplistic modeling. As distressed market participants know, unsecured tranches often receive some form of recovery even when the secured tranche does not recover par. In this sense, if unsecured creditors are able to garner a recovery similar to those in the past, the thinner layer of unsecured debt could increase the amount of the pie available to secured creditors. Since unsecured recoveries when the first lien does not come out whole are often the product of intense negotiations and litigation, it is difficult to model this as a base case. Nonetheless, when we include the estimates in our model, we find that, similar to the expanded multiples in the case of higher purchase prices, this could boost recoveries into the mid-60s.

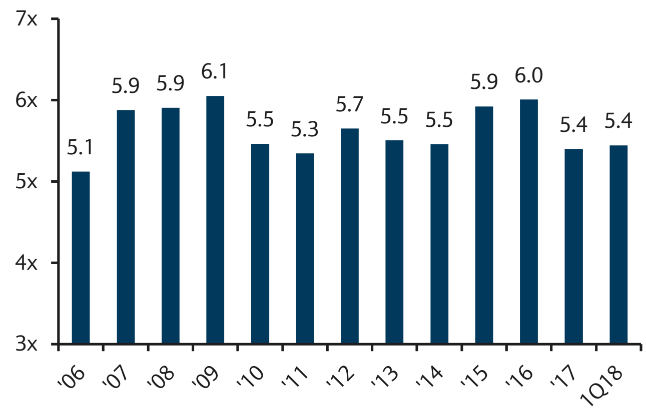
Although calculated independently, our original estimate of up to 10pt lower loan recovery all else equal makes intuitive sense based on some of the other available data. These include the fact that the loan market has shifted to 58% loan-only companies from 39% as recently as the end of 2012 and, as mentioned above, that the average recovery for loan only issuers historically is at least 11pts lower. In addition, this is consistent with the move to an 80% covenant-lite market. S&P recently did an updated study of defaults from 2014 to 2017 and found that covenant-lite loans recovered 10pts less than non-covenant-lite, albeit $72 versus $82 because it was during a period of solid economic growth. This provides added light to the Moody's statistics mentioned previously with a more up-to-date period. As seen in Figure 8, S&P LCD data on debt cushions for recent deals seem supportive of this conclusion, as does Moody's analysis in *Lessons from a trillion dollars of defaults,* which shows a high correlation between debt cushion and recovery.

FIGURE 8
Debt Cushion of New Issue Covenant-Lite Loans



Source: S&P LCD

FIGURE 9
Par-Weighted Net Leverage (Ex-Financials) of US High Yield Bonds



Source: Capital IQ, Bloomberg Barclays Indices, Barclays Research

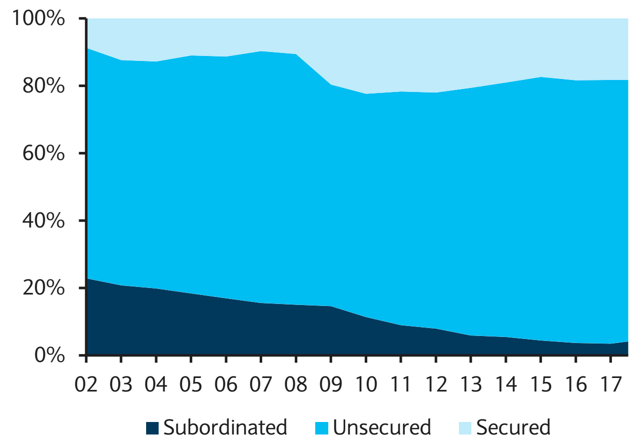
High Yield Recoveries Should Have Less Downside

We attempt to assess high yield recoveries in a similar light and are once again constrained by the available data. In terms of total leverage metrics, data are more robust for high yield because we can review market statistics as opposed to new issue-only information. Once again, we are most interested in a true cycle downturn, so we use leverage in 2007 as a proxy. Our data show that leverage has declined 0.5x from 2007 until today (Figure 9). For senior unsecured recoveries, this tells only part of the story. In 2007, 15.5% of the market was still made up of senior subordinated bonds, compared with only 4% today (Figure 10). According to Figure 10, 2007 was the lowest year since 2002 in terms of the portion of the market that was secured. So despite lower all-in leverage, the market has less subordination and more debt ahead of it.

While today's high yield market has more secured debt, it does not answer the question of whether unsecured bonds have more or less debt ahead of them because the majority of secured debt will still reside in the loan market. Unfortunately, because of the significant increase in loan-only issuers, we cannot just use the relative sizes of the high yield and loan markets as proxies for secured versus unsecured debt. Instead, we use CapitalIQ to look at the high yield market at different points in time and review the breakdown of floating- versus fixed-rate debt for issuers. Because the unsecured FRN market is more or less nonexistent in US high yield, we will assume all floating debt is secured bank loans and split the fixed-rate debt according to Figure 10. As seen in Figure 11, the percentage of floating-rate debt has declined slightly, to 32% from 35%.

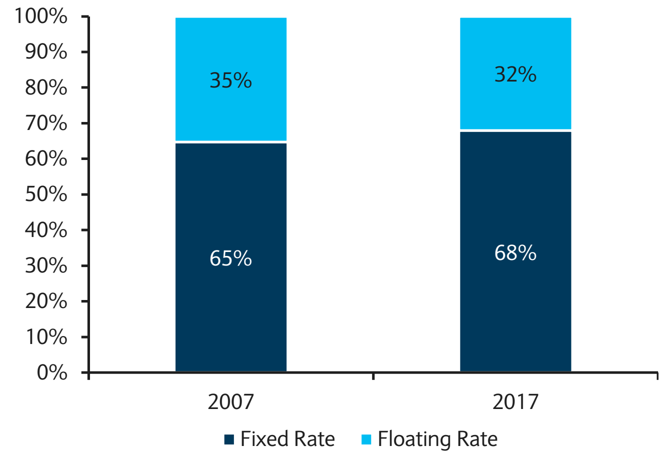
Taking each of these data points, we are left with lower total leverage (Figure 9), similar secured leverage (more secured bonds, but less floating rate debt), and modestly higher unsecured leverage (less sub debt cushion). The end result is that if we once again hold enterprise value constant, recoveries should be roughly 4pts lower than historical recoveries in the $40-45 context. If we look at the low point in the cycle, when recoveries were in the mid-$30s, the delta shrinks to 3pts. The bond market has not experienced a sector change similar to loans, so the argument of higher enterprise values thanks to the prevalence of technology names does not hold as much weight. However, we note that for recoveries to be similar to historical averages, enterprise values need to be only about 3% higher.

FIGURE 10
Bond Seniority Since 2002



Source: Bloomberg Barclays Indices, Bloomberg

FIGURE 11
Mix of Fixed- and Floating-Rate Funding for US High Yield Public Issuers



Source: Capital IQ, Barclays Research

Once again, we look for potential sources of bias in our calculations. The makeup of the bond market by seniority and security is a good starting spot to estimate unsecured recoveries, but the overlap between unsecured bonds and the secured and subordinated portion of the market is not perfect. However, the overlap in terms of the percentage of secured bonds that also have unsecured bonds in their capital structures has been pretty consistent. Similar to the shrinking of subordinated bonds, the amount of sub bonds that also have unsecured bonds has declined over time. This lack of cushion would tend to bias recoveries lower, but a smaller percentage of something that is only 4% of the market should have a de minimis effect.

We also emphasize that we are focusing on payment defaults and not distressed exchanges, which tend to bias some of the reported stats higher because they typically have higher recoveries. Distressed exchanges are a double-edged sword. In many cases, they may help avoid an eventual default. However, to the extent that they are done as part of an uptier exchange, this creates more secured debt and could therefore eventually lower unsecured bond recoveries. In addition, with more collateral sharing, as mentioned above, court processes can get expensive and eat into recovery as well. The uptick in uptier distressed exchanges after the credit crisis has been a large factor contributing to the increased portion of secured debt in the high yield market and increases the risk of lower recoveries on stub unsecured bond pieces.

One positive for future bond recoveries is the improvement in quality of the market. CCC bonds are at their lowest levels in more than a decade, and perhaps more important, LBO issuance has not reached the levels of the past cycle. For example, in 2007, one-third of issuance came from LBOs, but the highest amount of the past seven years has been 6%. This is important because Moody's highlights in *Lessons from a trillion dollars of defaults* that recoveries for unsecured LBO bonds are at least 10pts lower than for the rest of the sample set.

Lower, but Still Volatile

Our conclusion that recoveries will be lower for both bonds and loans (yet more so for the loan market) should surprise very few credit investors, as the more aggressive lending trends in that market are well documented. We note that our forecasts of recoveries that are 4-10pts lower for loans and up to 4pts lower for high yield bonds are meant to be an average through the cycle. Undoubtedly, the trend of low recoveries when defaults spike should continue, and as a result, recoveries will look even worse than our estimates at the bottom of the cycle. However, when investment managers or CLO managers run loss numbers, the default rate and recovery rate through the cycle are typically the more important metrics. We attempted to account for potential biases in our data; however, we recognize that the result of certain changes in the market, such as the increase in collateral sharing and asset stripping, are difficult to fully predict. In addition, we would expect industry-specific factors to be especially important at the bottom of the cycle. There are many other smaller external factors that we have not addressed, but we believe that our simple stylized framework provides a good basis for how to think about recoveries.

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