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Leveraged finance - US

Convergence of bonds and loans sets stage for worse recoveries in the next downturn

» **Demanding borrowers are undermining the strength of credit agreements and capital structures to the detriment of investors**. As we reach a high point in the credit cycle, the syndicated leveraged loan market has pushed above $1 trillion, rivaling the size of the US high-yield bond market. Convergence forces include the increase in widely-held syndicated loans, the growing share of companies owned by private equity, and demand for new issuance that continues to outstrip supply. Loans are becoming more bond-like with these convergence trends causing investors to lose more control over debt terms and credit protections. This structural convergence between bonds and loans will have negative consequences for investors, including worse recoveries, when the markets turn.

» **Investors will remain under pressure to keep buying**. Investors continue to cede control over debt structures and credit terms to borrowers because their need to fulfill fund mandates and increase yield is intense. At the same time, the expansion of various forms of more passive investing such as CLOs, which represent about 60% of the loan market, will continue to fuel demand. These developments are making it much more challenging for investors to be selective.

» **A weak rating distribution will produce more defaults in the next credit downturn**. Borrowers with aggressive financial policies have taken advantage of the convergence trends and favorable market conditions that have persisted since quantitative easing started fueling supply post-recession. Tellingly, these factors are driving ratings lower with the share of first-time issuers rated B3 hitting a record 43% in the first half of 2018 while roughly 64% of the US speculative grade population has a B2 or lower Corporate Family Rating (CFR), up from 47% in 2006.

» **Our credit ratings reflect deterioration in debt structures.** As debt cushions have eroded and loan-only structures have increased, they have also taken debt instrument ratings down with them. A decline in debt cushions is indicative of broader loan market trends and notching up for first-lien debt has declined accordingly. Based on our loss given default assessments, average first-lien term loan recoveries are expected to decline to 61% going forward, versus the 77% long-term historical average.

THIS REPORT WAS REPUBLISHED ON 29 AUGUST 2018 WITH ADDITIONAL RELATED PUBLICATIONS.

- **Financial policies remain a key credit consideration**. Financial policy has long been a key driver of credit risk for all companies, no matter where they fall on the ratings scale, or whether they are privately or publicly-held. Private-equity owned companies, in particular, have shareholder-focused financial policies and high leverage, which is reflected in low CFRs, typically B2 or B3.
- **Private equity sponsors, which have raised record levels of capital for LBOs, have unprecedented flexibility to strip away important protections on which loan investors have historically relied**. By allowing actions such as collateral-stripping asset-transfers, incremental secured-debt incurrence and greater retention of asset-sale proceeds, credit agreements of PE-backed firms are creating the potential to upend or dilute the position of first-lien loans. These actions set precedents that have been adopted by the market broadly.
- **Strong liquidity and low default forecast allays concerns about risk -- for now**. Our proprietary indicators provide a broad roadmap to monitor fundamental credit conditions. A near record low Liquidity Stress Indicator and a B3 Negative and Lower Indicator that is comfortably below its long-term average as a share of the spec-grade population point to low defaults over the next 12 months. But record-worst readings for our Bond and Loan Covenant Quality Indicators reflect the shift of power to borrowers. At the same time, a deteriorating rating distribution and loss given default estimates demonstrate that risks are building that could lead to a severe credit downturn once the current economic expansion ends.

Tracking convergence and its effect on credit protections, credit quality and capital structures

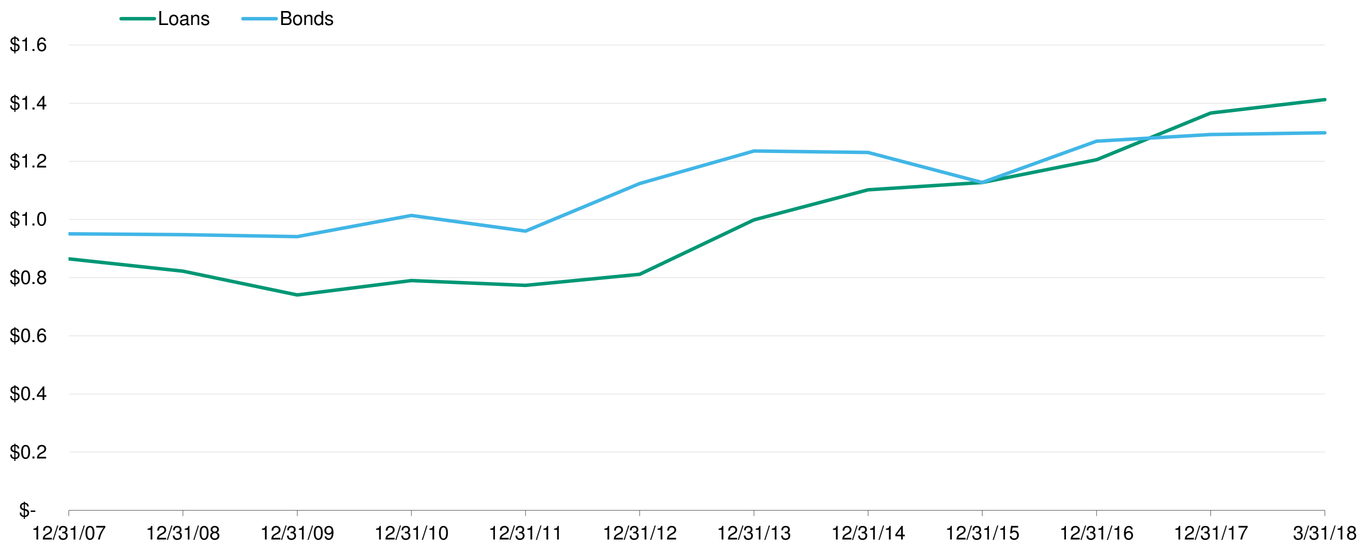
Today's weakness in credit quality, debt structure and credit protection within loan agreements and bond indentures is offset by the broad availability of capital and the positive US economic outlook. But the weakness is increasing risk in ways that may not be readily apparent before a downturn in the credit cycle. Our credit ratings and other unique information points, including speculative grade liquidity ratings, associated bond and loan covenant quality scores (BCQ and LCQ scores, respectively) and debt structure assessments (in the form of loss given default assessments, or LGDAs), help forecast these risks. They also highlight the impact of risk-taking by speculative-grade borrowers, primarily private equity, on the leveraged finance markets and shine a light on the market's vulnerabilities, including the pressure on investors to lend.

Our unique data facilitates both transparency and differentiation among high yield bonds and leveraged loans. In addition to regular commentary on our proprietary leveraged finance broad market indicators included in our Credit Cycle Gauge, we plan to publish, on an ongoing basis, key data points for all covenant quality scored loans and bonds on a rolling 12 month basis. Our goal is to help investors stay ahead of impending trends. The first installment of this data set, **Moody's Credit Convergence Monitor**, is available here for your reference. We plan to update and discuss it quarterly.

Demanding borrowers are undermining the strength of credit agreements and capital structures to the detriment of investors

Significant growth in the number of lower-rated issuers and convergence between leveraged loan credit agreements and high-yield bond indentures is weakening credit protections and is indicative of fundamental forces that are driving weaker credit quality and capital structures. These forces include the increase in widely-held syndicated loans and the growing share of companies owned by private equity. As we reach a high point in the credit cycle, the syndicated leveraged loan market has grown remarkably and now stands above $1 trillion, similar in size to the US high yield bond market (see Exhibit 1).

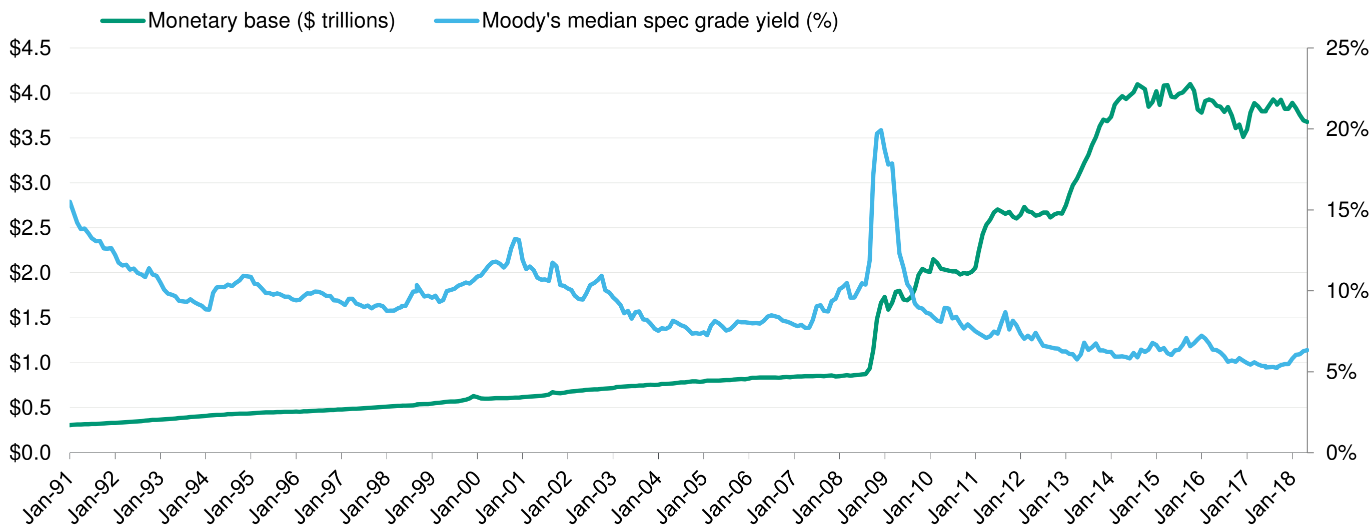
Exhibit 1
Loan and bond outstandings for rated US speculative-grade issuers



$ trillions; loans consist of revolver commitments and term loans at origination, excluding prepayments; Source: Moody's Investors Service

The current low-rate environment and pressure to stay invested favors speculative-grade borrowers over investors. In a credit market buoyed by massive monetary stimulus and unprecedented quantitative easing, companies up and down the credit spectrum have largely unfettered access to inexpensive debt at favorable terms (see Exhibit 2, page 4). Demand from yield-hungry and more passive investors that intend to remain fully invested in the target asset, including CLOs, is so strong that it is not only holding down pricing, but it is allowing borrowers to structure their credit agreements and bond indentures in ways that provide them with the utmost flexibility. Moreover, credit agreements increasingly resemble capital market instruments and are more like bond indentures when it comes to credit protections.

Exhibit 2
Expansion of the US monetary base helps to drive down speculative grade yields

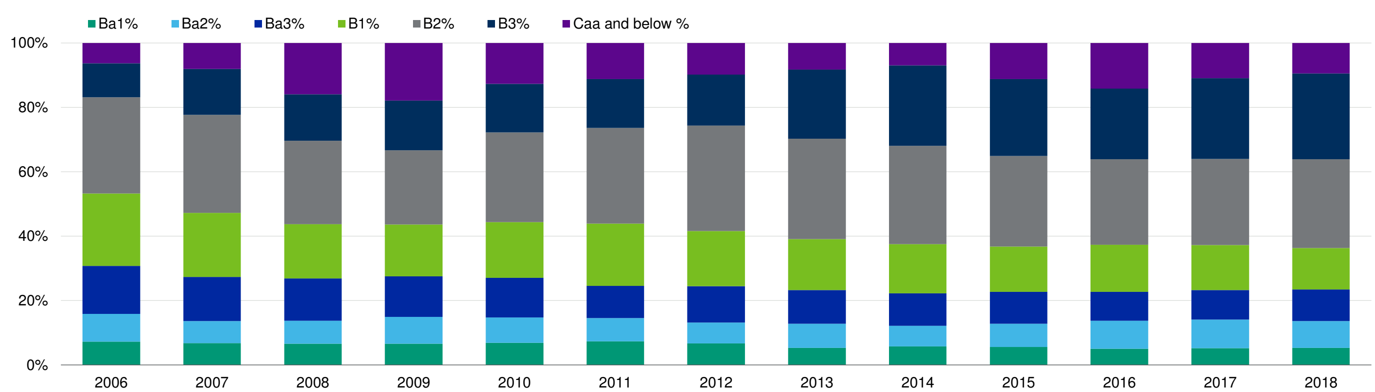


Source: Federal Reserve Bank; Moody's Investors Service

The flexibility to structure leveraged loans like high-yield bonds is particularly attractive to private equity firms, which have raised record levels of capital for LBOs (for more on what makes loans so attractive, see Appendix 2, page 10). The firms, which own a growing share of speculative grade companies, can obtain leveraged loans – at rates typically lower than fixed-rate securities -- with the financial and covenant flexibility that used to be available only to issuers of high-yield bonds. The private equity firms' predilection for high leverage, coupled with their shareholder orientation, has helped fuel a deterioration in credit quality that has been underway since the end of the financial crisis.

The deterioration in our rating distribution (see Exhibit 3, below) underscores this trend. As of mid-2018, 64% of spec-grade issuers had Corporate Family Ratings (CFRs) of B2 or lower, a big increase from 47% in 2006. The share of first-time issuers -- mainly those owned by private-equity funds -- rated B3 or lower has steadily grown and hit a record 43% in the first half of 2018. This is notable because B3 is typically the lowest rating acceptable to investors and default rates grow exponentially at progressively lower ratings.

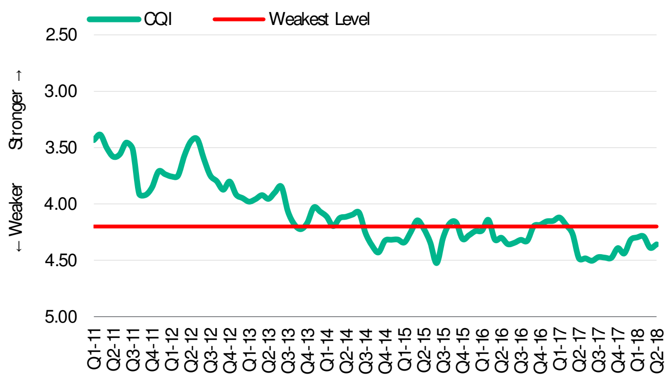
Exhibit 3
Speculative grade rating distribution has weakened



Source: Moody's Investors Service; exhibit is population of US-domiciled companies

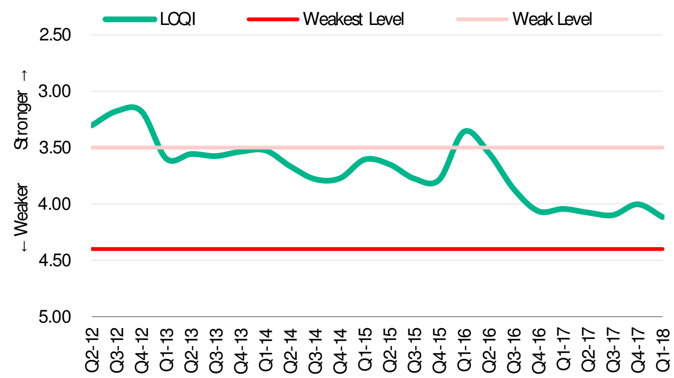
At the same time, deterioration in our proprietary Bond Covenant Quality Indicator (CQI) and Loan Covenant Quality Indicator (LCQI) demonstrate the progressive erosion of covenant protections, which puts investors at greater risk should borrowers contemplate a risky transaction or experience distress (see Exhibits 4 and 5, page 5).

Exhibit 4
Bond CQI



Source: Moody's Investors Service

Exhibit 5
Loan CQI



Source: Moody's Investors Service

These trends have translated into aggressive financial policies, deteriorating debt cushions, and a greater number of smaller and less creditworthy firms accessing the institutional loan market. They are creating credit risks that portend an extended and meaningful default cycle once the current economic expansion ends. This would mean more defaults than the last downturn as well as lower recoveries, which would undercut a foundational premise for investing in loans. Weakening covenant protections have the potential to upend or dilute the position of first-lien loans at the top of the capital structure.

Lower recoveries can occur through various means. Some of these pathways are highly visible, such as smaller debt cushions as a result of including a higher proportion of first-lien debt in capital structures. But other recovery risks are more nuanced. For example, structuring credit agreements to allow borrowers to make collateral stripping asset-transfers, issue dilutive incremental first-lien loans, and retain an increased portion of asset-sale proceeds, effectively reduces collateral support. All of these actions can weaken the position of current first-lien claims.

To be sure, the basic mechanisms of such provisions are not new. But the breadth and scope of borrowers' flexibility to take such actions within covenants has grown. This exposes first-lien lenders to greater potential harm if borrowers were to utilize the flexibility that their debt agreements permit. The likelihood of this happening is higher for borrowers with aggressive financial policies, such as those owned by private equity.

Aggressive financial policies, alongside covenant flexibility, lead to lower ratings

Financial policy is a primary rating consideration and aggressive policies, including use of high leverage, is embedded in our credit ratings. This is why most private-equity-owned firms are typically rated B2 and B3. Private-equity-owned issuers will strive for the most flexible credit agreements and bond indentures and their financially aggressive orientation is less constrained by contractual arrangements today than in the past. They prefer the optionality provided by loose covenants should their investments become distressed or if they decide to proceed with an aggressively-debt-financed acquisition or distribution. Our ratings consider the expectation that private-equity-owned companies will remain M&A focused, and that improved operating performance will often result in debt-financed distributions to shareholders.

The factors driving looser covenants in leveraged finance are embedded in our low ratings. Traditionally, looser covenant terms are associated with higher ratings. Investment-grade companies, for example, have the greatest covenant flexibility. This speaks to the primary importance of financial policy in ratings - how we expect companies to behave is just as important as covenant terms. That said, the rating distribution has deteriorated because of aggressive transactions and behavior. In addition, our loss given default assessments (LGDAs) have trended higher and debt instrument ratings have trended lower relative to CFRs, reflecting changes in debt capital structures to include a higher proportion of first-lien term loans. Importantly, our ratings performance has remained consistent despite the changing market conditions.

We believe we are witnessing "top-of-the-cycle" transactions. Perhaps there will initially be fewer defaults than when financial maintenance covenants were common. But borrowers that become distressed will be more vulnerable to shareholder-oriented strategies than in the past due to looser credit agreements and bond indentures. Recoveries on debt will likely be lower than historical averages in the next default cycle. The more frequent use of distressed exchanges, which can be a more expedient form of restructuring, may mitigate some losses because recoveries in a distressed exchange tend to be higher, with losses concentrated in junior debt and loans left unscathed. But distressed exchanges may not provide sufficient relief if an economic or default cycle stretches out over time. The risk of a subsequent default with lower recoveries is higher in such situations (for more on distressed exchanges and how they affect recoveries, see Appendix 3, page 10).

Strong liquidity and low default forecast allays investor concerns about risk, for now

While the balance of power has shifted to borrowers, investors can take comfort in the positive US economic outlook, strong issuer liquidity and a low default forecast. Our proprietary Liquidity Stress Indicator (LSI) has been hovering around historic lows for the past nine months. Our B3 Negative and Lower Indicator is also comfortably below average relative to the number of US spec-grade issuers. These indicators (see Exhibit 6), which provide a broad roadmap for monitoring fundamental credit conditions, point to a benign default environment over the next 12 months. We forecast that the US spec-grade default rate will drop to 2.2% over the next year, from today's 3.4%. This helps to ameliorate investor concerns about risk.

Exhibit 6

Credit Cycle Gauge

Leveraged Finance Heat Map

Indicator	Jul '18	Jul '17	LT Avg*	Record Worst
Liquidity Stress Indicator	3.2%	3.3%	6.5%	20.8%
B3-Neg / Lower	189	214	194	291
3-Year Refunding Indicator	3.30	4.3x	6.1x	1.5x
Bond Covenant Quality Indicator	4.27	4.48	4.07	4.52
Loan Covenant Quality Indicator	4.12	4.04	3.77	4.12
	Jul '19	Jul '18		
Default Rate (forecast)	2.2%	3.4%	4.7%	15.0%

	Trending Worse	Neutral	Improving

LCQI is calculated quarterly with latest data as of March 2018. *LT Avg: LSI: from 2002; B3-Neg: from 2007, Refunding: from 2007, CQI: from 2011, LCQI from 2012, default rate: from 1990.

Source: Moody's Investors Service

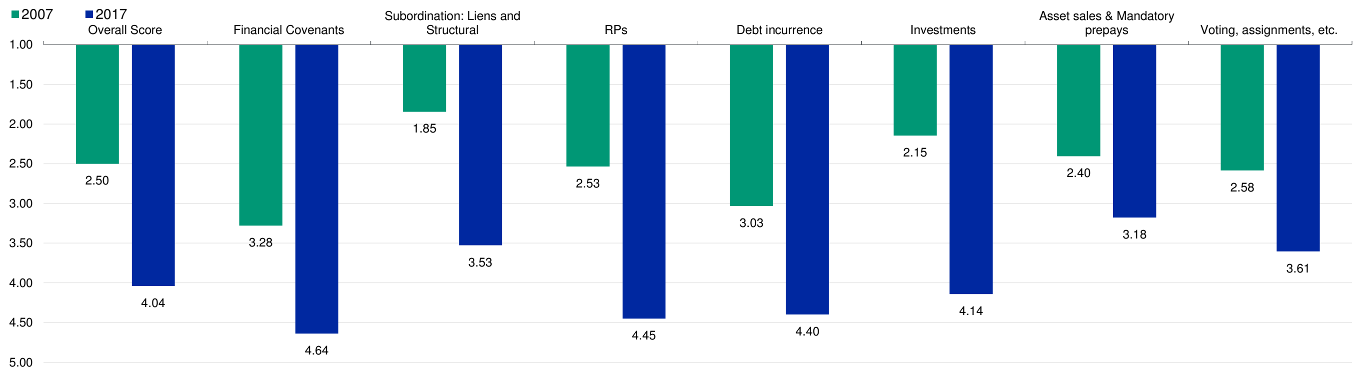
Nevertheless, we believe the weak rating distribution and deterioration in debt cushion create elevated risk of loss when the economic and credit cycle turns. Meanwhile, our Bond and Loan CQIs are at or near their historic worst, in large part because an increasing proportion of transactions fall into our weakest-category of investor credit protections. Thus, despite an improving US economy, credit quality has deteriorated even as weaker credit agreements and bond indentures impose fewer contractual restrictions on shareholders.

Contractual protections of loans and bonds are converging

Borrowers have steadily chipped away at distinguishing protections typically provided by leveraged loans and are adopting more bond-like characteristics instead. The rise of "cov-lite" loans is the most visible example of this trend. These loans, which lack meaningful financial maintenance covenants, now account for nearly 80% of the market, up from less than 25% in the 2006-2007 era, according to Thomson Reuters. Financial maintenance covenants provide loan investors with regular performance status checks, early warnings of deterioration in the borrower's performance, and a trigger to renegotiate terms or enforce remedies. Investors forfeit a potential economic benefit and face increased risk when these protections are absent.

In addition to cov-lite terms, borrowers – particularly those owned by private-equity firms – are securing other permissive, bond-like features in their credit agreements. By allowing actions such as collateral-stripping asset transfers, incremental secured-debt incurrence and permitting the retention of an increased portion of asset-sale proceeds, credit agreements are creating the potential to upend or dilute the position of first-lien loans at the top of the capital structure. While credit agreements became more flexible in the last credit cycle, they were still far more protective in 2007 than they are today (see Exhibit 7).

Exhibit 7
Loan Covenant Quality is weaker today than in 2007 across all risk categories



Source: Moody's Investors Service; scores on a scale of LCQ1 (strong) to LCQ5 (weakest).

The most high-profile example of a collateral-stripping asset transfer is J. Crew, which made headlines when it transferred intellectual property (IP) beyond the reach of the existing term loan investors in order to facilitate the issuance of a new bond collateralized by the IP. Proceeds were used to refinance existing debt in a transaction deemed a distressed exchange. J. Crew's actions increased investors' sensitivity to such risks, but many borrowers have long had the flexibility to transfer any assets, not just IP, in order to collateralize new debt and subordinate existing lenders' interest in the transferred assets to that of new lenders. What's more, borrowers can use cash flows from transferred assets to pay dividends rather than reinvest or prepay debt. These actions harm lenders who underwrote debt anticipating a first claim on the cash flows and collateral recovery value of assets that were instead transferred.

Asset sale and mandatory prepayment protections are also weakening, enabling borrowers to more easily sell collateral without sharing the proceeds with loan investors. These protections typically require borrowers to use the proceeds of asset sales to either pay down long-term debt or to reinvest in the company. Without such protections, borrowers facing deteriorating financial conditions can aggressively sell collateral while avoiding prepayment requirements.

Leverage-based exclusions to the asset-sale prepayment requirements are also on the rise. Lenders have historically expected that 100% of proceeds from asset sales would either go towards the prepayment of senior debt or be reinvested into the borrower's business. But that expectation has withered away, as exceptions have made their way into credit agreements in the form of leveraged-based step-downs. These step-downs permit borrowers to lower or possibly even eliminate prepayment requirements based upon hitting certain pre-defined leverage targets.

Excess cash flow sweep protections, a prepayment mechanism that requires borrowers to share excess cash with lenders, are also weakening. Step-downs to the excess cash flow sweep have been in the market for many years. But borrower-friendly provisions are increasingly allowing issuers to reduce their excess cash flow sweep payment obligations based on voluntary repayments of debt other than the term loans and further reducing the sweep amount based on the cash portion of tax expense, capital expenditures, permitted acquisitions and permitted investments. Such provisions significantly increase the borrower's ability to control the amount of the excess cash flow sweep. They are another instance where lenders may be alarmed to discover that an expected prepayment does not actually materialize. For distressed issuers, these changes to the credit agreement will help stave off liquidity constraints but are likely to eventually lead to lower loan recoveries than may have been originally anticipated.

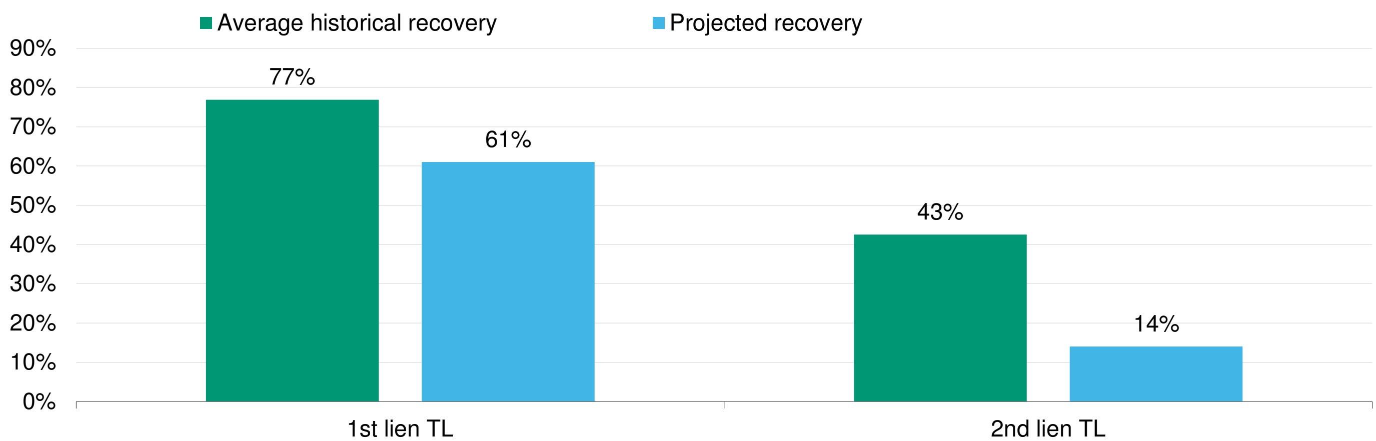
Lower debt instrument ratings reflect lower projected recoveries as debt cushions erode

What matters most when differentiating instrument recovery within a corporate family is the debt's relative position in the liability waterfall and the amount of debt cushion beneath it to absorb loss.[1] There's a high positive correlation between strong debt cushions and ultimate recovery rates based on our Ultimate Recovery Database with data going back to 1988.[2]

We expect recoveries to be lower in the next downturn due to changes in capital structure whereby first-lien debt has increased relative to subordinated debt. In addition, we utilize a 50% family recovery mean for structures with only first-lien debt that is covenant lite, and an above average 65% family recovery mean when a first-lien only structure includes financial maintenance covenants. Because of these factors and an increase in cov-lite first-lien only structures, expected recovery has weakened and debt instrument ratings are lower relative to CFRs. Based on our loss given default assessments (LGDAs) [3] we expect first-lien senior secured term loans to recover in the 61% range (see Exhibit 8), on average, versus the long-term historical average of 77% (from 1988 through 2018). For comparison, the expected recovery on first-lien senior secured term loans based on our LGDAs in 2008 was about 70%.

Exhibit 8

Current LGDAs point to lower recoveries



Historical recovery based on defaulted instruments in Moody's Ultimate Loss Given Default database; projected recovery based on LGD point estimates for loans issued by companies rated by Moody's US corporate finance group

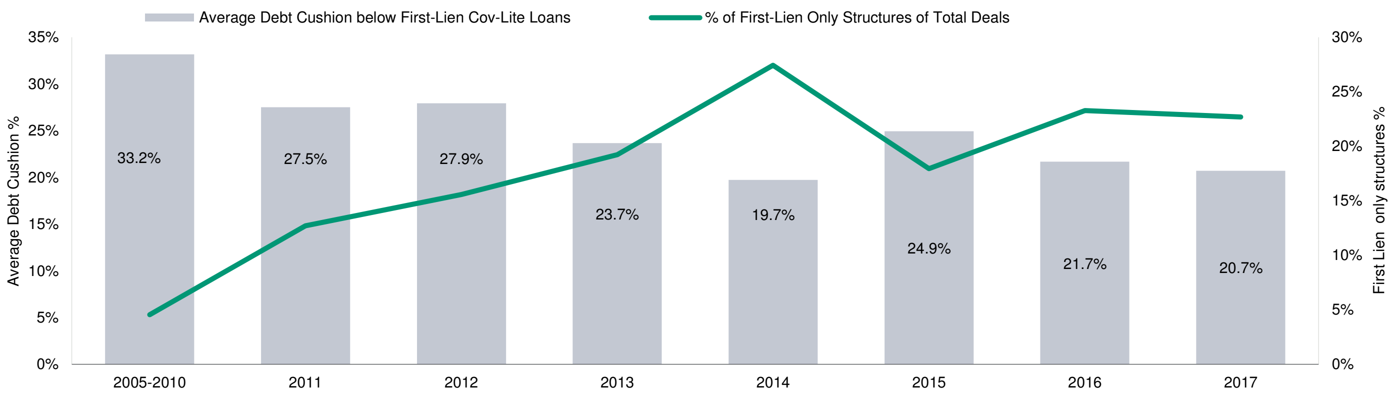
Source: Moody's Investors Service

When cov-lite loans initially appeared 10-15 years ago, banks typically required the loan to have a first-lien on collateral and sufficient loss-absorption capacity to protect loans in a default. That's why the average debt cushion of first-lien cov-lite loans originated before the credit crisis (what we call cov-lite 1.0) was a fairly comfortable 33%. However, as investors became less risk-averse in a low-yield environment, debt structures weakened and the recovery prospects of the current generation of cov-lite loans (what we call cov-lite 2.0) deteriorated.

Our review of 2016 and 2017 vintage loans show that debt cushions below first-lien cov-lite loans have eroded to about 20% (see Exhibit 9). In addition to the significant decrease in debt cushion, cov-lite loans are also more likely to be structured as first-lien only deals. In 2016 and 2017, roughly 25% of cov-lite deals were first-lien only versus just 5% in the cov-lite 1.0 era (see Exhibit 9).

Exhibit 9

Cov lite 2.0's deteriorating debt cushions



Source: Moody's Investors Service

Deterioration in credit structures is also negatively affecting potential recovery on second-lien debt. Due to the continued trend to structure second-lien loans more as the most junior debt instrument, rather than as mezzanine debt with unsecured debt below, we expect second-lien recovery prospects to resemble that of subordinated debt. Based on our LGDAs, we project the average recovery on second-lien debt will be around 14% versus the 43% historical average.

While all of this is troubling, as long as we can reasonably estimate capital structure, this should allow for an accurate estimate of LGD on a portfolio basis. More troubling would be the ability to change the debt structure without creditor approval, given the deterioration in the quality of credit protections in credit agreements. Such changes in debt structure would also translate into updated, likely higher, LGDAs.

Appendix 1: Tracking convergence

The current weakness in credit quality, debt structure and credit protection within loan agreements and bond indentures is offset today by the broad availability of capital and the positive US economic outlook. Our credit ratings and other unique information points including speculative grade liquidity ratings, associated bond and loan covenant quality scores (BCQ scores and LCQ scores) and debt structure assessments (LGDAs) forecast risks that may not manifest before a downturn in the credit cycle. They highlight the impact of risk-taking by speculative grade borrowers, primarily private equity, but also, in aggregate, the vulnerabilities within the leveraged finance sector broadly as well as the pressure on investors to lend.

At this unprecedented market peak, our unique data facilitates both transparency and differentiation among high yield bonds and leveraged loans. In addition to regular commentary on our proprietary leveraged finance broad market indicators included in our Credit Cycle Gauge, we will publish on an ongoing basis key data points for all covenant quality scored loans and bonds on a rolling 12 month basis. These will be helpful in staying ahead of impending trends. The first installment of this data set, **Moody's Credit Convergence Monitor**, is available here for your reference. It will be updated and discussed quarterly.

Appendix 2: The case for leveraged loans

Loans are attractive to investors for several reasons. They typically have collateral that create effective priority over unsecured debt, and floating-rate structures that enhance yield in a rising rate environment. These features have helped to increase foreign investor interest in loans, including through CLOs, which now represent roughly 60% of the US leveraged loan market.

Loans are also attractive to issuers. Because the initial rate on a loan is usually lower than on a fixed-rated bond, loans enable companies to keep their borrowing costs manageable even as they take on more leverage. Loans are redeemable sooner and at a lower cost than bonds, so they provide borrowers with greater capital structure flexibility to refinance if rates fall. Leveraged loans also have more forgiving prepayment features than high-yield bonds, including an ability to prepay without penalty and a soft-call that allows a refinancing without payment of a significant redemption premium. And they allow private equity firms to exit their investments more easily because they make it less expensive for potential buyers to pay off a portfolio company's existing debt.

Loans also enable borrowers to shield competitively-sensitive information, such as margins, from public disclosure. Bonds require issuers to satisfy disclosure requirements – an expensive process – which exposes borrowers to litigation risk in the event of any misstatements. Loans, by contrast, allow borrowers to keep their financial statements private. Importantly, in exchange, creditors generally had greater control over borrowers' financial decisions. However, thanks to the widespread use of "covenant lite," borrowers can structure their loans in a way that will provide them with the financial and covenant flexibility that used to only be available by issuing a bond. These changes in the market support our expectation that recoveries will be lower in the next downturn.

Appendix 3: How distressed exchanges affect recovery rates

The data demonstrating the importance of debt cushion is robust and compelling. But when LGDAs are compared with actual corresponding recoveries, distressed exchanges (DEs) can make the analysis less straight-forward. DEs became much more prevalent during the last crisis. They typically affect subordinated debt with the first-lien loan minimally affected and realizing very high or full recovery, affirming the market's confidence in the loan asset class.

The main drivers for DEs remain: significant PE ownership of high-yield companies; cost-effectiveness compared to bankruptcy restructurings; weak debt covenants; senior lenders' incentives; and better overall recovery prospects. Historically, senior bank debt typically did not default in a distressed exchange. However, the rate of re-defaults is increasing, as more and more companies that consummated DEs end up in bankruptcy.

Our study of 30 years of default history suggests that 41% of the time distressed exchanges did not shore up the capital structures of struggling companies enough to stave off another default — be it a bankruptcy or another DE. Failed DEs (with a majority of them stemming from the energy sector), contributed to a gradually rising re-default rate. The overall re-default rate of US non-financial corporates between 1987 and 2017 now stands at 23% vs. the 18% we calculated for a report published November 2015.

However, this may play out differently in a multi-year default cycle with more loan-only issuers. If a company is unable to improve operations, a distressed exchange that turns into a bankruptcy could end up with lower loan recoveries since there is generally less junior debt to absorb losses.

Moody's related publications

» Credit Convergence Monitor: Eroding protections continue to diminish structural differences between bonds and loans

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» US Corporate Default Monitor – Second Quarter 2018: Default rate retreats anew, aided by retail, July 2018

» The changing face of defaults – distressed exchanges and re-defaults, March 2018

» Cov-Lite Loans Dominate the Market, Will See Worse than Average Default Recoveries, May 2017

» Lessons from a Trillion Dollars in Defaults, April 2017

» First-Tier Risk for Second-Lien Debt, May 2016

» LGD Assessments Provide Accurate Forecasts of Losses on Defaulted Debts, October 2014

Covenant quality

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» North American Loan Covenant Quality Indicator – Protections hit weakest level on record as conditions continue to favor borrowers, July 2018

» Despite new "blocker" protections, J. Crew-style asset transfers still a risk, May 2018

» Loan investors face rising risk as traditional asset sale prepayment protections fall away, May 2018

» Lax protections allow low-rated issuers to add more risk at no cost, March 2018

» A lack of maintenance covenants is just the tip of the iceberg for today's cov-lite loans, November 2017

» Credit Agreements provide extraordinary dividend capacity at loan investors' expense, November 2017

» Bond Covenant Quality Scoring Criteria

» Bond Covenant Quality Snapshots User's Guide

» Loan Covenant Quality Scoring Criteria

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» SGL Monitor - US: LSI rises again but backdrop still supportive, August 2018

Newsletters

» Leveraged Finance Interest, July 2018

» Moody's B3 Negative and Lower Corporate Ratings List: List remains flat amid receptive credit markets, healthy economy, July 2018

Endnotes

1 Instrument recovery is also highly dependent on the overall recovery of the corporate family.

2 The importance of "debt cushion" as an underpinning of Moody's expected loss rating methodology is reflected in the review of ultimate recoveries on over 140 unique debt classes taken from 223 bankruptcies between 2006 and 2017. Performance of LGDAs at origination (by debt class) demonstrates the robust forecasting power of Moody's Loss Given Default (LGD) assessments. The assessments were compared to the actual ultimate recoveries taken from Moody's Ultimate Recovery database.

3 Loss given default assessments, or LGDAs, are determined based on our Loss Given Default Methodology and the associated model. LGDAs are provided for every speculative grade issuer and drive our debt instrument credit ratings. They are opinions about expected losses given default on fixed income obligations. They are expressed as a percentage of principal and accrued interest at the resolution of the default. Moody's introduced LGDAs in 2006 in order to increase the transparency and consistency underlying the assignment of individual loan and bond ratings. They are based on analysts' expectations of a company's liability structure at default, as well as the expected enterprise value of the company at emergence from default. Moody's analysts estimate enterprise value at emergence from default based on both the historical experience of defaulted issuers included in Moody's Ultimate Recovery Database (URD) and company-specific fundamental analysis.

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