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Corporate Defaults and Recoveries - US

Lessons from a Trillion Dollars in Defaults

» **Our Ultimate Recovery Database now covers nearly 5,500 debt instruments from more than 1,100 non-financial companies that defaulted between 1987 and 2016.** These companies' liabilities exceed $1 trillion. The trends we can tease out of this cache of data — how types of default change over time, how recoveries vary based on position in the debt structure, whether private-equity ownership shifts the equation — provide valuable insights for the next downturn.

» **Firm-wide recovery rates, which measure the enterprise value of a corporate family relative to total liabilities when a default is resolved, are widely dispersed, with a mean recovery rate of 55% and standard deviation of 28%.** The average discounted ultimate recovery rate on loans included in the database is 81%, while the median is 100%. Bonds average and median recoveries are 45% and 36%, respectively.

» **Recovery rates for specific debt instruments are significantly influenced by their ranking within the defaulted company's liability structure and the associated percentage of total debt both above and below that particular instrument.** For instance, second-lien debt recoveries are significantly higher in complex structures, where there is debt above and below it, than in simple structures, where there is no cushion below the second-lien debt.

» **The timing of default cycles also influence firm-wide recovery rates, with measured correlation based on the US speculative-grade default rate at the time of resolution.** Loan recovery rates are less cyclical than firm-wide recoveries, while bond recovery rates are more cyclical. By contrast, there is no relationship between ultimate firm-wide recovery rates and industry (as defined by Moody's.) Therefore, there's no observable relationship between recovery rates and asset-heavy or asset-light industries.

» **Private-equity ownership of defaulted companies also has little influence on firm-wide recovery rates, but does affect the type of default and the recoveries on certain types of debt.** Companies sponsored by the largest PE firms are much more likely to pursue distressed exchanges (DEs) as a restructuring tool, because it helps them to retain at least some ownership. Prevalence of DEs, prepacks and bank debt comprising a majority of the debt structure among PE defaulters, in general, result in higher losses for junior creditors.

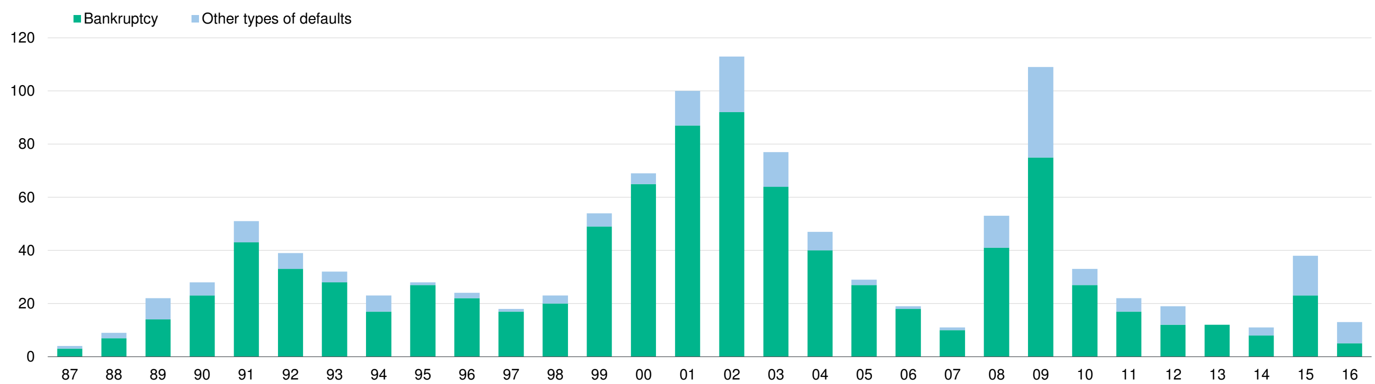
Ultimate Recovery Database Hits a New Milestone and Teaches a Few Lessons

Our Ultimate Recovery Database (URD) hit a new milestone of $1 trillion from more than 1,100 non-financial corporate defaults spanning from 1987 through year-end 2016. The database includes both Moody's rated and unrated US corporate borrowers with over $50 million in total debt at the time of default. As of March 2017, it contains detailed information on nominal and discounted ultimate recoveries for nearly 5,500 debt facilities (over 2,200 loans and 3,200 bonds.)

"Ultimate recovery," in contrast to 30-day trading prices that are often used to measure creditors' recovery rates, refers to the settlement value creditors received when the default was resolved. Exhibit 1 shows the annual distribution in the database by the year the default occurred, while Exhibit 2 illustrates the annual distribution by year of emergence from default. Both further divide the defaults into bankruptcies and other types of non-bankruptcy, out-of-court debt restructuring, mostly distressed exchanges (DEs).

Exhibit 1

Distribution by Year of Default

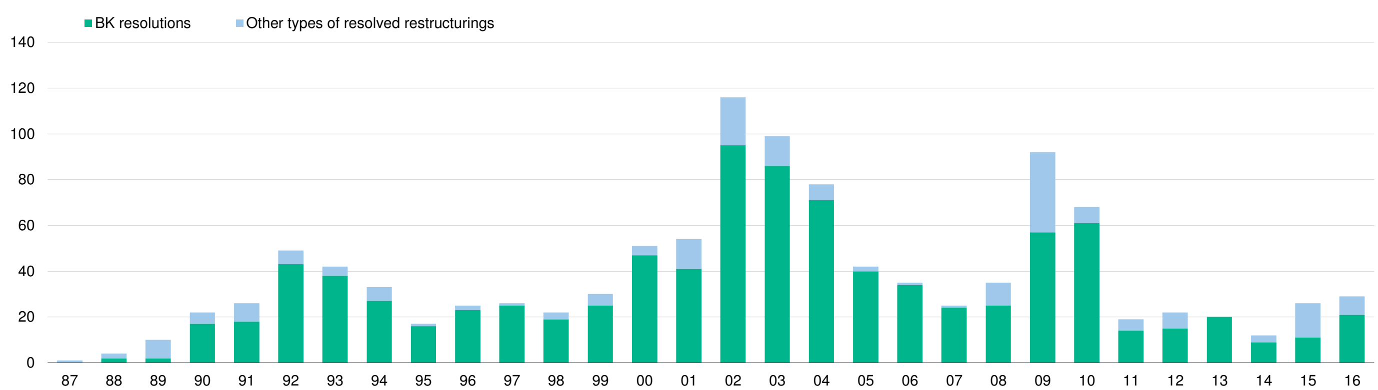


Source: Moody's Ultimate Recovery Database

Our database, as both exhibits 1 and 2 show, indicates the Great Recession default cycle, starting in 2008, differs from its predecessors in that it features an increased share of DEs. Their use was far more limited in the past, accounting for approximately 15% of defaults between 1987 and 2007. That figure has increased to nearly half since then.

Exhibit 2

Distribution by Year Default Was Resolved



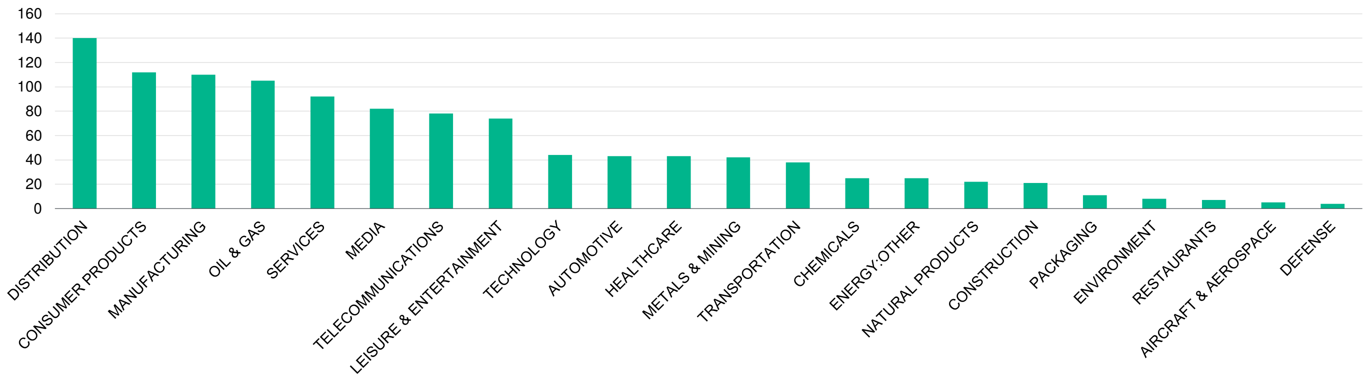
Source: Moody's Ultimate Recovery Database

Records of resolved defaults, both DEs and bankruptcies, across industries (as defined by Moody's) are shown in Exhibit 3. Historically, Distribution, Consumer Products, and Manufacturing produced the most defaults. The database generally reflects the speculative-grade industries that Moody's rates.

The default rate for Moody's-rated speculative-grade issuers is forecast to decline to 3.0% in 2017, from 4.5% in 2016, when more than half of defaults were from the Oil & Gas and Metals & Mining industries.

Exhibit 3

Distribution, Consumer Products Dominate Other Industries in Terms of Recorded Defaults



Distribution industry includes mainly stores, distribution centers; Energy:Other includes utilities, coal companies

Source: Moody's Ultimate Recovery Database

Lesson 1: Debt Structure Matters, Certainly More Than What You Call the Debt

As would be expected, senior debt holders realize higher recovery rates than those lower in payment priority. Our data in Exhibit 4, which breaks down the mix of debt types across nearly 5,500 debt facilities, shows average ultimate recovery rates demonstrate a positive correlation with the priority of claims in the capital structure. The average discounted ultimate recovery rate on loans included in the database is 81%, while the median is 100%. Bonds' average and median recovery rates are 45% and 36%, respectively. As discussed earlier, default type influences debt's recovery rate, for instance, the data in Exhibit 4 includes both bankruptcies and DEs. With only bankruptcies in the mix , an average recovery on Senior Unsecured Bonds drops, from 48% to 40%.

Firm-wide recovery rates of 1,134 defaults between 1987-2016, which measure the enterprise value of the corporate family relative to its total liabilities at default resolution, are widely dispersed with a mean recovery rate of 55% and a standard deviation of 28%.

Exhibit 4

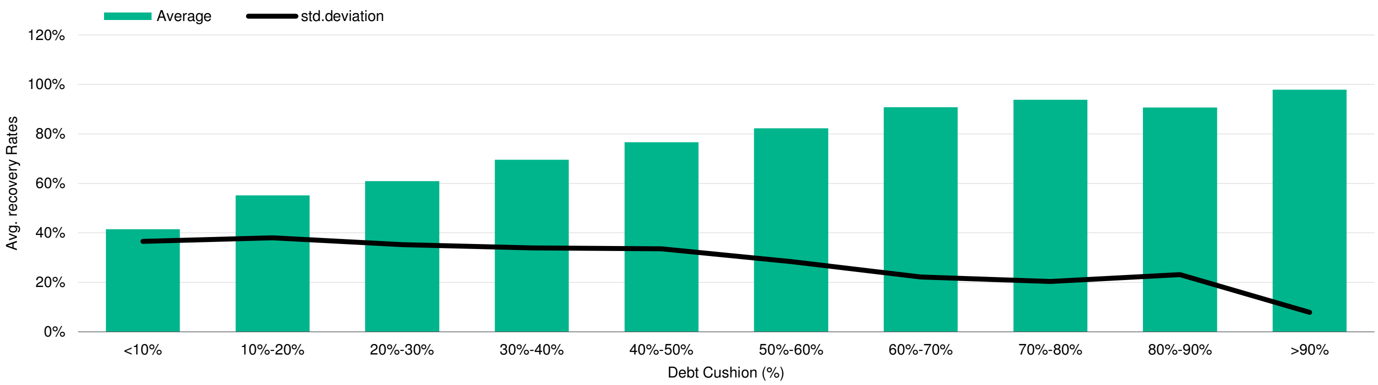
Average Discounted Ultimate Recovery Rates by Debt Type

Debt Instrument	Average Recovery Rate	Counts
Revolver	86%	1129
Term Loan	75%	1072
Senior Secured Bonds	62%	728
Senior Unsecured Bonds	48%	1547
Senior Subordinated Bonds	29%	532
Subordinated Bonds	29%	387
Junior Subordinated Bonds	21%	77
Total Bank Debt	81%	2201
Total Bonds	45%	3271
Firm-Wide recovery	**55%**	**1134**

Source: Moody's Ultimate Recovery Database

What the instrument is called does not matter much, but its relative position in the liability waterfall does. Our data continues to reinforce the significance of a debt instrument's location in a company's capital structure and the amount of debt cushion beneath it. There's a high positive correlation of debt cushion with ultimate recovery rates, as shown in Exhibit 5.

Exhibit 5
Debt Cushion Enhances Recoveries

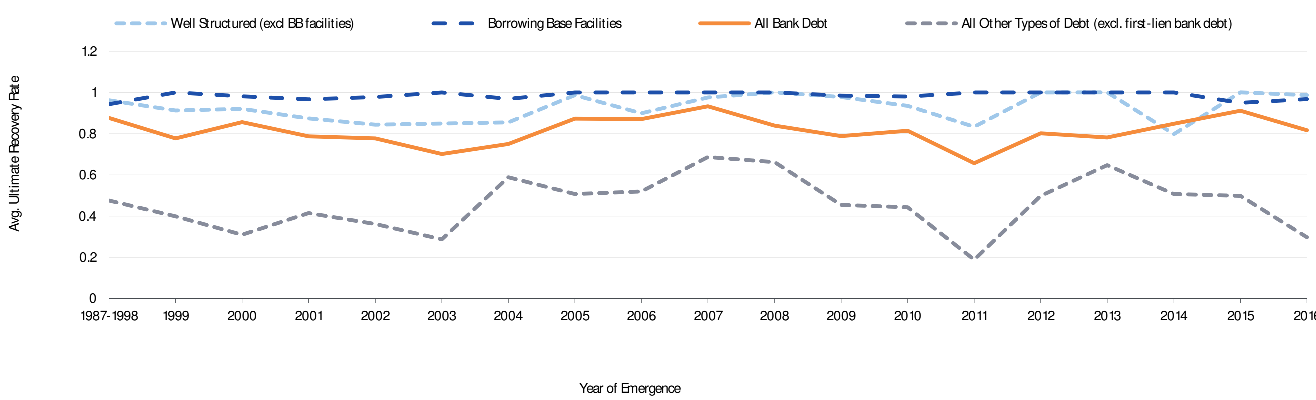


Source: Moody's Ultimate Recovery Database

A debt tranche's position on the balance sheet and the overall firm-wide recovery rate, rather than how it is described, are the key factors. For instance, Exhibit 6 shows variation in historical recoveries for different types of "bank debt."

Borrowing-base facilities consistently performed well, exhibiting low volatility in recoveries between 1987 and 2016, as did well-structured bank debt (which we defined as loans and revolvers secured by a first lien on all assets with a debt cushion equal to or greater than 40%.) When lower-ranked and less heavily secured loans are added into the bank-debt mix, the variation of average recovery rates increases, and overall average recoveries are below those of better-structured counterparts, as demonstrated by the dark blue line in Exhibit 6.

Exhibit 6
Recovery Rates of Better Structured Bank Debt Exhibit Less Volatility Over the Years

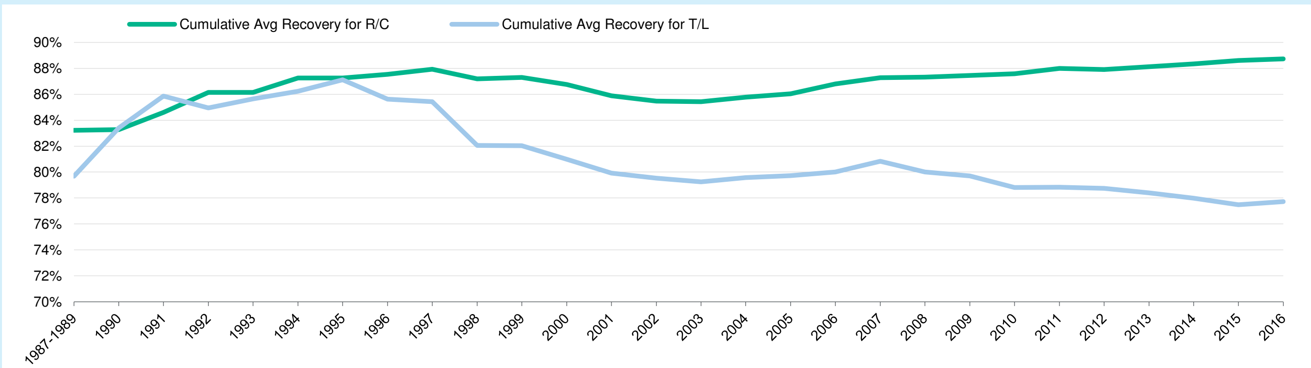


"All other Types of Debt" include sub bank debt (such as second-lien, unsecured loans, etc) and all types of bonds.
Source: Moody's Ultimate Recovery Database

Recoveries on Term Loans, Versus Those of Revolvers, Continue to Diverge

In the quaint old days, say around 1995, “bank debt” could usually mean debt that was senior, secured and top ranked in the debt structure. Research produced from the Ultimate Recovery Database (URD) would often lump the two instrument types together under the heading of “bank debt.” The cumulative average recovery rates for revolvers (R/Cs) and term loans (T/Ls) were roughly similar until around 1995. Since then, revolver recovery rates have remained in the mid- to upper-80s, while that of T/Ls has steadily decreased to the high-70s, a roughly 10% difference, see Exhibit 7.

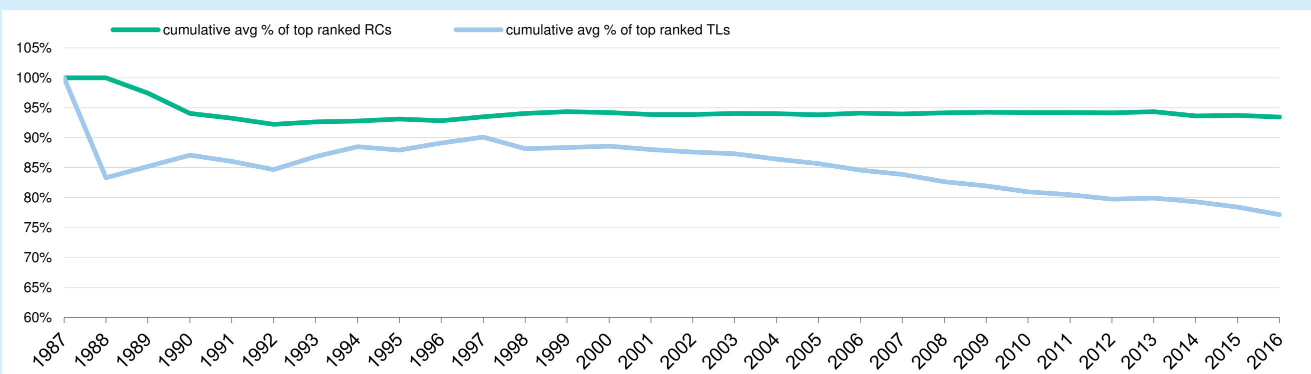
Exhibit 7



Source: Moody's Ultimate Recovery Database

What is the cause for this? How often a R/C or a T/L was the top-ranked debt in the debt structure of a defaulted company in the URD has an influence, see Exhibit 8. While the R/Cs almost always remained at the top, the percentage of T/Ls that were top-ranked debt in a defaulted company declined steadily from the mid-90s to the low-80s.

Exhibit 8



Source: Moody's Ultimate Recovery Database

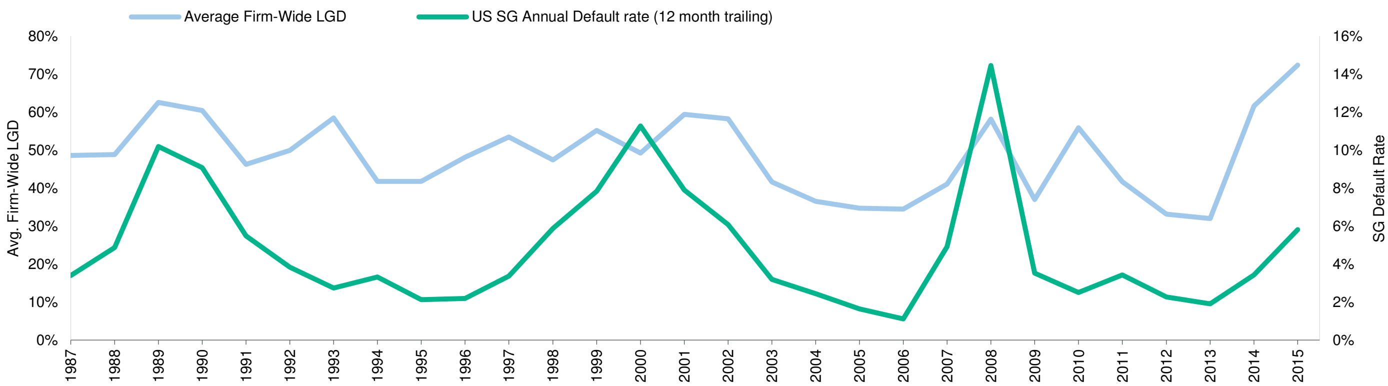
Clearly, it is often unwise to lump all R/Cs and T/Ls together under a generic heading of “bank debt” when attempting to analyze LGD. For several years, most of our research has evolved into analysis based on first-lien bank debt, unsecured bank debt, etc. It makes one long for the old days when analyzing “bank debt” was enough.

Lesson 2: Recoveries Are Negatively Influenced by Default Rates, But Industry Rarely Matters

Firm-wide recovery rates of defaulted debt issuers have historically shown a negative correlation with US spec-grade default rate. Losses are exacerbated during default peaks and less pronounced during more benign credit cycles, as shown in Exhibit 9.

Exhibit 9

Losses Climb When the Default Rate is Peaking



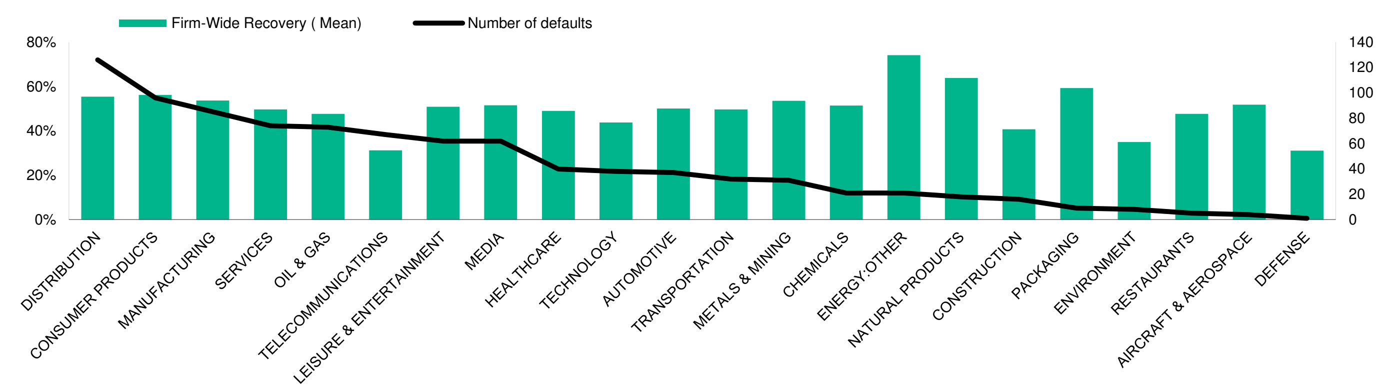
Only bankruptcies were included

Source: Moody's Ultimate Recovery Database

On the other hand, there's relatively little variation in firm-wide recovery rates among the industries, as shown in Exhibit 10. Fifteen industries with at least 20 or more defaulters (out of 22 tracked sectors) have average firm-wide recovery rates that fall between 31% and 74%, with a standard deviation of 9% — and industries with less than 10 defaulters have firm-wide recovery rates in the same range, but with a standard deviation of 12%.

Exhibit 10

Firm-Wide Recovery Rates by Industry



Only bankruptcies were included

Source: Moody's Ultimate Recovery Database

Further evidence that industry is unimportant in determining firm-wide ultimate recovery rates is shown in Exhibit 11, which shows firm-wide recovery rates for asset-heavy and asset-light industries and observed very little difference. Please view our detailed list of asset-heavy and light industries with a number of recorded default resolutions in the Appendix of this report.

Exhibit 11
Asset-Light or Asset-Heavy Has Little Bearing on Firm-Wide Recoveries

	Bankruptcies	Population Size	Other forms of restructurings	Population Size
Asset Heavy	49%	419	75%	114
Asset Light	52%	510	71%	91

Source: Moody's Ultimate Recovery Database

A high level of defaults in a particular industry, such as what occurred in the oil and gas sector in 2016 and telecom in 2002, can lead to extraordinarily low firm-wide recovery rates for defaulted companies emerging during those years, as we noted in previous research. The 12-month trailing spec-grade default rates for those years and industry groups were 14.1% and 14.4% and the corresponding firm-wide recovery rates in the database were 34.1% and 30.2%, respectively.

Lesson 3: Firm-Wide Recoveries Vary Little Based on PE Sponsorship, Due to Their Tactics

Due to different strategies, average firm-wide recoveries of companies with private equity sponsors are approximately the same as those of companies with no PE presence. The 56% average firm-wide recovery rate for creditors of companies with a private-equity sponsor was very close to the 55% recoveries of those without PE backing, as shown in Exhibit 12.

However, our review of 226 PE-sponsored deals in Moody's URD (1987-2016) confirmed the presence of a PE sponsor resulted in junior creditors suffering greater losses. Differences in debt instrument-level recoveries in bankruptcies were clearer, with junior debt holders bearing the brunt of losses. Senior unsecured bonds on the balance sheets of PE defaulters recovered 24 cents on a dollar — about half of 43% recovered by their counterparts.

Exhibit 12
Defaults That Included PE Sponsors Hurt Junior Debtholders Most

Bankruptcies, DEs (including non-defaulted debt tranches)					
Defaulted Companies with PE Sponsors			Defaulted Companies without PE Sponsors		
Debt Instrument	**Average Recovery Rate**	**Counts**	**Debt Instrument**	**Average Recovery Rate**	**Counts**
First-Lien Bank Debt	84%	511	First-Lien Bank Debt	85%	1320
Sub Bank debt	46%	93	Sub Bank debt	56%	195
Senior Unsecured Bonds	42%	231	Senior Unsecured Bonds	49%	1261
Subordinated Bonds	25%	178	Subordinated Bonds	27%	734
Family recovery	**56%**	**226**	**Family recovery**	**55%**	**856**

Bankruptcies only (excluding non-defaulted debt tranches)					
Defaulted Companies with PE Sponsors			Defaulted Companies without PE Sponsors		
Debt Instrument	**Average Recovery Rate**	**Counts**	**Debt Instrument**	**Average Recovery Rate**	**Counts**
First-Lien Bank Debt	80%	387	First-Lien Bank Debt	82%	1106
Sub Bank debt	33%	65	Sub Bank debt	53%	182
Senior Unsecured Bonds	24%	132	Senior Unsecured Bonds	43%	995
Subordinated Bonds	17%	142	Subordinated Bonds	20%	634
Family recovery	**50%**	**174**	**Family recovery**	**51%**	**719**

Source: Moody's Ultimate Recovery Database

That occurred because PE-sponsored defaulters had a meaningful amount (60%) of senior debt above senior unsecured bonds, twice as high as the percentage (30%) of companies without any sponsor. This means senior-secured creditors were ahead of subordinated debt to receive bankruptcy settlements/repayments, and there was little left for those at the bottom of the debt waterfall when the bankruptcy was resolved.

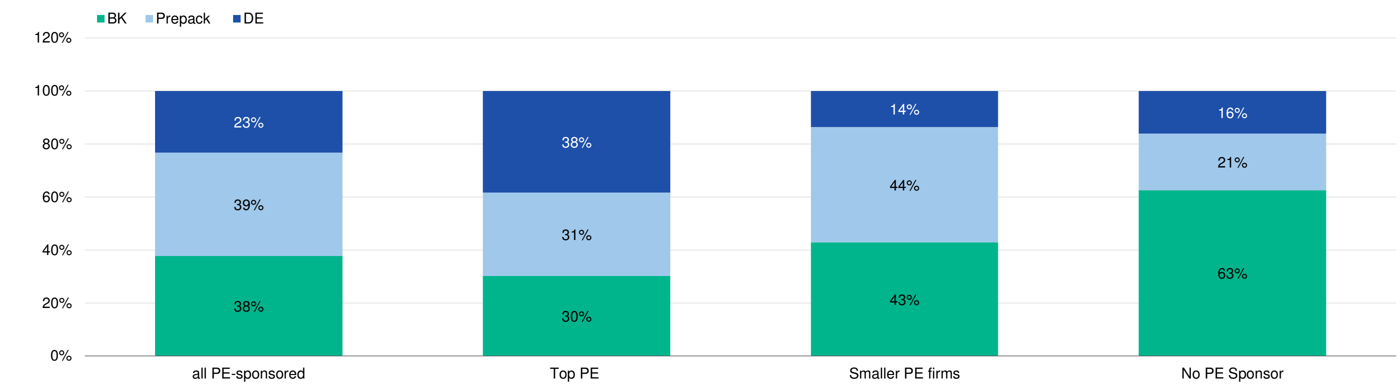
In general, PE-sponsored companies have a higher percentage of bank debt in their debt structure compared with non-sponsored companies. Bank debt usually has a higher recovery rate than that of other debt instruments. The difference in bank debt as the percentage of total debt at default, and its higher recovery rate, has led to the interesting “optical illusion” where PE-sponsored companies have lower recovery rates for each type of debt instrument compared with non-sponsored companies and yet produce substantially similar firm-wide recovery rates.

Another reason firm-wide recoveries of defaulted, PE-sponsored companies were close to those of non-PE defaulters, was the high proportion of DEs and pre-packaged bankruptcies in the PE default mix, as shown in Exhibit 13. The largest PE firms tend to favor distressed exchanges, which historically produced the highest average recovery for any type of default, as a restructuring tool because DEs help them to retain at least some ownership position.

Exhibit 13

Default Type Drives Recoveries of PE-sponsored Deals

Large PE Firms Favor DEs as a Restructuring Tool



Top 14 PE Firms: Apollo, Bain, Blackstone, Carlyle, Cerberus, Goldman Sachs, JP Morgan, KKR & Co, Madison Dearborn, Providence Equity, TH Lee, TPG, Warburg Pincus, Welsh Carson.
Source: Moody's Ultimate Recovery Database

More than one-third of the top PE leveraged buyout defaults in our database were DEs. That is three times more than the number executed by companies with a smaller PE sponsor or defaulted companies that had no PE backing.

The overwhelming majority of the latter companies, or 63% of all the examples in our review, filed for a court-supervised bankruptcy protection, a rate almost twice as high as companies sponsored by the top 14 PE sponsors or by companies with a smaller PE sponsor. The average family recovery data shows DEs historically produced the highest average recoveries, regardless of the presence of a PE sponsor. In the case of DEs, in our database we allocate a full recovery for the debt instruments that were not part of debt restructuring. Hence, firm-wide recovery rates were high among DEs, even though the defaulted debt that was subject to the exchange incurred large losses.

Appendix

Exhibit 14
Number of Resolved Defaults by Industry

Asset Heavy Industries	Bankruptcies	Other forms of restructurings
AIRCRAFT & AEROSPACE	4	1
AUTOMOTIVE	37	6
CHEMICALS	21	4
CONSTRUCTION	16	5
DEFENSE	1	3
ENERGY:OTHER	21	4
ENVIRONMENT	8	0
MANUFACTURING	85	25
METALS & MINING	31	11
NATURAL PRODUCTS	18	4
OIL & GAS	73	32
RESTAURANTS	5	2
TELECOMMUNICATIONS	67	11
TRANSPORTATION	32	6

Asset Light Industries	Bankruptcies	Other forms of restructurings
CONSUMER PRODUCTS	96	16
DISTRIBUTION	126	14
HEALTHCARE	40	3
LEISURE & ENTERTAINMENT	62	12
MEDIA	62	20
PACKAGING	9	2
SERVICES	74	18
TECHNOLOGY	38	6

Distribution industry includes mainly stores, distribution centers; Energy: Other includes coal, utilities companies
Source: Moody's Ultimate Recovery Database

Moody's Related Research:

Special Comments

- » Corporate Default and Recovery - US: private Equity Tactics Keep Firm-Wide Recoveries Close to Average (November 2016)
- » Corporate Default and Recovery - US: Lessons Learned from the 2015 Oil Bust (September 2016)
- » Corporate Default and Recovery - US: First-Tier Risk for Second-Lien Debt (May 2016)
- » Corporate Default and Recovery - US: For High-Yield, 2015 Was a Year of Discontent (February 2016)
- » Corporate Default and Recovery - US: Distressed Exchanges Remain Frequent Thanks to Oil and Gas, PE Firms (November 2015)
- » Corporate Default and Recovery - US: What May Happen in the Next Default Cycle Given Falling Credit Quality (August 2015)

Default Reports

- » February Default Report: Global speculative-grade default rate expected to fall to 2.6% in one year (March 2017)
- » Annual Default Study: Corporate Default and Recovery Rates, 1920-2016 (February 2017)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

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