

Article Title: ARCHIVE | Criteria | Corporates | Recovery: Criteria Guidelines For Recovery Ratings On Global Industrials Issuers' Speculative-Grade Debt Data: (EDITOR'S NOTE: — This article has been superseded by "Recovery Rating Criteria For Speculative-Grade Corporate Issuers," published Dec. 7, 2016. On April 20, 2015, we added a Frequently Asked Questions section to this article. On Oct. 20, 2015, we added more material to this section. We originally published this criteria article on Oct. 20, 2008. We republished this article following our periodic review completed on Jan. 22, 2016. As a result of our 2014 review, we updated the author contact information. The criteria article titled, "Methodology: Jurisdiction Ranking Assessments," published on Jan. 20, 2016, supersedes the section titled Jurisdiction-Specific Adjustments For Recovery And Issue Ratings. The criteria article titled, "Revised Revolver Usage Assumptions For Recovery Analysis In Corporate Ratings," published on Nov. 20, 2014, supersedes the section related to revolving credit facility and asset-based lending facility drawdown assumptions. This article partially supersedes the article titled, "2008 Corporate Criteria: Rating Each Issue," published on April 15, 2008.) Standard & Poor's Ratings Services has been assigning recovery ratings--debt instrument-specific estimates of post-default recovery for creditors--since December 2003. At that time, we began issuing recovery ratings and analyses for all new secured bank loans in the U.S. Since that time, we have steadily expanded our recovery ratings to cover secured debt issued in other countries and, in March 2008, to unsecured and subordinated debt instruments. At the time of this article, Standard & Poor's has recovery ratings on more than 2,500 secured and 2,300 unsecured debt instruments issued in approximately 32 countries. Our recovery ratings are currently concentrated in the U.S. and Western Europe, but also include various jurisdictions in Asia, Latin America, Eastern Europe, and Africa. This article provides an overview of Standard & Poor's general recovery analysis approach for global Industrials issuers, including specific jurisdictional considerations for the U.S. market. This framework is the basis for our recovery methodology worldwide although, where appropriate, our analysis is tailored to consider jurisdiction-specific features that impact the insolvency process and creditor recovery prospects. Recovery Ratings For Global Industrials--Definition And Context Recovery ratings assess a debt instrument's ultimate prospects for recovery of estimated principal and pre-petition interest (i.e., interest accrued but unpaid at the time of default) given a simulated payment default. Standard & Poor's recovery methodology focuses on estimating the percentage of recovery that debt investors would receive at the end of a formal bankruptcy proceeding or an informal out-of-court restructuring. Lender recoveries could be in the form of cash, debt or equity securities of a reorganized entity, or some combination thereof. We focus on nominal recovery (versus discounted present value recovery) because we believe that discounted recovery is better identified independently by market participants that are best positioned to apply their own preferred discount rate to our nominal recovery. However, in jurisdictions with creditor-unfriendly features, we will cap both recovery ratings and issue ratings to account for incremental uncertainty. While informed by historical recovery data, our recovery ratings incorporate fundamental deal-specific, scenario-driven, forward-looking analysis. They consider the impact of key structural features, intercreditor dynamics, the nature of insolvency regimes, multijurisdictional issues, and potential changes in recovery valuation after a simulated default. Ongoing surveillance through periodic and event-specific reviews help ensure that our recovery ratings remain forward looking by monitoring developments in these issues and by evaluating the impact of changes to a borrower's business risks and debt and liability profile over time. We acknowledge that default modeling, valuation, and restructuring (whether as part of a formal bankruptcy proceeding or otherwise) are inherently dynamic and complex processes that do not lend themselves to precise or certain predictions. These processes invariably involve unforeseen events and are subject to extensive negotiations that are influenced by the subjective judgments, negotiating positions, and agendas of the various stakeholders. Even so, we believe that our methodology of focusing on a company's unique and fundamental credit risks--together with an informed analysis of how the composition and structure of its debt, legal organization, and nondebt liabilities would be expected to impact lender recovery rates--provides valuable insight into creditor recovery prospects. In this light, our recovery ratings are intended to provide educated approximations of post-default recovery rates, rather than exact forecasts. Our analysis also endeavors to comment on how the specific features of a company's debt and organizational structure may affect lender recovery prospects. Of course, not all borrowers will

default, but our recovery ratings, when viewed together with a company's risk of default as estimated by Standard & Poor's corporate credit rating, can help investors evaluate a debt instrument's risk/reward characteristics and estimate their expected return. Our approach is intended to be transparent (within the bounds of confidentiality), so that market participants may draw value from our analysis itself rather than merely from the conclusion of the analysis.

Recovery Rating Scale And Issue Rating Framework

The table summarizes our enhanced issue rating framework. The issue rating we apply to the loans and bonds of companies with speculative-grade corporate credit ratings is based on the recovery rating outcome for the specific instrument being rated. Issues with a high recovery rating ('1+', '1', or '2') would lead us to rate the loan or bond above the corporate credit rating, while a low recovery rating ('5' or '6') would lead us to rate the issue below the corporate credit rating.

Recovery Rating Scale And Issue Rating Criteria FOR ISSUERS WITH A SPECULATIVE-GRADE CORPORATE CREDIT RATING

RECOVERY RATING*	RECOVERY DESCRIPTION	NOMINAL RECOVERY EXPECTATIONS†	ISSUE RATING NOTCHES RELATIVE TO CORPORATE CREDIT RATING
1+	Highest expectation, full recovery 100%	+3 notches	1
1	Very high recovery 90%-100%	+2 notches	2
2	Substantial recovery 70%-90%	+1 notch	3
3	Meaningful recovery 50%-70%	0 notches	4
4	Average recovery 30%-50%	0 notches	5
5	Modest recovery 10%-30%	-1 notch	6
6	Negligible recovery 0%-10%	-2 notches	

*As noted above, recovery ratings in certain countries are capped to adjust for reduced creditor recovery prospects in these jurisdictions. Furthermore, the recovery ratings on unsecured debt issued by corporate entities with corporate credit ratings of 'BB-' or higher are generally capped at '3' to account for the risk that their recovery prospects are at greater risk of being impaired by the issuance of additional priority or pari passu debt prior to default. †Recovery of principal plus accrued interest at the time of default on a nominal basis. §Very high confidence of full recovery resulting from significant overcollateralization or strong structural features.

Jurisdiction-Specific Adjustments For Recovery And Issue Ratings

Standard & Poor's due diligence for extending recovery ratings beyond the U.S. has entailed an assessment of how insolvency proceedings in practice in various countries affect post-default recovery prospects. This work has enabled us to consistently incorporate jurisdiction-specific adjustments when we assign recovery and issue ratings outside the U.S. With the help of local insolvency practitioners, we have assessed each jurisdiction's creditor friendliness in theory as well as how the law works in practice. For the latter, we so far lack empirical data, as outside of the U.S. very little reliable historical default and recovery data is available to verify in practice the predictability of insolvency proceedings and actual recovery rates. We will refine and update our analysis and methodology over time as we gather more actual loss data and practical evidence, notably for countries which have recently enacted significant legal reforms such as Mexico, France, and Italy. The four main factors that shape our analysis of the jurisdictions' creditor friendliness are: Security, Creditor participation/influence, Distribution of value/certainty of priorities, and Time to resolution. Based on the score reached on each of these factors, we have classified the reviewed countries into three categories, according to their creditor-friendliness. This classification has enabled us to make jurisdiction-specific adjustments to our recovery analysis. Namely, relative to our standard assignment of recovery and debt issue ratings, we cap both recovery ratings and the differential between the issuer credit and debt issue ratings in countries if and to the extent we expect the recovery process and actual recovery rates to be negatively affected by insolvency regimes that favor debtors or other noncreditor constituencies. We believe that by transparently overlaying analytical judgment on top of pure numerical analysis, we increase the transparency and consistency of our assessments of the impact of countries' insolvency rules--especially those that are less creditor friendly when assigning recovery and issue ratings. To review the details of our adjustments, the grouping of various countries into groups with similar characteristics, and the extent of our issue-notching caps for each group, see "Update: Jurisdiction-Specific Adjustments To Recovery And Issue Ratings," published June 20, 2008, on RatingsDirect. In addition to the insolvency regimes discussed in this report, Standard & Poor's has subsequently published country specific reports on the insolvency laws of other countries.

General Recovery Methodology And Approach For Global Industrials

Recovery analytics for Industrials issuers has three basic components: (1) determining the most likely path to default for a company; (2) valuing the company following default; and (3) distributing that value to claimants based upon the relative priority of each claimant. Our analytical process breaks down these components into the following

steps: Establishing a simulated path to default; Forecasting the company's cash flow at default based on our simulated default scenario; Determining an appropriate valuation for the company following default; Identifying and estimating debt and nondebt claims in our simulated default scenario; Determining the distribution of value based on relative priorities; Assigning a recovery rating (or ratings), including a published "recovery report" that summarizes our assumptions and conclusions.

Establishing a simulated path to default This step is a fundamental part of Standard & Poor's default and recovery analysis because we must first understand the forces most likely to cause a default before we can estimate a reasonable level of cash flow at default or value a company. This step draws on the company and sector knowledge of Standard & Poor's credit analysts to formulate and quantify the factors most likely to cause a company to default given its unique business risks and the financial risk inherent in the capital structure that we are evaluating in our default and recovery analysis. At the outset of this process, we deconstruct the borrower's cash flow projections to understand management's general business, industry, and economic expectations. Once we understand management's view, we make appropriate adjustments to key economic, industry, and firm specific factors to simulate the most likely path to a payment default. Forecasting cash flow at default The simulated default scenario is our assessment of the borrower's most likely path to a payment default. The "insolvency proxy" is the point along that path at which we expect the borrower to default. In other words, the insolvency proxy is the point at which funds available plus free cash flow is insufficient to pay fixed charges:
$$\frac{\text{Funds available} + \text{Free cash flow}}{\text{Fixed charges}} \leq 1.0$$
 The terms in this equation are defined as: Funds available. The sum of balance sheet cash and revolving credit facility availability (in excess of the minimal amount a company needs to operate its business at its seasonal peak). Free cash flow. EBITDA in the year of default, less a minimal level of required maintenance capital expenditures, less cash taxes, plus or minus changes in working capital. For default modeling and recovery estimates, our EBITDA and free cash flow estimates ignore noncash compensation expenses and do not use Standard & Poor's adjustments for operating leases. Fixed charges. The sum, in the year of default, of: Scheduled principal amortization (We generally do not include "bullet" or "ballooning" maturities as fixed charges, as lenders typically would expect such amounts to be refinanced and would presumably be reluctant to force a company into default that can otherwise comfortably service its fixed charges. Consequently, our default and recovery modeling will typically assume that additional business and cash flow deterioration is necessary to trigger a default.); Required cash interest payments (including assumed increases to LIBOR rates on floating-rate debt and to the margin charged on debt obligations that have maintenance financial covenants); and Other cash payments the borrower is either contractually or practically obligated to pay that are not already captured as an expense on the borrower's income statement. (Lease payments, for example, are accounted for within free cash flow and, thus, are not considered a fixed charge.) The insolvency proxy at the point of projected default may be greater than 1.0x in a few special circumstances: For "strategic" bankruptcy filings, when a borrower may attempt to take advantage of the insolvency process primarily to obtain relief from legal claims or onerous contracts; When a borrower may rationally be expected to retain a greater amount of cash (e.g., to prepare for a complex, protracted restructuring; if it is in a very capital-intensive industry; or if it is in a jurisdiction that does not allow for super-priority standing for new credit in a post-petition financing); and When a borrower's financial covenants have deteriorated beyond the level at which even the most patient lender could tolerate further amendments or waivers. (Lenders with no financial covenants have effectively surrendered this option and have reduced their ability to influence company behavior.) Conversely, free cash flow may decline below the insolvency proxy when the borrower's operating performance is expected to continue to deteriorate due to cyclical or business model contraction resulting from the competitive and economic conditions assumed in the simulated default scenario. In any event, our analysis will identify the level of cash flow used as the basis for our valuation. Determining valuation Valuing a company is a critical component in default and recovery analysis because it is important to start with a reasonable valuation (given our simulated default scenario) before we move to the next step of distributing this value to the various lenders. To help us determine the best valuation for a company, we consider a variety of valuation methodologies, including market multiples, discounted cash flow (DCF) modeling, and discrete asset analysis. The market multiples and DCF methods are used to determine a company's enterprise value

as a going concern. This is generally the most appropriate approach when our simulated default and recovery analysis indicates that the borrower's reorganization (or the outright sale of the ongoing business or certain segments) is the most likely outcome of an insolvency proceeding. We use discrete asset valuation most often for industries in which this valuation approach is typically used, or when the simulated default scenario indicates that the borrower's liquidation is the most likely outcome of insolvency. In addition, we may use a combination of the discrete and enterprise valuation methods when we believe that a company will reorganize, but that its debt and organizational structure provides certain creditors with priority claims against particular assets or subsidiaries. For example, Standard & Poor's will consider whether a company's decision to securitize or not securitize material assets impacts the value available to distribute to other creditors.

Market multiples. The key to valuing a firm using a market multiples approach is to select appropriate comparable companies, or "comps." The analysis should include several comps that are similar to the firm being valued with respect to business lines, geographic markets, margins, revenue, capital requirements, and competitive position. Of course, an ideal set of comps does not always exist, so analytical judgment is often required to adjust for differences in size, business profiles, and other attributes. In addition, in the context of a recovery analysis, our multiples must consider the competitive and economic environments assumed in our simulated default scenario, which are often very different than present conditions. As a result, our analysis strives to consider a selection of multiples and types of multiples. Ideally, we are interested in multiples for similar firms that have reorganized due to circumstances consistent with our simulated default scenario. In practice, however, the existence of such "emergence" multiple comps is rare. As a result, our analysis often turns to "transaction" or "purchase" multiples for comparable firms because these are generally more numerous. With transaction multiples, we try to use forward multiples (purchase price divided by projected EBITDA) rather than trailing multiples (purchase price divided by historical EBITDA). This is because we believe that forward multiples, which are generally lower because they incorporate the benefit of perceived cash flow synergies used to justify the purchase price, provide a more appropriate reference point. In addition, "trading" multiples for publicly traded firms can be useful because they allow us to track how multiples have changed over economic and business cycles. This is especially relevant for cyclical industries and for sectors entering a different stage of development or experiencing changing competitive conditions. A selection of multiples helps match our valuation with the conditions assumed in our simulated default scenario. For example, a firm projected to default in a cyclical trough may warrant a higher multiple than one expected to default at a cyclical midpoint. Furthermore, two companies in the same industry may merit meaningfully different multiples if one is highly levered and at risk of default from relatively normal competitive stresses while the other is unlikely to default unless there is a large unexpected fundamental deterioration in the cash flow potential of the business model (which could make historical sector multiples irrelevant). Our multiples analysis may also consider alternative industry specific multiples--such as subscribers, hospital beds, recurring revenue, etc.--where appropriate. Alternatively, such metrics may serve as a check on the soundness of a valuation that relied on an EBITDA multiple, DCF, or discrete asset approach.

Discounted cash flow (DCF). Standard & Poor's DCF valuation analysis for recovery analytics generally uses a three-stage model. The first stage is the simulated default scenario; the second stage is the period during insolvency; and the third stage represents the long-term operating performance of the reorganized firm. Our valuation is based on the third stage, which typically values a company using a perpetuity growth formula, which contemplates a long-term steady-state growth rate deemed appropriate for the borrower's business. However, the third stage may also include specific annual cash flow forecasts for a period of time following reorganization before assigning a terminal value through the perpetuity growth formula. In any case, the specifics underlying our cash flow forecast and valuation are outlined in Standard & Poor's recovery reports.

Discrete asset valuation. We value the relevant assets by applying industry- and asset-specific advance rates in conjunction with third-party appraisals (when we are provided with the appraisals). Identifying and estimating the value of debt and nondebt claims After valuing a company, we must then identify and quantify the debt obligations and other material liabilities that would be expected to have a claim against the company following default. Potential claims fall into three broad categories: Principal and accrued interest on all debt outstanding at the point of default, whether issued at the operating company, subsidiary, or

holding company level; Bankruptcy-related claims, such as debtor-in-possession (DIP) financing and administrative expenses for professional fees and other bankruptcy costs; Other nondebt claims such as taxes payable, certain securitization programs, trade payables, deficiency claims on rejected leases, litigation liabilities, and unfunded post-retirement obligations. Our analysis of these claims and their potential values strives to consider each borrower's particular facts and circumstances, as well as the expected impact on the claims as a result of our simulated default scenario. We estimate debt outstanding at the point of default by reducing term loans by scheduled amortization paid prior to our simulated default and by assuming that all committed debt, such as revolving credit facilities and delayed draw term loans, is fully funded. For asset-based lending (ABL) facilities, we will consider whether the borrowing base formula would allow the company to fully draw the facility in a simulated default scenario. For letters of credit, especially those issued under dedicated synthetic letter of credit tranches, we will assess whether these contingent obligations are likely to be drawn following default. Our estimate of debt outstanding at default also includes an estimate of pre-petition interest, which is calculated by adding six months of interest (based on historical data from Standard & Poor's LossStats® database) to our estimated principal amount at default. The inclusion of pre-petition interest makes our recovery analysis more consistent with banks' credit risk capital requirements under the Basel II Framework. Our analysis focuses on the recovery prospects for the debt instruments in a company's current or pro forma debt structure, and generally does not make estimates for other debt that may be issued prior to a default. We feel that this approach is prudent and more relevant to investors because the amount and composition of any additional debt (secured, unsecured, and/or subordinated) may materially impact lender recovery rates, and it is not possible to know these particulars in advance. Further, incremental debt added to a company's capital structure may materially affect its probability of default, which, in turn, could impact all aspects of our recovery analysis (i.e., the most likely path to default, valuation given default, and loss given default). Consequently, changes to a company's debt structure are treated as events that require a reevaluation of our default and recovery analysis. This is a key aspect of our ongoing surveillance of our default and recovery ratings. We do, however, make some exceptions to this approach. Such exceptions will be outlined in our recovery reports and generally fall under two categories: Permitted, but uncommitted, incremental debt may be included as part of our default and recovery analysis if this is consistent with our expectations and our underlying corporate credit rating on a given issuer. Our default and recovery analysis may assume the repayment of near-term debt maturities if the company is expected to retire these obligations and has the liquidity to do so. Similarly, principal prepayments--whether voluntary or part of an excess cash flow sweep provision--may be considered for certain credits when deemed appropriate. Otherwise, we generally assume that debt that matures prior to our simulated default date is rolled over on similar terms but at current market rates. Our analytical treatment and estimates for bankruptcy-related and other nondebt claims in default is generally specific to the laws and customs of the jurisdictions involved in our simulated default scenario. Please refer to Appendix 1 for a review of our approach and methodology for these claims in the U.S. Determining distribution of value After determining our best estimate for a firm's value and the types and amounts of claims in default, we then consider the distribution of that value. This distribution will follow a "waterfall" approach that will reflect the relative seniority of the claimants and will be specific to the laws, customs, and insolvency regime practices for the relevant jurisdictions for a company. For example, the quantification and classification of bankruptcy-related and nondebt claims for insolvencies outside of the U.S. might be very different from the methodology for U.S. Industrials companies discussed in Appendix 1. Furthermore, local laws and customs may warrant deviations from the waterfall distribution we follow in the U.S. Where relevant, we will publish our guidelines and rationale for these differences before rolling out our unsecured recovery ratings in these jurisdictions. In the U.S., our general assumption of the relative priority of claimants is as follows: Super-priority claims, such as DIP financing Administrative expenses Federal and state tax claims Senior secured claims Junior secured claims Senior unsecured claims Subordinated claims Preferred stock Common stock However, this priority of claims is subject to two critical caveats: The beneficial position of secured creditor claims, whether first-priority or otherwise, is valid only to the extent that the collateral supporting such claims is equal to, or greater than, the amount of the claim. If the collateral value is insufficient to fully cover a secured claim, the uncovered amount or "deficiency

balance" will be pari passu with all other senior unsecured claims. Structural issues may alter the priority of certain claims against specific assets or entities in an organization based on the company's legal entity structure and the relevant terms and conditions of the debt instruments. As a result of these caveats, the recovery prospects for different debt instruments of the same type (whether they be senior secured, senior unsecured, senior subordinated, etc.) might be very different, depending on the structure of the transactions. While the debt type of an instrument may provide some indication as to its relative seniority, it is the legal structure and associated terms and conditions that are the ultimate arbiter of priority. Consequently, a fundamental review of a company's debt and legal entity structure is required to properly evaluate the relative priority of claimants. This requires an understanding of the terms and conditions of the various debt instruments as they pertain to borrower and guarantor relationships, collateral pledges and exclusions, facility amounts, covenants, and debt maturities. In addition, we must understand the breakout of the company's cash flow and assets as it pertains to its legal organizational structure and consider the effect of key jurisdictional and intercreditor issues. Key structural issues to explore include identifying: Higher priority liens on specific assets by forms of secured debt such as mortgages, industrial revenue bonds, and ABL facilities; Non-guarantor subsidiaries (domestic or foreign) that do not guarantee a company's primary debt obligations or provide asset pledges to support the company's secured debt; Claims at non-guarantor subsidiaries that will have a higher priority (i.e., a "structurally superior") claim on the value related to such entities; Material exclusions to the collateral pledged to secured lenders, including the lack of asset pledges by foreign subsidiaries or the absence of liens on significant domestic assets, including the stock of foreign or domestic non-guarantor subsidiaries (whether due to concessions demanded by and granted to the borrower, poor transaction structuring, regulatory restrictions, or limitations imposed by other debt indentures); and Whether a company's foreign subsidiaries are likely to file for bankruptcy in their local jurisdictions as part of the default and restructuring process. The presence of obligations with higher-priority liens on certain assets means that the enterprise value available to other creditors must be reduced to account for the distribution of value to satisfy these creditors first. In most instances, asset-specific secured debt claims (such as those previously listed) are structured to ensure full collateral coverage even in a default scenario. As such, our analysis will typically reduce the enterprise value by the amount of these claims to determine the remaining enterprise value available for other creditors. That said, there may be exceptions that will be considered on a case-by-case basis if the amounts are material. Well-structured secured bank or bond debt that does not have a first lien on certain assets will get second-priority liens on assets that are significant and may have meaningful excess collateral value. For example, this is often the case when secured debt collateralized by a first lien on all noncurrent assets also takes a second-priority lien on working capital assets that are already pledged to support an asset-based revolving credit facility. Significant domestic or foreign non-guarantor entities must be identified because these entities have not explicitly promised to repay the debt. Thus, the portion of enterprise value derived from these subsidiaries does not directly support the rated debt. As a result, debt and certain nondebt claims at these subsidiaries have a structurally higher priority claim against the subsidiary value. Accordingly, the portion of the company's enterprise value stemming from these subsidiaries must be estimated and treated separately in the distribution of value to creditors. This requires an understanding of the breakout of a company's cash flow and assets. Because these subsidiaries are still part of the enterprise being evaluated, any equity value that remains after satisfying the structurally superior claims would be available to satisfy other creditors of the entities that own these subsidiaries. Well-structured debt will often include covenants to restrict the amount of structurally superior debt that can be placed at such subsidiaries. Furthermore, well-structured secured debt will take a lien on the stock of such subsidiaries to ensure a priority interest in the equity value available to support other creditors. In practice, the pledge of foreign subsidiary stock owned by U.S. entities is usually limited to 65% of voting stock for tax reasons. The residual value that is not captured by secured lenders through stock pledges would be expected to be available to all senior unsecured creditors on a pro rata basis. The exclusion of other material assets (other than whole subsidiaries or subsidiary stock) from the collateral pledged to support secured debt must also be incorporated into our analysis. The value of such assets is typically determined using a discrete asset valuation approach, and our estimated value and related assumptions will be disclosed

in our recovery report as appropriate. We expect the value of excluded assets would be shared by all senior unsecured creditors on a pro rata basis. An evaluation of whether foreign subsidiaries would also be likely to file for bankruptcy is also required, because this would likely increase the cost of the bankruptcy process and create potential multijurisdictional issues that could impact lender recovery rates. The involvement of foreign courts in a bankruptcy process presents a myriad of complexities and uncertainties. For these same reasons, however, U.S.-domiciled borrowers that file for bankruptcy seldom also file their foreign subsidiaries without a specific benefit or reason for doing so. Consequently, we generally assume that foreign subsidiaries of U.S. borrowers do not file for bankruptcy unless there is a compelling reason to assume otherwise, such as a large amount of foreign debt that needs to be restructured to enable the company to emerge from bankruptcy. When foreign subsidiaries are expected to file bankruptcy, our analysis will be tailored to incorporate the particulars of the relevant bankruptcy regimes. Intercreditor issues may affect the distribution of value and result in deviations from "absolute priority" (i.e., maintenance of the relative priority of the claims, subject to structural considerations, so that a class of claims will not receive any distribution until all classes above it are fully satisfied), which is assumed by Standard & Poor's methodology. In practice, however, Chapter 11 bankruptcies are negotiated settlements and the distribution of value may vary somewhat from the ideal implied by absolute priority for a variety of intercreditor reasons, including, in the U.S., "accommodations" and "substantive consolidation." Accommodations refer to concessions granted by senior creditors to junior claimants in negotiations to gain their cooperation in a timely restructuring. We generally do not explicitly model for accommodations because it is uncertain whether any concessions will be granted, if those granted will ultimately have value (e.g., warrants as a contingent equity claim), or whether the value will be material enough to meaningfully affect our projected recovery rates. Substantive consolidation represents a potentially more meaningful deviation from the distribution of value according to absolute priority. In a substantive consolidation, the entities of a corporate group may be treated as a single consolidated entity for the purposes of a bankruptcy reorganization. This effectively would eliminate the credit support provided by unsecured guarantees or the pledge of intercompany loans or subsidiary stock, and dilutes the recovery prospects of creditors that relied on these features to the benefit of those that did not. Even the threat of substantive consolidation may result in a negotiated settlement that could affect recovery distribution. While substantive consolidation can meaningfully impact the recovery prospects of certain creditors, it is a discretionary judicial doctrine that is only relevant in certain situations. It is difficult to predict whether any party would seek to ask a bankruptcy court to apply it in a specific case, or the likelihood that party would succeed in persuading the court to do so. As such, our analysis does not evaluate the likelihood of substantive consolidation, though we acknowledge that this risk could affect recoveries in certain cases.

Assigning recovery ratings We estimate recovery rates by dividing the portion of enterprise or liquidation value projected to be available to cover the debt to which the recovery rating applies, by the estimated amount of debt (principal and pre-petition interest) and pari passu claims outstanding at default. We then map the recovery rate to our recovery rating chart to determine the issue and recovery ratings. Standard & Poor's accompanies its recovery ratings with written recovery reports, which identify the simulated payment default, valuation assumptions, and other factors on which the recovery ratings are based. This disclosure is intended to improve the utility of our analysis by providing investors with more information with which to evaluate our conclusions and to allow them to consider different assumptions as they deem appropriate.

Surveillance of recovery ratings After our initial analysis at debt origination, we then monitor material changes affecting the borrower and its debt and liability structure to determine if the changes might also alter creditor recovery prospects. This is essential given the dynamic nature of credit in general and default and recovery modeling in particular. Therefore, a fundamental component of recovery analysis is periodic and event specific surveillance designed to monitor developing risk exposures that might affect recovery. Any material changes to our default and recovery ratings or analysis will be disclosed in updates to our recovery reports. Factors that could impact our default and recovery analysis or ratings include: Acquisitions and divestitures; Updated valuation assumptions; Shifts in the profit and cash flow contributions of borrower, guarantor, or non-guarantor entities; Changes in debt or the exposure to nondebt liabilities; Intercreditor dynamics; and Changes in bankruptcy law or case histories.

Conclusion We believe that our recovery ratings are beneficial

because they allow market participants to consider disaggregated analyses for probability of default and recovery given default. We also believe our recovery analysis may provide investors insight into how a company's debt and organizational structure may affect recovery rates.

Appendix 1: U.S. Industrials Analysis Of Claims And Estimation Of Amounts This appendix covers Standard & Poor's analytical considerations regarding the treatment of bankruptcy-specific and other nondebt claims in our default and recovery analysis of U.S.-domiciled Industrials borrowers. Our approach endeavors to consider the borrower's particular facts and circumstances, as well as the expected impact on the claims as a result of the simulated default scenario. Still, the potential amount of many of these claims is highly variable and difficult to predict. In addition, these claims are likely to disproportionately affect the recovery prospects of unsecured creditors because most of these claims would be expected to be classified as general unsecured claims in bankruptcy. This contributes to the historically higher standard deviation of recovery rates for unsecured lenders (relative to secured lenders). While these issues make projecting recovery rates for unsecured debt challenging, we believe that an understanding of the analytical considerations related to these claims can help investors make better decisions regarding an investment's risks and recovery prospects. Our recovery reports endeavor to comment on our assumptions regarding the types and amounts of the claims where relevant.

Bankruptcy-specific priority claims Debtor in possession financing. DIP facilities are usually super-priority claims that enjoy repayment precedence over unsecured debt and, in certain circumstances, secured debt. However, it is exceedingly difficult to accurately quantify the size or likelihood of DIP financing or to forecast how DIP financing may affect the recovery prospects for different creditors. This is because the size or existence of a theoretical DIP commitment is unpredictable, DIP borrowings at emergence may be substantially less than the DIP commitment, and such facilities may be used to fully repay overcollateralized pre-petition secured debt. Furthermore, the presence of DIP financing might actually help creditor recovery prospects by allowing companies to restructure their operations and preserve the value of their business. As a result of these uncertainties, estimating the impact of a DIP facility is generally beyond the scope of our analysis, even though we recognize that DIP facilities may materially impact recovery prospects in certain cases.

Administrative expenses. Administrative expenses relate to professional fees and other costs associated with bankruptcy that are required to preserve the value of the estate and complete the bankruptcy process. These costs must be paid prior to exiting bankruptcy, making them effectively senior to those of all other creditors. The dollar amount and materiality of administrative claims usually correspond to the complexity of a company's capital structure. We expect that these costs will be less for simple capital structures that can usually negotiate an end to a bankruptcy quickly and may even use a pre-packaged bankruptcy plan. Conversely, these costs are expected to be greater for large borrowers with complex capital structures where the insolvency process is often characterized by protracted multiple party disputes that drive up bankruptcy costs and diminish lender recoveries. When using an enterprise value approach, our methodology estimates the value of these claims as a percentage of the borrower's emergence enterprise value as follows: Three percent for capital structures with one primary class of debt; Five percent for two primary classes of debt (first- and second-lien creditors may be adversaries in a bankruptcy proceeding and are treated as separate classes by Standard & Poor's); Seven percent for three primary classes of debt; and Ten percent for certain complex capital structures. When using a discrete asset valuation approach, these costs may be implicitly accounted for in the orderly liquidation value discounts used to value a company's assets.

Other nondebt claims **Taxes.** Various U.S. government authorities successfully assert tax claims as either administrative, priority, or secured claims. However, it is very difficult to project the level and status of such claims at origination (e.g., tax disputes en route to default are extremely hard to predict). We also expect that, while such claims will normally be paid before senior secured claims, their overall amount is seldom material enough to impact lender recoveries. Therefore, we acknowledge that tax claims may indeed be priority claims, but we generally do not, at origination, reduce our expectation for lenders' recovery by estimating the amount of potential tax claims.

Swap termination costs. The Bankruptcy Code accords special treatment for counterparties to financial contracts, such as swaps, repurchase agreements, securities contracts, and forward contracts, to ensure continuity in the financial markets and to avoid systemic risk (so long as both the type of contract and the type of counterparty fall within certain statutory provisions).

In addition to not being subject to the automatic stay that generally precludes creditors from exercising their remedies against the debtor, financial contract counterparties have the right to liquidate, terminate, or accelerate the contract in a bankruptcy. Most currency and interest rate swaps related to secured debt are secured on a pari passu basis with the respective loans. Other swaps are likely to be unsecured. While we acknowledge the potential for such claims, quantifying such claims will usually be impractical and beyond the scope of our analysis at origination. That said, making estimates for these claims may be more practical in surveillance as a company approaches bankruptcy and the potential impact of these types of claims becomes clearer.

Cash management obligations. Obligations under automated clearing house programs and other cash management services provided by a borrower's banks may be incremental to its exposure to its bank lenders under its credit facilities. In some cases, these obligations may be material and may be secured on a pari passu basis by the bank collateral. When we are aware of these situations, our estimates for these claims will be disclosed in our recovery reports.

Regulatory and litigation claims. These claims are fact- and borrower-specific and are expected to be immaterial for the vast majority of issuers. For others, however, they may play a significant role in our simulated default scenario and represent a sizable liability that impairs the recovery prospects of other creditors. Borrowers that fall into this category may be in the tobacco, chemical, building materials, environmental services, mining, or pharmaceutical industries. Even within these sectors, however, we are most likely to factor these issues into our analysis in a meaningful way when a borrower is either already facing significant exposure to these liabilities or is unlikely to default without a shock of this type to its business (such as a high speculative-grade-rated company with low to moderate leverage and relatively stable cash flow). After determining whether it is reasonable to include such claims in our default and recovery analysis, we are left with the challenge of sizing the claims and determining how they might impact creditor recovery prospects. Unfortunately, the case history is very limited in this area and does not offer clear guidelines on how to best handle these inherent uncertainties. As such, we tailor our approach on a case-by-case basis to the borrower's specific circumstances to help us reach the best solution. When significant, our approach and assumptions will be outlined in our recovery report so that investors can evaluate our treatment, and consider alternative assumptions if desired, as part of their investment decision. We note that claims in this category would typically be expected to have general unsecured status in a bankruptcy, although they may remain ongoing costs of a reorganized entity and thus reduce the value available to other creditors.

Securitizations. Standard accounts receivable securitization programs involve the sale of certain receivables to a bankruptcy-remote special purpose entity in an arms length transaction under commercially reasonable terms. The assets sold are not legally part of the debtor's estate (although in some circumstances they may continue to be reported on the company's balance sheet for accounting purposes), and the securitization investors are completely reliant on the value of the assets they purchased to generate their return. As a result, the securitization investors do not have any recourse against the estate, although the sale of the assets may affect the value available to other creditors. When a discrete asset valuation approach is used and the sold receivables continue to be reported on the company's balance sheet, we will consider the securitized debt from such programs to be a secured claim with priority on the value from the receivables within the securitization. Securitizations may also be in the form of a future flow-type structure, which securitizes all or a portion of the borrower's future revenue and cash flow (typically related to particular contracts, patents, trademarks, or other intangible assets), would have a claim against our estimated valuation. Such transactions effectively securitize all or a part of the borrower's future earnings, and the related claims would have priority claim to the value stemming from the securitized assets. This claim would diminish the enterprise value available to other corporate creditors. Such transactions are typically highly individualized, and the amount of the claims and the value of the assets in our simulated default analysis are evaluated on a case-by-case basis.

Trade creditor claims. Typically, trade creditor claims are unsecured claims that rank pari passu with a borrower's other unsecured obligations. However, because a borrower's viability as a going concern hinges upon continued access to goods and services, many pre-petition claims are either paid in the ordinary course or treated as priority administrative claims. This concession to critical trade vendors ensures that they remain willing to carry on their relationships with the borrower during the insolvency proceedings, which preserves the value of the estate and enhances the recovery prospects for all

creditors. Consequently, our analysis does not make an explicit estimate for trade creditor claims in bankruptcy for companies that are expected to reorganize, but rather, it assumes that these costs continue to be paid as part of the company's normal working capital cycle (and, thus, are already accounted for in our valuations using market multiples or DCF). For firms expected to liquidate, an estimate of accounts payable will be made, with the amount treated as an unsecured claim. Leases. U.S. bankruptcy law provides companies the opportunity to accept or reject leases during the bankruptcy process (for commercial real property leases, the review period is limited to 210 days, including a one-time 90-day extension, unless the lessor agrees to an extension). If a lease is accepted, the company is required to keep rent payments on the lease current, meaning that there will be no claim against the estate. This also allows the lessee to continue to use the leased asset, with the cash flow (i.e., value) derived from the asset available to support other creditors. If a lease is rejected, the company must discontinue using the asset, and the lessor may file a general unsecured claim against the estate. As a result, we must estimate a reasonable lease rejection rate for the firm given the types of assets leased, the industry, and our simulated default scenario. Leases are typically rejected for one of three reasons: The lease is priced above market rates; The leased asset is generating negative or insufficient returns; or The leased asset is highly vulnerable to obsolescence during the term of the lease. Our evaluation may ballpark the rejection rate by assuming it matches the percentage decline in revenue in our simulated default scenario or, if applicable, by looking at common industry lease rejection rates. If leases are material, we may further evaluate whether our knowledge of a company's portfolio of leased assets is likely to result in a higher or lower level of unattractive leases (and rejections) in a default scenario. For example, if a company's leased assets are unusually old, underutilized, or priced above current market rates, then a higher rejection rate may be warranted. In practice, this level of refinement in our analysis will be most relevant when a company has a substantial amount of lease obligations and a significant risk of near-term default. Uneconomical leases that are amended through renegotiation in bankruptcy are considered to be rejected. In bankruptcy, the amount of unsecured claims from rejected leases is determined by taking the amount of lost rental income and subtracting the net value available to the lessor by selling or re-leasing the asset in its next best use. However, the deficiency claims of commercial real estate lessors is further restricted to the greater of one year's rent or 15% of the remaining rental payments not to exceed three years' rent. Lessors of assets other than commercial real property do not have their potential deficiency claims capped, but such leases are generally not material and are usually for relatively short periods of time. With these issues in mind, Standard & Poor's quantifies lease deficiency claims for most companies by multiplying their estimated lease rejection rate by three times their annual rent. However, there are a few exceptions to our general approach. Deficiency claims for leases of major transportation equipment (e.g., aircraft, railcars, and ships) are estimated on a case-by-case basis, with our assumptions disclosed in our recovery reports. This is necessary because these lease obligations do not have their claims capped, may be longer term, and are typically for substantial amounts. In addition, we use a lower-rent multiple for cases in which a company relies primarily on very short-term leases (three years or less). Furthermore, we do not include any deficiency claim for leases held by individual asset-specific subsidiaries that do not have credit support from other entities (by virtue of guarantees or co-lessee relationships) due to the lack of recourse against other entities and the likelihood that these subsidiaries are likely to be worthless if the leases are rejected. This situation was relevant in many of the movie exhibitor bankruptcies in the early 2000 time period. Employment-related claims. Material unsecured claims may arise when a debtor rejects, terminates, or modifies the terms of employment or benefits for its current or retired employees. Principally, these claims would arise from the rejection of labor contracts, the voluntary or involuntary termination of defined benefit pension plans, or the modification of retiree benefits. Because these types of employee arrangements are not common in many industries, these liabilities would only be relevant for certain companies. Where relevant, the key issue is whether these obligations are likely to be renounced or changed after default, since no claim results if they are unaltered. Of course, employment-related claims are more likely to arise when a company is at a competitive disadvantage because of the costs of maintaining these commitments. Even then, some past bankruptcies suggest that some companies may not use the bankruptcy process to fully address these problems. What is clear, however, is that employment-related claims may significantly dilute

recoveries for the unsecured creditors of certain companies and that these risks are most acute for companies that are grappling with burdensome labor costs. To reflect this risk, we are likely to include some level of employment-related claims for companies where uncompetitive labor or benefits costs are a factor in our simulated default scenario. Collective bargaining agreement rejection claims. A borrower that has collective bargaining agreements (CBA), including above-market wages, benefits, or work rules, is likely to seek to reject these contracts in a bankruptcy. In order to reject a CBA, the borrower must establish, and the bankruptcy court must find that the borrower has proposed, modifications to the CBA that are necessary for its successful reorganization. In addition, the court must find that all creditors and affected parties are treated fairly and equitably, that the borrower has bargained fairly with the relevant union, that the union rejected the proposal without good cause, and that equity considerations clearly favor rejection. Proceedings to reject a CBA typically result in a consensual reduction in wages and benefits, and modified work rules under a replacement or modified agreement prior to the bankruptcy court's decision on the motion to reject. If a CBA were rejected, the affected employees would have unsecured claims for damages that would be limited to one year's compensation plus any unpaid compensation due under the CBA. However, if a CBA were modified through negotiation without rejection, the damages for lost wages and benefits and modified work rules may not be limited to this amount. Pension plan termination claims. The ability to terminate a defined benefit pension plan is provided under the U.S. Employee Retirement Income Security Act (ERISA). Under ERISA, these plans may be terminated voluntarily by the debtor as the plan sponsor, or involuntarily by the Pension Benefit Guaranty Corp. (PBGC) as the agency that insures plan benefits. Typically, any termination during bankruptcy will be a "distress termination," in which the plan assets are, or would be, insufficient to pay benefits under the plan. However, the bankruptcy of the plan sponsor does not automatically result in the termination of its pension plans, and even underfunded plans may not necessarily be terminated. For example, a borrower may elect to maintain underfunded plans, or may not succeed in terminating a plan, if it fails to demonstrate that it would not be able to pay its debts and successfully reorganize unless the plan is terminated. In a distress termination, the PBGC assumes the liabilities of the pension plan up to the limits prescribed under ERISA and gets an unsecured claim in bankruptcy against the debtor for the unfunded benefits. The calculation of this liability is based on different assumptions than the borrower's reported liability in its financial statements. This, in addition to the difficulty of predicting the funded status of a plan at some point in the future, complicates our ability to accurately assess the value of these claims. Retiree benefits modification claims. Non-pension retiree benefits are payments to retirees for medical, surgical, or hospital care benefits, or benefits in the event of sickness, accident, disability, or death. The requirements for modifying these benefits for plans covered under a union contract during bankruptcy are similar to the requirements for the rejection of a CBA, but they may be modified by order of the bankruptcy court without rejecting the plan or program under which the benefits are provided in its entirety. However, these obligations are often amended prior to bankruptcy for companies that are placed at a competitive disadvantage because of these costs. As such, we must consider whether the borrower has modified, or is likely to modify, the benefits prior to bankruptcy. In the case of benefits provided to employees that were not represented by unions, the borrower may be able to revise the benefits prior to bankruptcy with little or no negotiation with the retirees. For union retirees, benefit modifications prior to bankruptcy likely would occur in the context of concessions in negotiations with the relevant union. In either case, modifications prior to bankruptcy would not result in claims in bankruptcy that could dilute recoveries. If the borrower reduces its retiree benefits liability prior to bankruptcy, further modifications in bankruptcy may result in a smaller unsecured claim than if it had entered the proceeding with a greater liability. If we conclude that the borrower will modify its retiree benefits prior to bankruptcy, our recovery analysis will consider the likely effect of that modification on the borrower's reduced benefit liability in bankruptcy. Conversely, if we conclude that these plans will be modified in bankruptcy, but not before, then the potential liability will be more significant.

Appendix 2: Frequently Asked Questions When applying the recovery rating methodology for the purpose of determining valuation following a payment default, how do you determine the cash flow or EBITDA basis over which to apply the EBITDA multiple, given that the relevant valuation point is at the end of the reorganization process rather than at the point of default? In other words, how does the EBITDA

value that Standard & Poor's uses as the basis for its valuation analysis following a payment default, generally differ from the 'EBITDA at default' implied by your insolvency proxy analysis? To determine valuation following a payment default, we generally use an EBITDA value that reflects our estimate of EBITDA at the end of the reorganization process. That value can be different from the 'EBITDA at default' implied by our insolvency proxy analysis. As stated above under the "Recovery Ratings For Global Industrials--Definition And Context" section, our recovery ratings assess a debt instrument's ultimate prospects for recovery given a payment default, and focus on estimating the percentage of recovery that debt investors would receive at the end of a formal bankruptcy proceeding or an informal out-of-court restructuring. Furthermore, our recovery ratings incorporate fundamental deal-specific, scenario-driven, forward-looking analysis and consider potential changes in recovery valuation after a simulated default. Under the "General Recovery Methodology And Approach For Global Industrial" section, the three first steps of the analytical process are i) 'establishing a simulated path to default'; ii) 'forecasting the company's cash flow at default,' and iii) 'determining an appropriate valuation for the company following default.' In the second step, we determine the 'insolvency proxy' (as defined in the criteria), which is the point at which funds available plus free cash flow is insufficient to cover fixed charges such as interest costs. The criteria also provide for certain situations where the insolvency proxy may be greater or lower than the fixed charges. In the third step, the purpose of the valuation analysis based on market multiples is to determine the value that can be distributed to the various lenders, not at the point of default, but following a payment default, at the end of the going concern re-organization process. In some situations EBITDA at default would be a representative base proxy for the likely EBITDA at the point at which the entity emerges from insolvency proceedings, and over which to apply the emergence EBITDA multiple to determine valuation following default. This would be the case, for instance, when we believe that default would be primarily caused by excessive financial leverage, rather than by cyclical business fluctuations, temporary adverse business or competitive developments, or by an inefficient operating cost structure. In those circumstances, we would consider that EBITDA at default is a representative proxy of expected EBITDA at emergence from the reorganization process, given the expected lack of change in underlying business conditions or cost structure. And in those cases, 'EBITDA at default' can be used as the basis over which to apply the multiple to determine our valuation since it reflects our best estimate of EBITDA at emergence from the reorganization process. However, 'EBITDA at default' would not be a representative EBITDA proxy over which to apply the multiple to derive a valuation following default if we believe such EBITDA could be lower or higher than the EBITDA at default. This would be the case when we expect that business conditions leading to the default will likely differ from business conditions at the time of emergence from the reorganization process. For example, EBITDA could be lower or higher than EBITDA at default because the issuer operates in a cyclical industry, or the company's cost base will likely be restructured during bankruptcy, such that its earnings or cost structure at emergence from the reorganization process would likely be different from the cost structure at the point of default. When this is the case, and when we believe that those factors are not otherwise reflected in the EBITDA multiple, we will use an EBITDA value that better represents our expected EBITDA at the time of the company's emergence from the reorganization process rather than the EBITDA at default. The determination of the EBITDA value to use will reflect factors such as the effects on EBITDA due to changing business conditions (e.g. industry cyclicity) or cost restructuring. What factors should committees consider when analyzing the assignment of a RR of "1+"? When a committee considers the assignment of a RR of '1+', its primary focus is on achieving the 'highest expectation' of full recovery. To get to that level of confidence, analysts look at the assumed ongoing level of overcollateralization and the strength of the structure. To assess the ongoing level of overcollateralization, committees should take into account the level of overcollateralization and the durability of the asset value over time, under stressed conditions. The durability of the asset value is more likely to be maintained when: The overcollateralization is determined solely by the assets pledged as opposed to the entire enterprise valuation of the company (not all of which may be pledged). The overcollateralization level is sufficiently high under both a liquidation scenario and a going concern scenario. The nature of the asset is such that its value transcends the business, for example, real estate with multiple uses or very liquid commodities. If the overcollateralization is determined by the entire enterprise valuation of the company, we would

generally expect a higher level of overcollateralization than if the overcollateralization is determined solely by the assets to achieve 'highest expectation' of full recovery. Likewise, typical factors to consider when assessing the strength of the structure, include The position of the debt in the capital structure, for example, priority rights of payment with restrictions on further priority and pari passu debt issuance, incremental or accordion debt features (an accordion loan can give a company the option to increase the size of the loan) in the financing documents, or Existence of a restrictive borrowing base or other structural features that could preserve sufficient overcollateralization even during a significant stress If either the overcollateralization or the combination of overcollateralization and the structural features described above lead us to a very high degree of confidence of full recovery, then we will assign a recovery rating of '1+'. To see other articles discussing Standard & Poor's expanded recovery ratings scale and issuer ratings framework, see our special report published June 12, 2007, on RatingsDirect, titled, "Expanded Recovery Ratings Scale And Issue Ratings Framework." [Click here](#) to see other articles included in "Special Report: Leveraged Debt And Recovery: From Credit Amnesia To Credit Obsession." [Click this link](#) for Special Report Archive.