

## WHITEPAPER

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# Banks Can Use Technology To Extract More Value From Covenant Structuring

Covenants are essential tools in a bank's management of the risk of loss in its credit relationships. Learning about the various types of covenants and how to negotiate them with clients is part of a banker's rite of passage. All credit officers understand the importance of covenant monitoring. But regardless of this, it may be difficult for them to answer questions such as:

- » Are we monitoring covenants in a timely fashion?
- » How many borrowers are in breach of their covenants?
- » What covenants protect us the most?
- » Is this covenant appropriately tight?
- » When should we turn down a deal because the covenant package is too weak?

This paper will explore how a comprehensive financial, deal and covenant database, together with relevant functionality, can help banks to answer some of these operational and analytical questions. Starting to construct a data set today may yield insights about the value of covenants in the future. We will also discuss some analytic approaches based on Moody's Analytics research that banks may wish to bear in mind as they design their data set.

### Covenant Fundamentals

Covenants are an important tool to control the risk of loss and improve outcomes for banks when borrowers experience financial distress. Covenants are part of the loan contract and, depending on market segment, may be highly customized. For market segments where risk oversight involves review of regularly prepared financial statements, covenants usually obligate borrowers to provide statements by certain dates, with corresponding compliance checking performed by the bank. Failed compliance tracking can cause the bank to miss the opportunity to use the negotiation leverage arising from covenant defaults to restructure credits, adjust pricing, and improve recovery outcomes.

Covenant compliance checking is a "blocking and tackling" task for credit professionals that has traditionally relied on bespoke tickler systems and manual checking processes. Not only are such processes error prone, their administrative burden also weighs heavily on trained credit professionals and does not add to their job satisfaction. Capturing covenants in an electronic system at the time that credit is approved and tracking them automatically thereafter improves the process reliability and

efficiency. Then bankers can focus on deteriorating credit situations rather than spending energy on just trying to keep up with the compliance process.

A centralized covenant capture and monitoring system comprises the following:

- » A covenant database with covenant terms, financial covenant levels and compliance schedules
- » Convenient and mandatory data capture as part of the credit approval process
- » Descriptive data about the bank's customers and counterparties (referred to more generally as "entities")
- » Entity financial statement data electronically captured in a well-defined schema
- » Credit approval and transaction information for the deals giving rise to the covenants
- » Automated covenant compliance monitoring
- » Covenant compliance history with linkages to relevant deals

Implementing such a system leads to a more reliable and efficient covenant monitoring process. In addition, the process of centrally capturing and monitoring of covenants in a system creates a trove of data that the bank can mine to improve the effectiveness of covenant structuring in the deal origination process. When the data listed above is augmented with the results of credit risk modeling tools, a rich data set is born that gives the bank new insight into credit structuring.

### Improving Operational Effectiveness

By applying technology to the covenant monitoring process, a bank can gain efficiency and improve the effectiveness of the process.

Efficiency is gained in several ways:

- » Compliance status is determined by software rather than by administrative staff
- » Compliance reports are prepared by software
- » Financial ratio based covenants are automatically checked by software rather than by human computation
- » All information required for compliance checking is accessible from a single application rather than multiple (possibly paper-based) systems

Effectiveness of covenant compliance is enhanced by reports and compliance dashboards that inform management about the upcoming compliance workload, compliance checks past due, unresolved compliance breaches, and so forth. Management can use this information to intervene where necessary to keep the process on track and to tackle problems. The result should be fewer cases of delayed or missed compliance checking and fewer instances of un-actioned breaches.

Using entity characteristics such as size, location, and industry, bank managers can mine the compliance data to identify segments where compliance processes fall short of operational benchmarks. They might detect segments with higher incidence of breaches and a need for additional credit resources to manage higher risk credit situations. They can review the outcomes of default situations and identify, for example, segments with frequent waivers or waivers granted without any corresponding adjustments to the credit structure.

Centralized, systematic capture and monitoring of compliance data has a further benefit: it reassures shareholders, regulators and other constituents that the bank's covenant monitoring process is well controlled. Increasingly stringent regulatory requirements ask bank management to certify the adequacy

of this and other risk management processes. Bank examiners have issued Matter Requiring Immediate Attention letters to banks whose covenant monitoring processes are deficient. An electronic covenant capture and monitoring system linked to credit approval processes and with a detailed audit trail establishes a strong control environment that reassures regulators and examiners.

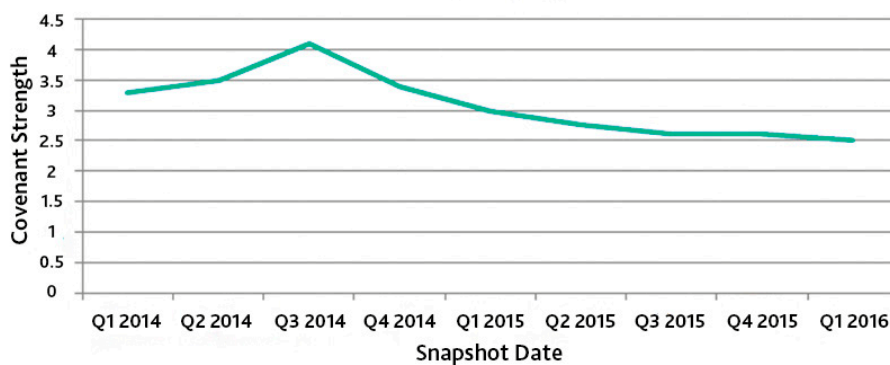
### Detecting Emerging Trends

The ebb and flow between tight and loose markets brings with it corresponding changes in the pricing and loan protections that bankers can obtain in the market. Bankers may have hunches about whether the credit protections and pricing terms are correlated and whether conditions in the market are tightening or loosening. Bank regulators also observe these trends and, where they feel it to be necessary, mandate minimum lending standards. As "price takers," individual banks may have limited capability to stem the tide of a bullish market allowing weaker loan structures, but bank management needs to make risk appetite decisions about which business to accept and at what amounts at market levels. A bank may decide to originate less business when loan terms are loose, or it may sell off originated loans that do not fit with its credit portfolio strategy.

The data captured in a covenant monitoring system allow for a more fact-based monitoring of the pricing and covenant terms that a bank is obtaining. For the relevant borrower segments, the bank can extract from the financial, covenant and deal databases information on deals done by, for example, monthly vintages. By relevant segment, for example industry and credit rating, the bank can observe the pricing and covenant strength (see below) of the deals in that vintage. If the changes detected do not align with management's perception of market conditions, they can intervene with the credit teams doing deals to understand why the pricing and protections received appear to be inconsistent with market trends. And the bank can perhaps be a step ahead of outside parties that may inform them of trends and impose restrictions or prescribe changes in credit procedures.

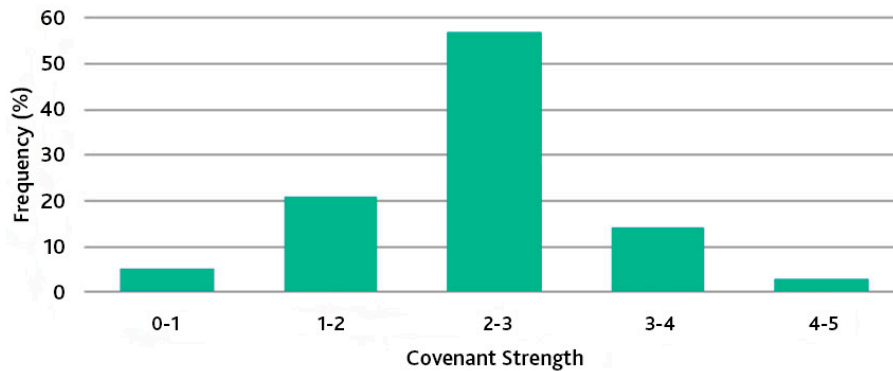
The following figures show the type of analysis that could be performed. The first figure shows the evolution of covenant strength over time. It shows the average covenant strength of new loan originations in the Baa Middle Market segment over a number of quarterly vintages. For a more complete picture, average pricing could be plotted as well to reveal the correlation between structural strength and pricing obtained in the market.

#### Covenant Strength Baa Industrials



The second figure shows the covenant strength distribution for Q1 2016 vintage for the same market segment. Its average corresponds with the final data point in the graph above. This graph reveals how much of the vintage deviated significantly from the average. Further investigation could reveal regional market differences or different underwriting standards by banking unit.

### Covenant Strength Baa-Rated Middle Market Q1 2016 Vintage



### Covenant Package Strength

A bank can improve credit structuring and enrich the credit data set by implementing a covenant strength scorecard. Credit rating agencies' covenant scoring methodologies provide ideas about the factors to include, such as those below. The covenant strength score would be presented to credit decision makers as part of the credit approval information package, and the database would capture both the individual factor scores and the resulting overall covenant score.

Examples of factors to include in a scorecard:

- » Presence and strength of financial metric maintenance covenants (e.g. maximum leverage ratio or minimum interest coverage ratio)
- » Strength of restrictions on incurrence of additional debt and structural subordination
- » Restrictions on the granting of liens
- » Restrictions on asset sales and transformative transactions

The gathering and analysis of this data opens the door to numerous potential insights. Trends in covenant strength can be monitored. Differences in structural protections can be identified between markets and drive the bank to invest in certain markets over others. As time passes, the bank can monitor the outcomes for troubled credits to observe the impact on recovery of covenant strength and the presence of specific provisions. This can lead to improvements in the covenant strength model itself and more insightful credit decisions and loan negotiations based on better understanding of what covenants are most helpful. Then, the bank can adjust its documentation standards accordingly.

### Setting Covenant Levels

Financial covenant levels are heavily negotiated, and the banker may feel on shaky ground when attempting to set meaningful thresholds. Customers will argue for reasonable room to continue to operate even if their finances suffer somewhat, and they will argue that it would be counterproductive to be constantly negotiating with the bank over minor setbacks that trigger covenant defaults. What methodologies can the banker employ to counter this pushback?

The first approach is for the banker to consider the level of credit risk at which she wants the covenant to trigger so that the bank can take action to protect its interests and potentially negotiate improved loan terms. The bank must then determine what ratio values correspond to that risk level. The bank can use its own rating models and/or models offered by vendors to determine the risk threshold. For a borrower currently rated 70 on an internal 100 point rating scale, for example, the bank might wish to set the threshold for a covenant to trigger at a credit score of 60.

Alternatively, if the bank thinks in terms of probabilities of default (PD), the targeted triggering threshold for a company with a 0.25% PD could be a PD of 0.75%. To determine the corresponding covenant level, the banker can feed pessimistic projections into the chosen rating model until the threshold risk level is reached. The financial ratios in this projection could be used as a starting point for covenant levels. Alternatively, what-if analysis may have been used to determine the threshold (for example using a \$40/barrel oil price for an energy producer), in which case the corresponding ratios can be drawn directly from that analysis.

The above process can generate possible covenant levels. Borrowers may, however, say that the levels are too tight while lending syndicate members may feel the opposite. To address this question, Moody's Analytics researchers have examined the probability of "ratio migration" for financial ratios often used for covenants. With the results from this type of analysis, one can then assess the likelihood of migration from current level of the ratio to the triggering level proposed for the covenant to assess the likelihood of triggering the covenant.

The table below shows the results of this work for the interest coverage ratio for a one year time horizon. The starting interest coverage ratio level buckets are displayed in the left column and interest coverage ranges one year in the future are in the top row (other time frames can be used). The cells are populated with the probabilities of migrating from the ratio bucket on the left to a ratio equal to or worse than the bucket above. The orange highlighted cells show the likelihood of deteriorating three or more bucket levels within one year. For example, the probability of migrating from a coverage ratio between 3X to 2.75X to a ratio worse than 2.25X is 27%.

A banker would use this matrix to assess how likely a covenant is to trigger. If the borrower's current interest coverage ratio is 4X and the covenant level determined by the process above is 2.5X, then the table below implies a 25% probability of that ratio triggering within one year. This empirical probability allows the banker to have data-based discussion of covenant tightness with the borrower and provides another angle for the banker to assess the validity of his previous analysis.

EBITDA/Int Exp	Interest Coverage Ratio: Cumulative Deterioration Percentages						
	Under 4X	Under 3.5X	Under 3X	Under 2.75X	Under 2.5X	Under 2.25X	Under 2X
4-3.5X		42%	33%	29%	25%	21%	17%
3.5 - 3X			39%	34%	29%	24%	21%
3 - 2.75X				38%	33%	27%	21%
2.75 - 2.5X					38%	32%	26%
2.5 - 2.25X						33%	26%
2.25 - 2X							35%

Connecting back to the covenant strength concept above, the bank can use all of these covenant setting approaches to produce a financial ratio strength score. Possible metrics for financial ratio strength are:

- » How many risk rating notches away from the current rating are the proposed ratio levels?
- » From the table above, what is the probability of triggering the financial ratio?
- » For a Debt/Worth ratio, how much additional debt (normalized by a quantity such as five-year average EBITDA) can be incurred before the ratio would be triggered?

Once a systematic approach has been developed, its use can become part of the standard information set provided to credit decision makers.

### Looking Forward

Banks utilize covenants in loan agreements to control the risks of extending credit. Systematic capture of covenant terms and automatic monitoring of covenant compliance will improve the control environment and reduce the risk that the bank fails to take advantage of covenant defaults or near-breaches to improve recovery outcomes. The comprehensive database of covenant and financial information enriched by risk analytics provides a rich data set, which the bank can use to better structure deals and improve the returns on the lending business.

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