

## WHITEPAPER

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# Redefining loan monitoring and early warning signal detection through an integrated solution

## Introduction

As all commercial bankers know, getting a loan on the books is just one part of the equation. After the loan is approved, the bank has to retain the borrower until the loan becomes due, which might not be for several years. During this time, the borrower is likely to transition through different credit profiles, for example due to financial management decisions, industry trends, or the economic environment. Despite sound initial due diligence, things can go wrong with a loan before it gets repaid.

When monitoring commercial borrowers' financial health and their ability to meet obligations under loan agreements, banks have tended to be slow adopters of technology that could maximize efficiency and improve their risk management capabilities. Banks' focus has been to develop customer relationships, build the opportunity pipeline, get the loan on the books as quickly as possible and move on to the next deal. After the loan is written, conducting an annual risk review based on outdated information is still too common among lenders.

But, can we blame the bankers? Under tremendous pressure to grow loans and revenues more efficiently in a highly competitive market, much of their effort and technology spend has focused on getting the loan approved and on board. Borrower assessment and loan monitoring technology can sometimes be a lower priority.

In this paper, we explore what monitoring lenders routinely undertake, why it is so difficult and what new technology tools are at their disposal to improve the process, and show how better monitoring can lead to better risk management and lower portfolio losses.

## What does monitoring entail?

When a bank underwrites a new loan, it conducts a full credit assessment on the borrower, including the borrower's ability to pay back or refinance the loan at the time of maturity. The bank expects the borrower's credit profile to remain the same as, or better than, at the time it extends the loan. It puts in place covenants and other requirements to ensure that a minimum set of standards are met for a borrower's future conduct and financial performance.

Most covenants establish benchmark metrics that are intended to ensure that the borrower remains financially healthy, and the bank's investment is protected. These restrictions are based on the borrower's specific balance sheet, income statement, and cash flow characteristics, most commonly expressed in the form of financial ratios. Other covenants monitor reporting

and disclosure, to set a minimum standard of communication with the bank. For instance, the regular delivery of financial statements, or borrowing base certificates.

In more complex loans, the lender or group of lenders can impose certain restrictions on the borrower that govern what it can and cannot do with its business operations. For example, the lender might restrict key management changes, acquisitions, or asset disposals.

As part of agreeing to receive the loan, borrowers usually provide documentation demonstrating adherence to all the various requirements of their loan agreement, both at the outset and at frequent intervals during the loan term. Borrowers also make themselves available to discuss their business and financial performance with the bank's officers throughout the loan period.

### Why is monitoring important?

Regular monitoring is undertaken to ensure the bank's investment is protected. A good monitoring program will quickly identify any red flags that would suggest the borrower's financial health is starting to deteriorate. Being able to detect these early warning signals is critical, as it allows the bank to remedy the increased risk to its investment. At a minimum, the lender might want to reprice the loan to charge for the additional risk. In more severe circumstances, the bank might want to recall the loan by, for instance, defaulting the borrower and demanding immediate repayment. Either way, if not captured early enough, the bank's options for remedying the situation become more limited.

Banks also face regulatory pressure to have strong risk management processes in place, to ensure that underwriting standards remain strong, and to put an effective monitoring regime in place. Today, regulators are requesting more data, more often, and faster. Timely monitoring ensures that the bank is not simply meeting regulatory oversight, but also adequately quantifying its risk, accurately calculating its capital, and setting aside proper reserves. All these things are critical in the eyes of regulators.

Perhaps the most obvious reason to monitor a portfolio is that banks want to avoid loan losses. Effective borrower monitoring is therefore necessary to detect which loans are likely to become stressed, and which loans might default and lead to financial loss. All banks make losses on their loan portfolios to some extent, which is only natural when an element of risk is involved. However, the loan loss rate reflects on the lending institution itself, and determines how much equity capital shareholders need to contribute. Too many loan losses and shareholders will likely react.

### Monitoring challenges

Banks have different ways of collecting, reviewing, and using the various information provided by their borrowers under loan agreements. Unfortunately, in today's environment, bankers are being asked to do more with less and risk monitoring processes tend to be resource-intensive. Below, we articulate some key monitoring challenges that make it harder for bankers to do their jobs well in this area:

#### 1. COVENANT MONITORING

Covenant information has to be received before it can be analyzed. However, many banks do not have the appropriate tools to generate timely alerts on when these items are due for receipt. Some loan agreement requirements are recorded in antiquated methods that do not provide the level of interaction needed to deal with the sheer volume of such requirements. In an environment when covenant monitoring is not a priority, these items can be left until it is too late. Effective monitoring is especially important when the client is in potential breach of the covenant agreement, as any available remedies might not be as effective if not actioned immediately.

For many commercial borrowers, the collection of information requested by lenders is an onerous task that can sometimes be seen as intrusive to the actual running of the business. Commercial bankers spend time chasing customers for information that forms part of the borrowers' reporting obligations. Often by the time it is received, it is of historical interest only.

After the bank has received the information from the borrower, what then? The financial statements and financial covenants are typically entered into spreadsheet or word documents. In such formats, bankers struggle to pool the data across the entire portfolio to understand how borrowers are performing against covenants and how they are performing against peers. Format also makes looking at historical financial trends on a holistic basis challenging. It is possible to gather this information without a centralized data repository, but it is extremely time and resource consuming. Given profitability pressures and resource constraints, it is rarely a viable option.

## 2. PERIODIC REVIEWS

Documented requirements in the loan agreement for reviews are not normally differentiated based on financial performance. Whether financial trends are improving, stable, or experiencing some decline, the monitoring requirements can be similar.

An annual review is required to be completed each year regardless of the risk rating or the financial stability of the borrower. Reviewing borrower financials, determining the risk rating, and preparing the credit write-up is time consuming. It takes almost the same amount of time as performing a full credit assessment, regardless of borrower financial performance or creditworthiness. In the eyes of some bankers, spending significant time on monitoring financially stable or improving credits is not a good use of their time. They need to focus on those borrowers presenting heightened risk to the bank, while keeping an eye on the good quality credits that can suddenly experience financial or other type of distress. The million dollar question is, which seemingly financially healthy borrower is in fact a potential loss just waiting to happen?

### Transforming monitoring with the use of an integrated system

Technology can have a meaningful impact on loan portfolio monitoring, particularly by detecting early warning signals of risk deterioration. With bankers being asked to do more with less resources, technology can help fill that gap by enhancing risk management capabilities and increasing efficiency.

Let us look at the practical ways technology can help.

The first step is to monitor borrowers and collate the information related to their financial health in accordance with the loan agreement. A robust system that can track requirements under the loan agreement and internal policy requirements is critical. A good system can also alert the banker when items are due from borrowers, or certain tasks need completion internally, such as an annual review or a client due diligence visit.

It is also important for the system to track the timeliness of information receipt. If items are past due, it is imperative to dedicate more attention to ensure that outstanding items are resolved as soon as possible. Portfolio managers, senior risk executives, and auditors must know how teams are monitoring loan portfolios, and that they are doing so effectively. They also must know where there are bottlenecks, and how these issues are being addressed. The old adage 'time is money' is seldom more true than in dealing with underperforming credits in a loan portfolio. 'Bad news never improves with age' is another relevant truism.

Covenanted information must be captured in a fit-for-purpose tool that allows data to be stored in a centralized database. Doing so offers the possibility of pooling information, and using it in various meaningful ways beyond merely compliance, for example tracking and comparing borrowers across a variety of financial metrics, including revenues, cash flows, and leverage levels. It also means being able to see historical compliance with covenants, how much cushion until they breach, and even potentially having these covenants automatically tested.

With new technology, financial statements can now be automatically captured in the lender's spreading tool without any manual data entry. For example, the lender can use an application program interface (API) to pull information directly from the borrowers' accounting software package, or use optical character recognition (OCR) technology to read financial statements and the accompanying notes from scanned documents or non-readable PDFs. Machine learning further refines the interpretation of information by learning how to replicate the manual processes currently performed by analysts spreading the financial information. Hence, significantly increasing accuracy with limited manual intervention.

The process of remotely capturing financial statements and automatically calculating financial covenant metrics substantially lightens the lender's administrative burden. It also mitigates risk by reducing the time before the lender is alerted to any financial deterioration.

Most bankers would accept that unless financial statements are regularly reviewed, negative performance trends often go unnoticed. However, improvements can easily be achieved with the creation of automated system reports and notifications to track deteriorating financial health. "Shadow financial covenants" or internal triggers can be created in most covenant systems, such that when reaching these limits, alerts can be sent to credit analysts or officers informing them of an impending breach. This capability is especially important when dealing with "covenant lite" transactions, where the loan agreement contains limited covenant protection for the lender. Financial ratio triggers might not be limited to a point in time, such as at a quarter end, but instead can be based on period-over-period changes in certain metrics. For example, a trigger could be based on a percentage of sales or EBITDA declining year-over-year or quarter-over-quarter or even month over month on a rolling basis. More targeted monitoring can now take place on those borrowers that actually require review vs. others that have stable or improving financial performance.

With the availability of this data, not only can the bank set financial triggers, it can create holistic reports to monitor its entire credit portfolio. Reporting tools now offer dynamic visualizations that instantaneously dissect a portfolio in a multitude of ways to help discover business insights that form the basis of more informed decisions. With the right reporting tool, a lender could break down the portfolio by the amount of leverage being employed, or by revenue or cash flow variation from period to period. For example, out of 100 borrowers in a lender's portfolio, 10 have leverage of more than 3.0x Debt/EBITDA, whereas the majority falls within the 1-2x range. With this type of information, the lender can now focus on the borrowers that are more highly leveraged and need more attention, while knowing his portfolio as a whole is not highly leveraged. This analysis can help portfolio heads or team leaders identify if there is a systemic credit problem or concentration in a few borrowers.

Combining up-to-date financial data with a fully integrated risk grading platform enhances the bank's risk management capabilities, and bring efficiencies in both monitoring and detecting early warning signals. An automated process that could determine whether there is an immediate need to review the borrower based on received financial information is one good example of this benefit. Such a system could also determine the depth of annual review to be completed, or if a risk grading must be performed more frequently. As a result, such systems enable lenders to identify and prioritize

their action items. For example, the system could compare the borrower's current risk rating and its compliance with covenants (or the cushion under the financial covenants), against its financial performance period-over-period, and send a notification if an action is needed. That action can then be traced, and monitored to ensure it is completed.

### The future of credit monitoring

It is a practical truth that many traditional lenders still rely on manual methods of borrower information gathering and human analysis to underpin their credit portfolio monitoring. However non-traditional lenders already employ near real-time data to assess and monitor credit risk effectively. Amazon, for example, relies on the information it captures continuously from its commercial customers to make credit risk decisions in lending money to these customers. It captures data such as daily or monthly sales, payment terms, product returns, and even customer satisfaction ratings to inform those decisions. In turn, the customer obtains working capital finance from Amazon instead of its bank, and doesn't even have to comply with reporting requirements, as it would at a bank.

How long before a Fintech enterprise spots the utility of this arrangement and proposes a "solution?" For example, how long before a Fintech provider creates APIs that access more of a commercial customer's systems to retrieve their data for its own risk management ends?

It is not fanciful to imagine in the near future a loan monitoring system that applies machine learning techniques to borrowers' financial data, alongside macro and micro economic information, behavioral metrics, and relevant industry key indicators to identify which borrowers might face financial distress. The use of non-traditional data for credit risk assessment is gaining traction in sections of personal lending and could also be adopted in the commercial arena.

With an integrated monitoring and rating system and availability of historical data, significant analytics can now be performed to determine the effectiveness of financial and non-financial covenants. Banks can better understand which covenants are most effective, their importance, their ability to predict defaults and the limits at which these covenants are set. Effective monitoring can enhance the bank's credit position at the time of origination and throughout the term of the loan.

### Conclusion

In this paper, we have outlined some examples of how an integrated system with better technology can enhance a bank's risk management capabilities and thus reduce loan losses. Monitoring of loan portfolios can now be conducted based on assessed loan-level risk rather than against inflexible portfolio policies. Monitoring can be simplified and streamlined, with borrowers experiencing credit deterioration receiving the most attention. This approach produces greater efficiency and reduced administration.

With the advancement of new tools such as machine learning and automated monitoring, lenders will be able to derive meaningful insights into borrower behavior, credit events, and probability of default. To achieve this vision, lenders must move to a workflow that collects the relevant predictive information, stores it in an easily accessed manner, and applies modern predictive analytic technologies to the challenge of credit monitoring.

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