Safeguarding Bank Assets with an Early Warning System

To alleviate the risks of non-performing loans, banks must build an effective early warning system to protect their assets and reduce the impact of payment delinquency.

Executive Summary

The last decade's global financial crisis created a tough terrain for the banking industry. The impact of nonperforming assets caused overhead to soar — a predicament that continues unabated in certain market segments (e.g., retail and mortgage banking). For example, as shown on page 2, in 2012 a significant number of banks' portfolios suffered from nonperforming assets.

In this uncertain environment, multiple stakeholders, as well as regulators, need constant reassurance that their expectations of good-quality, low-risk loans can be met through ongoing surveillance and early detection. Accordingly, institutions realize they must be more proactive in monitoring their assets.

The warning signs of problem assets can be grouped into five areas: financial, behavioral, geographic, industry and perception. In this white paper, we will analyze these areas and identify measurable indicators. We will also pinpoint and discuss steps that banks can take to safeguard their assets, and present a basic framework that can be used to develop an early warning system.

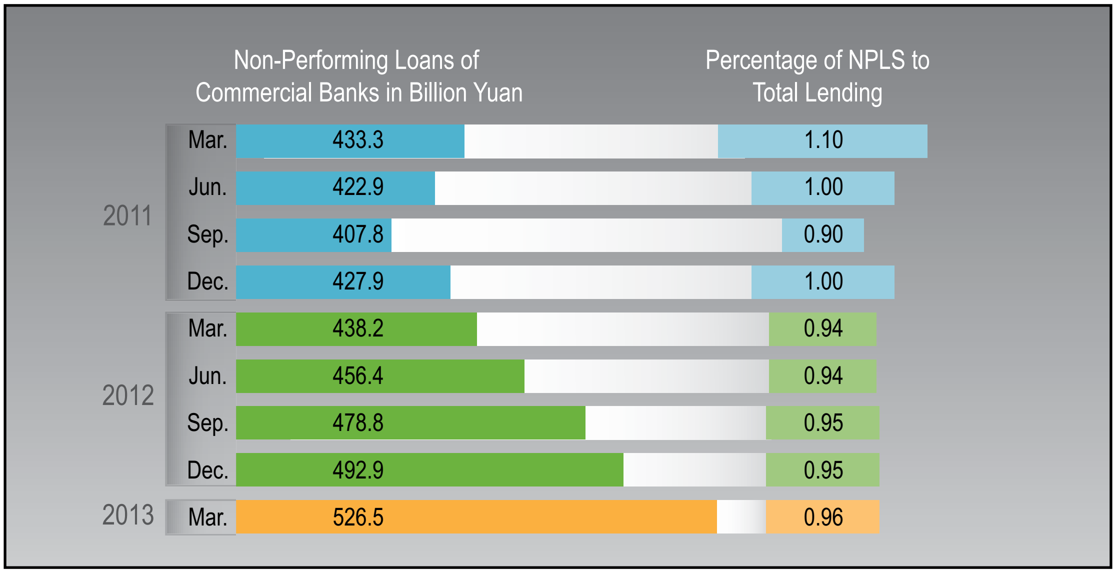
An Early Warning System: Overview and Business Case

An early warning System (EWS) is a set of guided processes for identifying risks at a nascent stage. A well designed EWS helps senior management forecast impending events likely to negatively affect the organization. Moreover, such a system can significantly strengthen oversight of a bank's assets.[1]

Effective monitoring can lower loan-loss contingency by 10% to 20%.[2] Institutions with sound credit-monitoring practices have a strong risk appetite, a higher return on equity, and a better capital yield. They can maintain tighter control over their assets by:

- **Minimizing the likelihood of customer defaults:** Evaluating a portfolio on a regular basis helps to maintain loan quality. In the case of a single customer, the monitoring mechanism systematically scans the portfolio — exposure by exposure — with the relevant EWS. If a red flag is raised, the system triggers the appropriate action to prevent default.

The Price of Non-Performing Assets: Results from 2012



Source: Wind Information, LIYI/China Daily.
Figure 1

- **Proliferating the collateral value of defaulted loans (reducing loss in case of default):** Evaluating a portfolio, as well as monitoring individual customers, involves augmenting and maximizing the collateralization for sectors and/or individual customers under surveillance, thereby mitigating loss in the event of an actual default.
- **Decreasing the exposure of defaulting customers:** While monitoring and analyzing portfolios helps ensure that banks lower their exposure to at-risk sectors, timely intervention at the individual level can help to minimize exposure to high-risk customers.[3]

Early Warning Indicators

As noted, the warning signs of problem loans span financial, behavioral, geographic, industry and perception categories. In the following sections, we will analyze and identify indicators, as well as remediation measures, that pertain to each of these areas.

Financial Indicators

Financial indicators are among the most reliable ways to target asset-related issues, and can be a major red flag for banks (see Figure 2, page 3). A late loan payment or a sudden overdraft can be very revealing.[4]

Financial indicators can also signal other problems, such as:

- Frequent credit checks and inquiries about a customer, hinting at anomalies in his or her credit history.
- Guaranteed payments towards creditors become a necessary requirement.
- A rise in the number of returned items from the deposits or returned checks drawn on the customer's account.
- Utilizing operating loans completely — and for extended periods.
- Breaching the limit of operating loans; for example, a sudden overdraft without any business logic.
- Pending unpaid dues to third parties, such as healthcare providers.
- Delayed or missed employee payrolls.
- A noticeable increase in collection activity, either on behalf of or against the customer.
- Regular and unplanned requests for a temporary loan accommodation.
- Operating loan covenants fully utilized or actually out of covenant.
- Changes in the health of accounts receivable, inventory and accounts payable.

Financial Indicator Measures

Indicators	Measure	High	Medium	Low
Customer's creditworthiness	Increase in number of credit checks and inquiries about the customer.	X		
Customer's creditworthiness	More necessity for guaranteed payments towards creditors, i.e., Letters of Credit or bank checks.		X	
Customer's creditworthiness	Returned items from deposits made by the client.			X
Customer's creditworthiness	Returned checks drawn on the client's account.		X	
Operating loan utilization	Operating loans fully utilized for extended periods.		X	
Operating loan utilization	Operating loans over their limit; for example, a sudden unrequested overdraft.		X	
Legal proceedings	Increased litigation against the client.	X		
Legal proceedings	Third-party claims such as those due to the government or healthcare providers.	X		
Expenses management	Payroll delayed or missed (a very serious situation).	X		
Operating margin	Increased collection activity either by or against the client.		X	
Cash flow requirements	Frequent and sudden requests for a temporary bulge or loan accommodation.			X
Covenants and collateral tracking	Operating loan covenants squeezed or actually out of covenant.	X		
Appropriate use of operating loans	Any inappropriate trend relative to events; for example, a fully used operating loan inconsistent with sales or credit policy.		X	
Accounts receivable (A/R) should represent actual realizable value in the normal course of business.	A conservative measure would be to deduct all of any account that is well beyond the normal terms of trade. For example, this would be over 90 days for accounts with 30-day terms.		X	
Inventory must represent actual items that are in good/usable condition.	For inventory, obsolete, spoiled, recalled or unsalable items should be deducted.	X		
Accounts payable must include all amounts that are due.	AP principally addresses trade debt, and may include such things as employee deductions for accrued insurance payments or other third-party liabilities. Can also include more exotic liabilities, such as amounts due for environmental or labor fines.	X		

Figure 2

Behavioral Indicators

Behavioral warning signs give lenders clues about the integrity and competency of owners and managers. The symptoms of behavioral problems can be identified by the following indicators:

- Any attempt at deception/misrepresentation of facts (this is a clear warning sign and needs to be heeded).
- Regular and consistent attempts at delaying financial reporting requirements; reluctance or unwillingness to respond to various communications.
- Avoiding direct and complete responses to specific questions; bluffing by answering a question with a question.
- Evading requests or providing irrelevant information to a request; excessive delays in responding to a request for no valid reason.
- Evidence that points to the possibility of records being misrepresented or inadvertently destroyed.
- Key resources/personnel not present in important planning and strategy sessions.
- A sudden and significant decline in liquidity, reflected by a lack of major investments, expansion plans, etc.
- Frequent personnel changes to the accounting team or in accounting practices.
- Frequently approaches different accounting firms.
- Overemployment, i.e., employee strength does not correlate with business volume; maintains non-existent employees on the company payroll.
- Transferring assets without any concrete business reason to back up the decision; disposing of the asset at less than the fair value.
- Excessive number of business accounts that seem irrelevant to the needs of the business.
- Misdirection of current payments to clear dues related to older accounts.
- Creating fake or shell entities for the purpose of misappropriating goods and services.

Geographic Indicators

Some of the symptoms of geographic problems can be identified by the following indicators:

- Exchange rate devaluation.
- Continuous decline in economic growth in the region.
- Degraded creditworthiness in the country.
- Continuous increase in yield on sovereign bonds.
- Steady growth in money laundering. Country risks due to unfavorable political environment.

Industry Indicators

The symptoms of industry-specific problems can be identified by the following indicators:

- Steady decline in industrial growth rate.
- Increase in adverse industry regulations, such as a ban on exports.
- Inability to control increasing costs and rising input prices.
- Threat of business shift to emerging markets.
- Changing customer behavior with respect to the business segment.[5]

Perception Indicators

Perception plays a major role in augmenting a company's growth and its assets. Perception-based problems can be identified by some of the following indicators:

- A decrease in awareness of the client's brand and/or logo.
- Less positive media exposure.
- Deteriorating relationships.
- Equity market collapse.
- Negative price perception in the eyes of end-customers.
- Recall of sold products.

Key Preventive Measures

The most important rule for protecting assets is "know thy client." This is essential – from loan origination through the process of monitoring debt obligation. Understanding the client is the first principle in loan monitoring. With this in mind, we advise banks to:

1. **Maintain frequent communication with the client.** This practice throws light on the client's ongoing operations – highlighting if there are any debt-related security issues to consider. It also offers an opportunity to communicate directly with company employees.
2. **Pursue active interaction with accounting teams.** Communicate and interact with the core members of the internal accounting team and the external accounting firm representing the customer. This should include a meeting at the offices of the accounting firm.

Behavioral Indicator Measures

Indicators	Measure	High	Medium	Low
Trust and credibility	Any deception, misrepresentation or lie. (This is a clear and strong warning sign).		X	
Sound and timely financial reporting	Any consistent delay in financial reporting requirements.	X		
Customer communication	A reluctance or unwillingness to communicate.			X
Customer communication	Failure to respond to a specific question directly and entirely.		X	
Customer communication	In an interview, answering a question with a question.			X
Customer communication	Providing evasive or unspecific information to a request.	X		
Customer communication	Unreasonable and frequent delays in response to a request.		X	
Asset records maintenance	Any indication that records have been mislaid or inadvertently destroyed.		X	
Stakeholder interest in business strategy and planning	Absence of key personnel from crucial planning or strategic sessions.			X
Liquidity decline	A very rapid and significant decline in liquidity that does not seem to be supported or explained by business conditions or events.		X	
Accounting staff and procedures	Too much change in accounting personnel or procedures.	X		
External accounting firm changes	Changing external accounting firms too often.	X		
Improper documentation	Excessive photocopies of invoices, particularly if they are out of sequence.	X		
Number of employees	A disconnect between the number of employees relative to business volumes; also, false payroll using nonexistent employees.		X	
Asset transfer	Asset transfer without a sound business reason or at less than fair value.			X
Large number of accounts	A large number of business accounts inappropriate for business needs.			X
Lapping	Lapping, or misdirecting customer payments, such as using a current payment to pay older accounts.		X	
Fake entities	The use of fake or shell entities to manipulate goods and services.	X		

Figure 3

Geographic Indicator Measures

Indicators	Measure	High	Medium	Low
Exchange rate devaluation	Volume, composition and volatility of any foreign exchange trading positions taken by the financial institution.			X
Economic growth	Sustained YOY decline in economic growth of the region.		X	
Change in creditworthiness	Country ratings downgraded by credit rating agencies like S&P.	X		
Yield on sovereign bonds	Consistent YOY increase in yield on sovereign bonds of the region.		X	
Money laundering	Consistent increase in number and volume of reported money laundering activities in the region.	X		
Country risks	Enhanced probability of unstable political situation.	X		

Figure 4

Industry Indicator Measures

Indicators	Measure	High	Medium	Low
Industrial growth rate	Consistently less than expected growth rate YOY in the asset industry.		X	
Industry regulations	Industry regulations resulting in losses such as exporting bans.		X	
Inability to control costs/ rising input prices	Continuous decrease in operational margins across the industry.	X		
Emerging markets	Inability to penetrate emerging markets.	X		
Changing customer behavior	Failure to respond to shifting consumer behavior.		X	

Figure 5

Perception Indicator Measures

Indicators	Measure	High	Medium	Low
Brand awareness	Brand impact due to multiple mismanaged deliveries.	X		
Media exposure	Multiple negative news stories published.	X		
Relationships	Deteriorating relationships with suppliers and end-customers.		X	
Stock trading	Consistently declining company stock QOQ.		X	
Price perception	Feeling of overpriced products, and better-quality goods being available in the market.		X	
Recall of sold products	Multiple YOY recall of goods already sold to customers due to hazardous defect detection.	X		

Figure 6

3. **Institute performance tracking.** This information should be used to draw parallels in order to track performance in key areas such as sales, cost of goods sold and working capital.
4. **Identify behavioral signals.** Use plant visits and monthly reporting as opportunities to identify behavioral red flags.
5. **Establish a minimum number of asset covenants that have maximum import.** There is little point in creating many covenants, most of which will be breached and almost all automatically waived.
6. **Heed multiple warning signals.** Multiple warning signs from any quarter are an indication of distress.

An Early Warning System Framework

A rules-based EWS identifies borrowers at risk of distress or default. Such a system must not only integrate a reliable database and rigorous statistics; it must also ensure that "soft" success factors are in place, i.e., close collaboration among monitors, underwriters and the front line Identified cases are assigned to different watch-list categories, depending on the nature and severity of the risk. Assignment to a watch-list category triggers a predefined set of risk-mitigating actions, including some that are mandatory and others that are optional (for example, reducing internal limits or increasing pricing). However, as always, the devil is in the detail."

Our framework defines an approach for creating an early warning system for assets. For every asset, the framework would need to be populated at the creation stage.

There are generally three stages in the lifecycle of an asset: creation, servicing/monitoring and closure. The EWS process will run in parallel, and reverberate throughout these stages. The following constitute the three major phases of operation of an early warning system:

1. **Identification and capture:** This phase encompasses three steps:
   - **Indicator identification:** Relevant indicators against the five early warning indicator categories are identified and selected, based on their significance for the asset type.
   - **Definition of measures against indicators:** For each selected indicator, one or more measures need to be defined; most must be defined quantitatively.
   - **Trigger definition:** Depending on the severity assessment of the measures, triggers

A Framework for Capturing Early Warnings

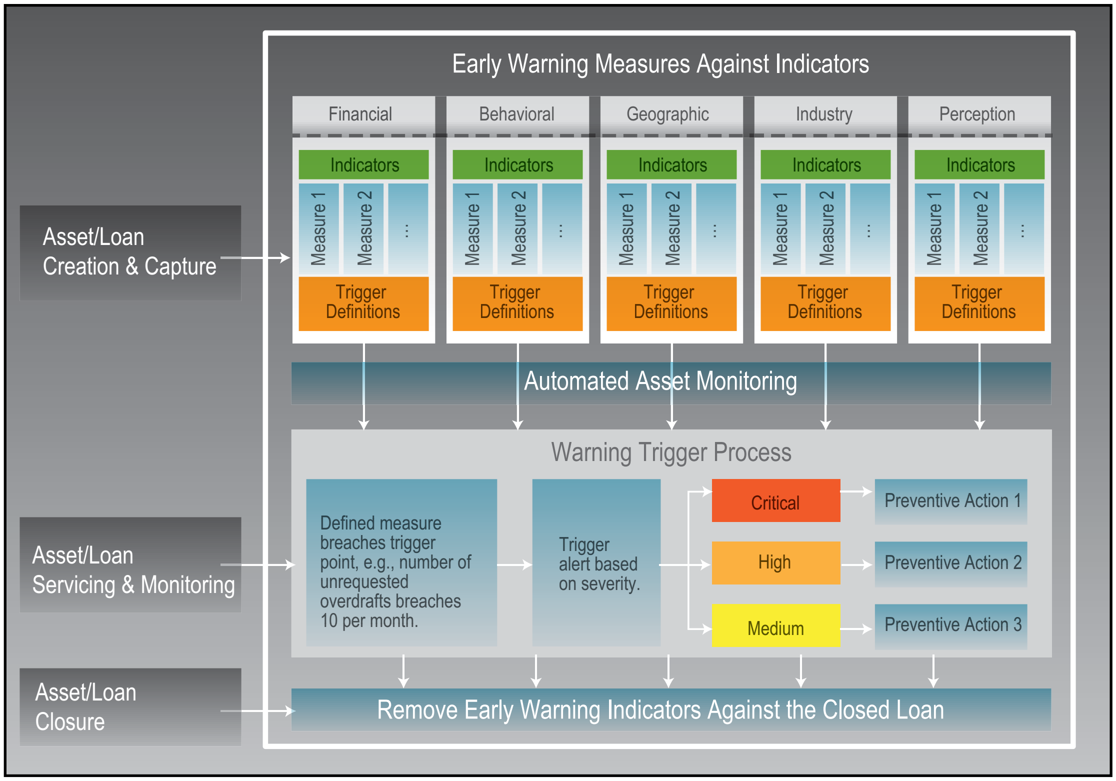


Figure 7

EWS Framework Sample Data Points

	Inputs					Output
Type	Indicator	Measure	Critical Severity Criteria	High Severity Criteria	Medium Severity Criteria	Preventive Measures (Examples)
Financial	Customer's credit worthiness	More necessity for guaranteed payments to creditors (i.e., letters of credit or bank checks).	Greater than 100 per month	Between 10 and 100 per month	Less than 10 per month	Do not give fresh loans to the customer.
Behavioral	Trust and credibility	Any deception, misrepresentation or lie (This is a clear and strong warning sign).	More than five instances	Between two and five instances	Less than two instances	Consult with account manager and start reducing the customer's credit line.
Geographic	Economic growth	Sustained YOY decline in economic growth of the region.	Three years continuous decline	Two years continuous decline	One year continuous decline	Reduce exposure in financial instruments of the region, e.g., sell the government bonds.
Industry	Industrial growth rate	Consistent YOY less than expected growth rate in the Asset industry.	Three years continuous decline	Two years continuous decline	One year continuous decline	Reduce exposure in the asset segment.
Perception	Recall of sold products	Multiple YOY recall of goods already sold to customers due to hazardous defect detection.	Three or more instances	Between one and two instances	One instance of recall	Consult with account manager and start reducing the customer's credit line.

Figure 8

must be defined to generate appropriate warnings.

- **Preventive action definition:** Define preventive actions to be taken, based on the severity level of warning, in the event that warnings are generated.

2. **Monitoring and generating preventive actions:** This phase runs in parallel with asset servicing, and monitors the day-to-day events and activities recorded against the asset. Based on the defined criteria in Phase 1, when a measure breaches the defined trigger point, the system generates an appropriate warning and offers a recommendation for preventive action to be taken to mitigate the risk emanating from the warning. In the example discussed above, if a critical warning is generated, the system would generate a preventive action; for example, a recommendation to increase the collateral position against the asset.

3. **Early warning removal:** Once the asset reaches its maturity, the early warning criteria defined against it would be removed. This would happen at the time of asset closure.

Looking Ahead

It is a challenge for banks to assess pre-default identification of high-risk customers. To do so, they must transform their processes quickly and comprehensively, and develop a system for effectively monitoring risky accounts. This means gradually reengineering business processes from "quarterly or annual" monitoring to a continuous, "day-on-day" or "event-based" monitoring mode.

Banks' IT systems must also evolve to address more automated monitoring and mitigation, and reduce manual triggering. These steps will act as building blocks in establishing a robust early warning system that helps banks to substantially reduce the number of non-performing assets.

Footnotes

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