Risk Appetite Setting

Just Like Dieting, Good Intentions Won't Be Enough

••The economic capital concept can help banks turn risk appetite from a statement of good intentions into a platform for shaping short- and long-term risk-taking decisions.

BY SHAHRAM ELGHANAYAN AND KAIZAD CAMA

IT'S EASY TO say you're going on a healthy diet, but it's a lot harder to stick to it over an extended period. The banking industry is similar: Regulators and investors are demanding that banks explicitly set out the nature and level of risk they want to assume—their *risk appetite*—and explain how they will stick to it in the face of aggressive business goals, increasing competitive pressures, and changing economic conditions.

Setting out good intentions for risk control at the top of the bank won't be good enough. The real challenge will be to express the bank's risk appetite in a way that can be driven down into the business lines to shape risk-taking decisions, over both the long and short terms.

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In the case of capitalized risks, notably credit risk, this goal is best pursued using the economic capital concept. The strength of economic capital is that it measures the level of unexpected losses and tail-risk events arising from highly volatile and concentrated portfolios. It is responsive to a range of risk factors, from obligor probability of default and the nature of the deal's collateral to the maturity or payment structure of a loan, as well as single name or portfolio concentrations.

What's the Best Thing on the Menu?

The first step should be to analyze the principal business lines in terms of the risk and reward implications of the bank's existing business strategy. For example, the bank might have defined a business goal for an activity in terms of expected net interest margins and business volumes. What amount of risk will the business line need to assume in order to reach these goals, in terms of both the level of expected losses and the economic capital required to support the business?

In part, this is a matter of applying a traditional bottom-up economic capital analysis—looking at the risk drivers of the business transacted and using the bank's economic capital model to calculate the associated risk capital. However, the bank also is trying to explore a wider market reality for each of its business lines: What is the maximum reward the bank can reasonably expect in the relevant market for taking different amounts of risk?

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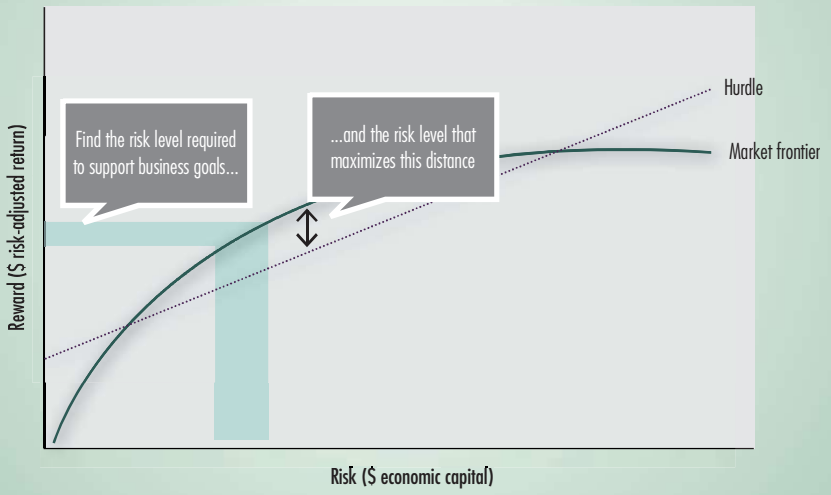
Answering this question will be easier if the bank also has begun to collect data on deals for which it has pitched and lost as well as deals that it has won, including facility terms. This kind of data on "lost and won" deals will give the bank a much fuller picture of the kind of market terms it will have to offer—for example, the riskiness of obligors and the amount and type of collateral that can be demanded—in order to secure its business objectives, given the competition in the lending market.

Figure 1

What Does the Balance of Risk and Reward Available in the Market Say about Risk Appetite?



The point of this part of the process is that it forges a link between the bank's eventual agreed on top-of-house risk appetite, its business-line planning, and marketplace realities.

Figure 1 illustrates a key step. Here, the bank has plotted out a business line's potential market portfolio in terms of the economic capital associated with each known deal and the rewards.

Box 1

Checking for Specials

The article discusses credit tail risks as if they were captured perfectly by economic capital models. But this doesn't really take us quite far enough, for three reasons:

1. ***Pain points inside the model.*** Economic capital models focus on losses that are large enough to threaten bank solvency. But no bank is an island, and sometimes losses at much lower levels will trigger a life-threatening loss of confidence—for example, a sudden spike in commercial real estate losses in a bank with a large CRE portfolio. The bank also should use its judgment to identify these lower-level pain points and then identify the portfolios where such losses might occur. Economic capital models offer an efficient tool for doing this. The bank can then risk-manage the likelihood of breaching these pain points—for example, by limiting single-name risk. Alternatively, it can mitigate the consequences—for example, by ensuring funding liquidity after a pain-point credit shock.

2. ***What's driving the bank's overall risk?*** Even if the bank is taking on the right level of risk, it's important to know where the risk is coming from. For example, is risk at the bank level most sensitive to low credit scores in the credit card portfolio (high probabilities of default and high expected losses) or to the high exposure sizes in CRE? Given this, how can management best focus its oversight and how can the bank stick to its risk appetite most efficiently—for example, lose the most risk for each risk management dollar? Moreover, the bank also will want to take particular care (or be particularly conservative) when estimating risk-factor parameters in the business areas that drive economic capital up the most.

3. ***Stress testing outside the model.*** Even best-practice economic capital models remain a work in progress. They can't capture every possible risk interaction or second-order effect that might be a threat. For example, most economic capital models do not treat the relationship between credit and liquidity risk in a very sophisticated way. So it's important that the bank also builds an independent program of stress testing to explore the dynamics of risk—especially sequences of events—that are particularly relevant to its portfolios and its business strategy.[1] ❖

In the actual analysis, the maximum risk-adjusted reward for deals of any given risk level would be marked by the upper frontier of a cluster of transaction points—that is, the transactions that offer the highest risk-adjusted return for a given level of risk. For clarity, this is represented in Figure 1 by the solid "market frontier" line.

The bank then looks for the level of risk that maximizes the distance between the achievable market frontier of risk and reward and the bank's risk-adjusted hurdle rate of return. These are the deals the bank would really like to focus on if there were no mission-based or philosophical constraints on its risk appetite. They represent the "sweet spot" of the market from a pure risk-adjusted-return point of view.

Of course, the point of the exercise is that the bank is indeed concerned about these other factors. Focusing on the sweet spot in each market might generate more risk than bank executives are happy to swallow, whatever the attractions of the risk-adjusted rate of return.

The next step is to answer a series of critical questions:

- What does the analysis tell the bank about its existing, de facto risk appetite at the business-line level, in terms of the rates of expected loss and the amount of economic capital associated with existing portfolios and projected portfolios?
- To what degree are these in line with the risk level that maximizes risk-adjusted return—that is, the sweet spot?
- If the bank were able to focus investment on the sweet spot, which risks would this generate?
- More generally, what do the bank's business goals imply about the bank's risk-taking in this marketplace? Does the required rate of return still look reasonable in light of the bank's evolving perception of its risk appetite?

How Much of Each Course Should We Eat?

At this point, senior executives must bring together the various business-line portfolio analyses to examine both the existing and the optimizing risk profiles of their whole collection of business lines.

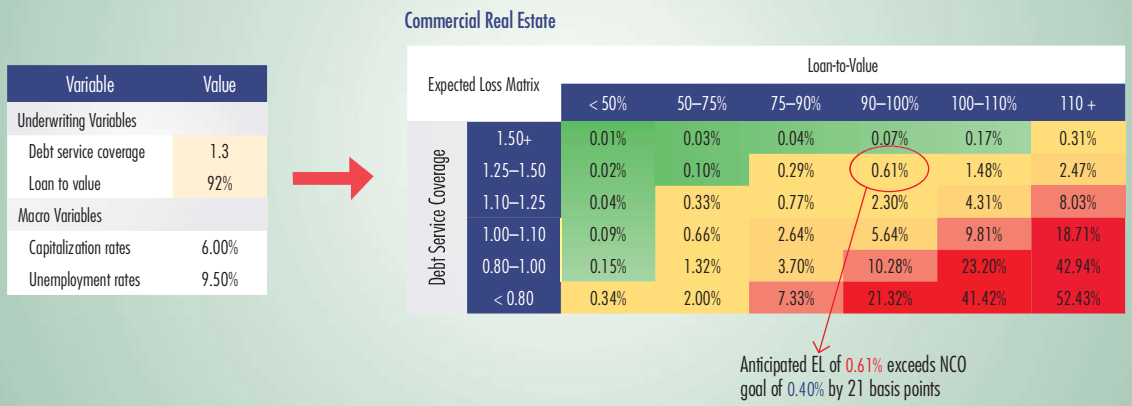
Ideally, at this point, the bank also will use credit portfolio models and enterprise-wide economic capital models to aggregate the line-level risk analyses in a way that takes account of enterprise risk concentrations and risk interactions and that allows the bank to understand where opportunities lie for diversification.

How well do the results of the various analyses fit with the board's gut feelings about the appropriate bank-wide risk appetite? Do they add up to a picture the board is happy with or not?

The board will need to take into account many real-world forces that put boundaries around a bank's risk appetite, including the bank's mandate or charter and its regulator-

Figure 2

Heat Maps Reveal Underwriting Criteria That Match—or Miss—the Bank's Risk Appetite



enforced risk profile. Therefore, it will have to consider how qualitative descriptions of risk appetite can be related to a bottom-up risk appetite quantified in terms of economic capital and expected loss. However, the board's gut feelings about the most appropriate risk appetite will likely already have found some objective expression that can be related back to economic capital concepts, such as a desired bank solvency standard and credit rating.

Of course, the bank may find that the bottom-up analysis of its existing and optimal risk profile does not offer comfort. For example, the board may feel that the aggregate amount of tail risk is too high because it jars with the bank's mission statement or public commitments to investors.

To the extent that the fit is imperfect, the question for executives becomes this: What is the best way to change the bank's risk profile so that it conforms to a more conservative risk appetite while meeting, as far as possible, the bank's business goals?

It also can help, at this point, for executives to analyze the risk-and-return profiles of the banks that fared best in the recent economic recession. What did these banks look like, in terms of the level and nature of the risks they were assuming, in the years immediately prior to the credit crunch?

The great advantage of an economic capital model here is that it allows the bank to efficiently explore many possible risk-and-capital scenarios and to triangulate toward the best solution, taking account of its risk appetite, business goals, and market realities. For example:

- Which businesses can be expanded to boost returns in exchange for relatively little tail risk?
- Are there opportunities to grow businesses toward their optimal (sweet spot) risk profile within each business portfolio without exceeding the bank's risk appetite?
- Where should the bank divest itself of business, such that it loses the most tail risk while sacrificing the smallest amount of returns?

There will be various complexities to keep in mind. For example, focusing too much on optimal deals (or business lines) might itself increase concentration risk and drive up risk and economic capital consumption. The risk team also will need to be clear with the board about which risks are included in the economic capital calculation, the degree of certainty associated with key model sensitivities (for example, assumptions about risk-type correlations at the enterprise level), and various other qualifications (listed in Box 1).

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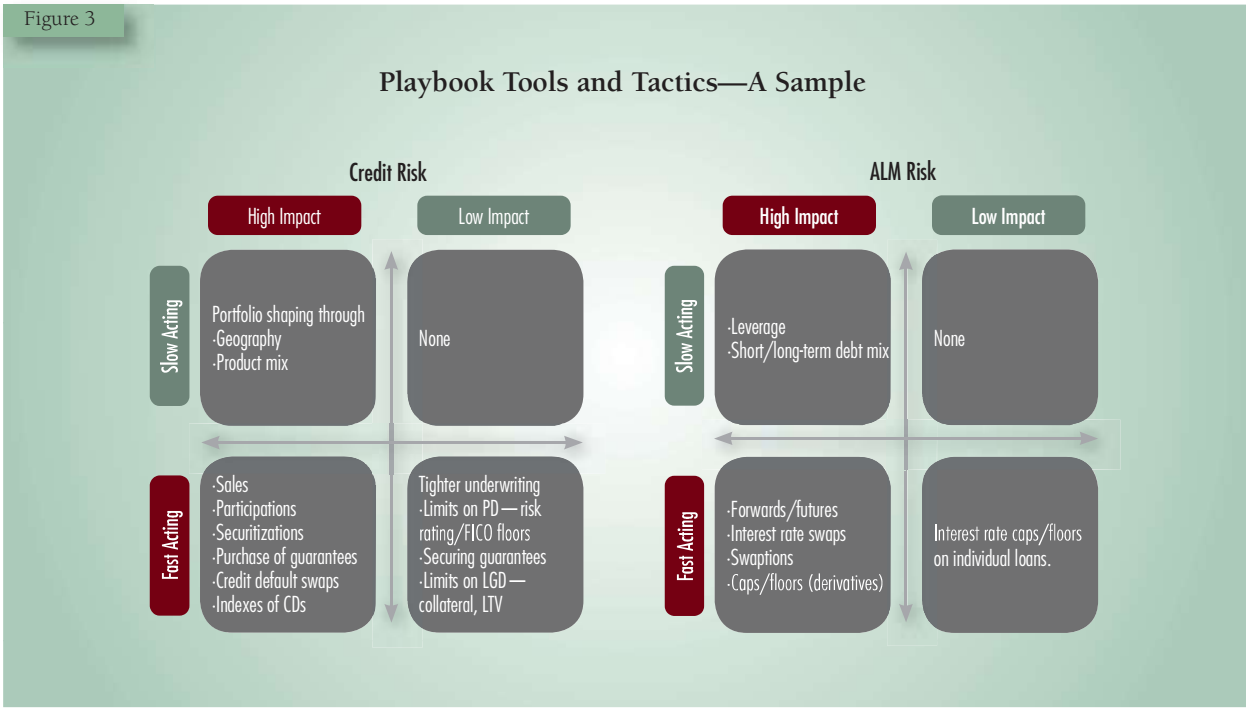
Sticking to the Diet

Once the bank has converged on a top-of-house credit risk appetite in terms of economic capital (tail risk) and expected loss (long-term average loss), and is satisfied that its business goals are realistic in light of this, it can start to operationalize its risk appetite within business lines.

In theory, the first step is to allocate top-of-house economic capital limits back down to the business-line portfolio, sub-portfolio, and product level. In practice, this part of the process will already have been achieved because, in our methodology, the allocation of economic capital falls naturally out of the "bottom up" risk-appetite setting and business portfolio optimization process.

Figure 3



However, to fully operationalize the risk appetite at the business-line level, banks will need to translate line-level economic capital guidelines into limits that are more immediately meaningful to lenders and line managers and easier to administer and monitor.

The bank does this through a series of sensitivity analyses that show how changes in traditional underwriting criteria—such as FICO scores, collateral type and amount, and segment concentration limits—drive economic capital up and down. This allows the bank to translate allocated economic capital into limits based on traditional risk factors—for example, a FICO ceiling. However, these limits remain driven by the economic capital analysis, maintaining the critical link between business unit limits and the bank's top-of-the-house risk appetite analysis.

Setting risk limits is the traditional way for management to control the behavior of business lines, but there are many other drivers of bank risk-taking.

As a heuristic for lenders, it helps to create a series of color-coded heat maps that identify where the bank's risk is coming from (for example, which portfolios and segments) and that also reveal each portfolio's risk sensitivity to particular underwriting criteria.

In Figure 2, a bank has used an economic capital model to relate the underwriting criteria in its commercial real estate portfolio to expected loss rates. The heat map highlights the segments (or underwriting criteria) that will contravene the bank's risk appetite if they are expanded (or relaxed) too aggressively.[2]

Carrots Can Be Good for You

Setting risk limits is the traditional way for management to control the behavior of business lines, but there are many other drivers of bank risk-taking. These include the methodology that the bank uses to measure business performance and the structure of incentive compensation schemes.

Ideally, banks will make sure all their decision drivers are both adjusted for the cost of risk *and* shaped to the bank's risk appetite (for example, sensitive to economic capital limits). In an earlier *Journal* article, we took a closer look at how to build a risk-adjusted compensation scheme that is aligned with the bank's risk appetite, as expressed through economic capital.[3]

Writing Down Recipes

Having worked out its desired risk appetite and the limits this implies, the bank will find it useful to create some kind of tactical and strategic playbook for future help in decision making. The playbook sets out strategies for managing the bank's risks so that it can stick to its risk appetite in the face of market events while pursuing growth and maximizing revenue.

For example, on the basis of a specific analysis, the playbook might set out how quickly the bank can bring down

Box 2

Mismanaging Your Appetite—Top Four Failures

1. Failing to operationalize your stated risk appetite and connect it to business decisions.
   Result: *Risk appetite does not affect bank behavior.*

2. Specifying the risk appetite without tying it to profitability goals.
   Result: *Risk appetite remains an unrealistic ideal rather than a business goal.*

3. Too much focus on recent charge-off history and too little on tail risk and through-the-cycle economic capital.
   Result: *The bank makes a profit in good times and is ruined when tail risks materialize during downturns.*

4. Failure to hunt down pain-point losses or stress-test risk assumptions (see Box 1).
   Result: *The bank is exposed to effects of a sudden, damaging loss of confidence and unforeseen loss spikes.* ❖

tail risk and average loss rates in a portfolio by employing a FICO floor or a loan-to-value ratio ceiling.

The playbook should also include more drastic measures to bring the bank back in line with its risk appetite when it suddenly discovers that it has drifted far from its target risk levels. An industry event, for example, might reveal that one of the bank's credit portfolios is much riskier than at first imagined.

Ideally, banks will make sure all their decision drivers are both adjusted for the cost of risk and shaped to the bank's risk appetite.

The drastic measures might include selling off particular bank portfolios in various market environments and developing strategies using credit-transfer instruments such as credit default swaps.

The aim here is for executives to better understand the "big red levers" they have available in steering the bank toward its business goals while sticking to its agreed-upon risk appetite.

Figure 3 characterizes some typical playbook strategies for altering credit and interest-rate risk profiles toward the bank's risk appetite, in terms of their strength and speed of impact. Various kinds of early warning indicators can be set up within bank portfolios (for example, trends in debt-service-coverage and loan-to-value ratios in CRE portfolios) and externally (such as models that forecast loss trends from deteriorations in macroeconomic factors like unemployment rates) to alert the bank to the need for preemptive action.

Figure 4

Putting the Playbook into Action

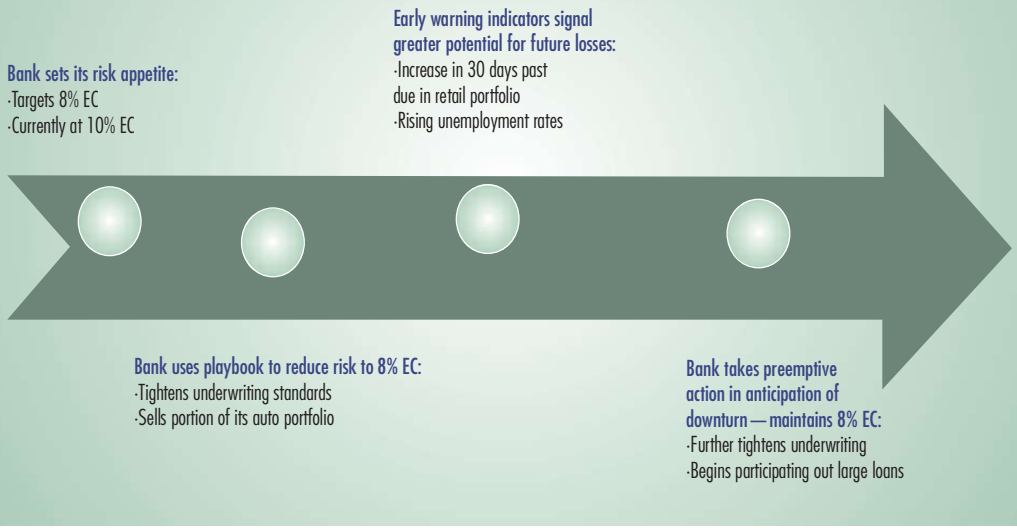


Figure 4 shows a timeline illustrating how certain playbook strategies might be brought to bear, in tandem with these early warning indicators, to help a bank stick to its risk appetite. In this figure, economic capital (EC) is used as a proxy for tail risk.

The overall aim is to avoid the historical errors in risk-appetite setting and move to a point where the bank's risk appetite is realistic.

Conclusion

Most types of capitalized bank risk can be approached in the way that we have outlined for credit risk, although with different underlying risk metrics.

The bank's whole collection of risks will have to be monitored by senior management, so it makes sense to set up a reporting dashboard that tracks whether the bank is staying within its pre-agreed risk appetite.

The overall aim is to avoid the historical errors in risk-appetite setting (Box 2) and move to a point where the bank's risk appetite is realistic, operationalized, and in accord with its business goals.

Under this concept, the bank's risk appetite is much more than a statement of good intentions for an external audience. It is a platform of agreed-upon acceptable risk outcomes that will help executives solve many of the management challenges of post-crisis banking, as well as plan for a future with fewer surprises. ❖

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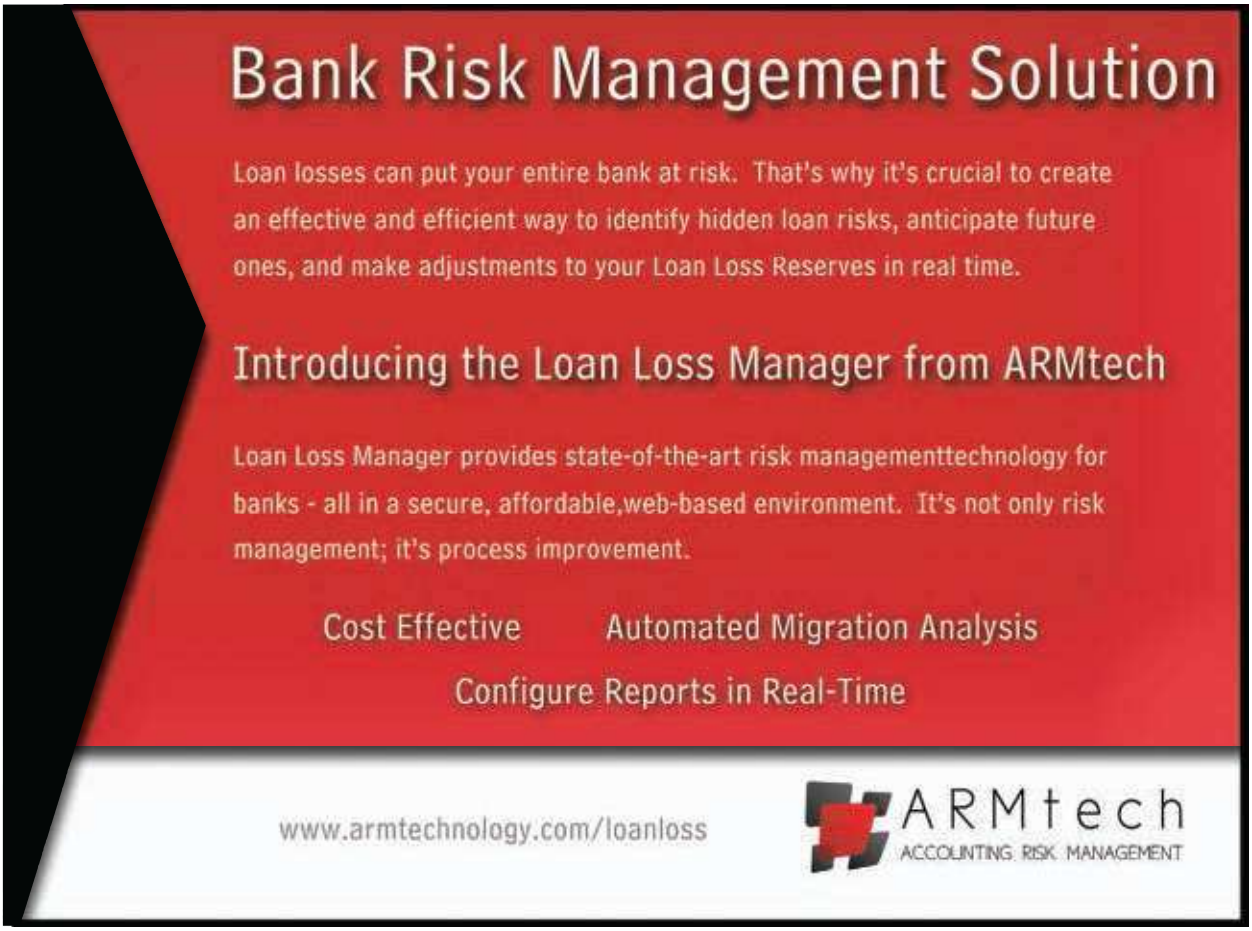
Notes

1. The relationship between stress testing and economic capital modeling is discussed in "Piling the Stress on Economic Capital?" *SunGard Ambit Risk Report,* Summer 2008.

2. An earlier article in *The RMA Journal* described exactly how this can be executed through a cascade of tangible limits that includes size-based limits, economic-capital-based limits, and risk factor/underwriting criteria-based limits. See Jonathan York, "Bank Concentration Risk: Beyond the Limit?" *The RMA Journal,* September 2007, pp. 52–57.

3. Shahram Elghanayan and Kaizad Cama, "Are You Up-front on Lender Pay?" *The RMA Journal,* May 2010, pp. 14–19.



A Demand Note Remains a Demand Note, Despite References Not Usually Found There

In *Reger Development LLC v. National City Bank,*[1] the issue was whether a demand note had lost its character as a demand note. The court held that it had not.

Reger Development LLC had a line of credit with National City Bank for which it paid a $5,000 closing fee. It was memorialized with a promissory note and a commercial guaranty executed by Kevin Reger, the sole member of the LLC.

The two-page contract and note for $750,000 stated quite prominently, in at least three different places, that the debt was payable on demand. Indeed, the first clause in the note read as follows:

> "PROMISE TO PAY. Reger Development, LLC ("Borrower") promises to pay to ("Lender") or order, in lawful money of the United States of America, on demand, the principal amount of Seven Hundred Fifty Thousand and 00/100 Dollars ($750,000.00) or so much as may be outstanding together with interest on the unpaid outstanding principal balance of each advance. Interest shall be calculated from the date of each advance until repayment of each advance."

Immediately above the signature line, in capital letters, was a provision stating that the borrower had read and understood the terms of the document. However, the note also contained a clause dealing with an increase in the interest rate after default, a clause allowing unlimited prepayment, and a clause giving the bank unlimited access to the borrower's financial information.

One year after the line of credit was established, the bank asked the borrower to "term out" $300,000 of the note by having one of Reger's other businesses take out a three-year loan for $300,000 secured by a junior mortgage on real estate. Apparently, Reger was told that if he did not do this, the bank would demand payment of the line of credit. All interest payments were current and, prior to that, the borrower had made a principal reduction of $125,000 at the bank's request.

Reger responded to the bank's demand to "term out" $300,000 of the note by suing the bank for breach of contract. He alleged that the threat to call the loan was improper because the note was not a demand note. The court disagreed with Reger and ruled in favor of the bank.

The court said: "We are not persuaded by the suggestion that these references to due dates and default somehow overpower the repeated, explicit contract language setting forth the lender's right to demand payment at any time."

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But the court did refer to cases from other jurisdictions that held a demand note may indeed lose its character as a demand note if an acceleration clause, premised upon events of default, is included, citing *Bank One, Texas, N.A. v. Taylor.*[2]

What's the point?

A demand note should not contain enumerated events of default or an acceleration clause. These provisions are not necessary, and either one may cause the note to be characterized as something other than a demand note. ❖

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Notes

1. U.S. Court of Appeals for the Seventh Circuit, Jan. 20, 2010, Docket Number 09-2821.
2. 970 F.2d 16 (5th Cir. 1992).