SUNGARD AMBIT - SOLUTIONS FOR THE WELL MANAGED BANK

RISK REPORT

Should Your Risk Appetite Go Up and Down?

Regulators, investors and other external constituents are beginning to demand that banks set out their 'risk appetite', that is, the nature and level of risk the bank is happy to assume in pursuit of its business goals. A key question, however, is whether this risk appetite should be constant or vary, for example:

- with the ups and downs of the economic cycle
- across business lines
- with changes to the bank's strategy

Constant through time…

Though recent events suggest that a bank's risk appetite inevitably changes with the economic cycle, a closer look reveals that this is not truly the case. During the banking crisis, the financial press often talked about banks (and investors) 'losing their appetite for risk'. In the same story, however, they might report that banks were raising capital—which is what happens whenever banks want to increase their risk appetite *or* when they realize they have underestimated their existing risk.

In truth, banks were concurrently downsizing risks by shedding risky assets and replenishing risk-taking capacity by raising capital buffers in order to reach a balance—a risk appetite —acceptable to markets and regulators. Their actions likely indicated not a change in risk appetite, but the lack of any previous clear statement of risk appetite that put enforceable limits around the tail risks they ran.

Pressure on the industry to set out formal risk appetites is an attempt to push this moment of 'risk appetite discovery' back to a less disruptive point in the economic cycle, so that tail risks can be managed efficiently before disaster strikes.

Internally, the constancy of the risk appetite is important because bank managers need a stable reference point if they are to create an appropriate business model and make the risk appetite transparent to staff (i.e., no moving goal posts). Likewise, for external parties such as shareholders, debtholders and regulators, a constant risk appetite creates more transparency and helps the bank reduce its loss volatility by being proactive, not reactive, to deteriorating conditions.

So where are the moving parts?

Since risk appetites should be held constant, what are the moving parts in terms of the bank's response to cyclical risk?

First, while risk appetite stays constant, risks do not. The bank takes new amounts and kinds of risks, identifies new threats in existing portfolios, and monitors risk trends in its various markets, e.g., an apparent supply/demand mismatch in the commercial real estate market.

The key contribution of a risk appetite here is that it focuses the bank's attention on these potentially large risks as they develop through the cycle. The bank monitors these risks and compares them to its through-the-cycle risk appetite so that it can formulate a preemptive strategy to address the rising risk in the portfolio.

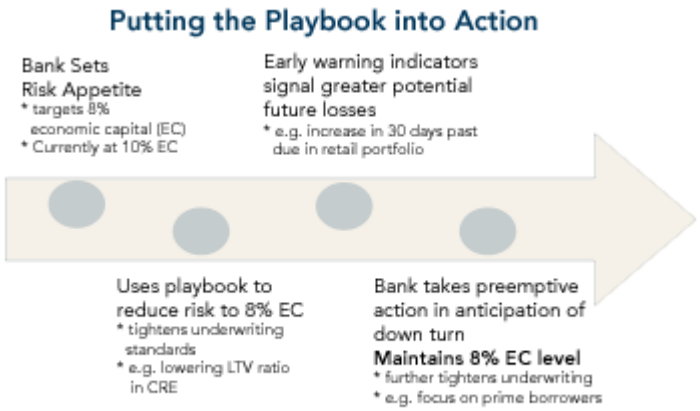
At SunGard, we think this is most likely to turn into effective tail risk management if the bank allocates its

enterprise risk appetite down to business lines in the form of economic capital limits. The latest economic capital models first help the bank estimate the capital it requires to maintain a particular solvency standard—given the risks it is running— and then attribute a portion of this capital back to each business line. Attributing economic capital to a business unit is most often used to risk-adjust performance measures, but it also offers a way to impose limits on the level of risk assumed by a business— limits that are more economically rational than those based simply on transaction volume, segment or individual borrower characteristics such as credit ratings.

We also think it is much more likely that tail risks will be managed if banks build in advance a *pre-agreed and tested* set of tactics and strategies for laying off tail risk—a management 'playbook'—that can be set into action as soon as limits based on the bank's risk appetite look under strain.

From observation to action

The Figure below tells the story of a bank that sets its risk appetite using economic capital-based limits. During the initial risk-appetite setting process, the bank finds that it is running risks equivalent to 10% economic capital (as a percent of exposure) while its board of directors seems happier with a long-term risk appetite of 8%.



The bank uses its economic capital model to analyze the optimal way to reduce risk, in this case tightening underwriting standards—for example, lowering the LTV limit in its commercial real estate portfolio from 75% to 65%, raising the debt servicing coverage ratio (DSCR) from 1.25 to 1.3, and participating out all large commercial loans (say, with values over $10 million). By putting these strategies into action, the bank is able to reduce its economic capital to 8%, the level that its board has targeted.

A little later, an increase in loans that are 30 days past due in the bank's used auto lending portfolio, foretells a possible surge in expected losses and tail risk—giving the bank about two months lead time to take further pre-emptive action. This time the bank further tightens underwriting to focus new lending on prime borrowers in its auto lending business, making sure that the business line can stick to its risk appetite in the event of a steep economic downturn.

Furthermore, quantifying the impact of the rising 30-day delinquencies in terms of economic capital, the common currency of risk, will also help this bank consider the full range of its risk management arsenal for stabilizing the bank if the deterioration continues — everything from purchasing credit enhancements to positioning the bank for a possible fall in interest rates (e.g., by hedging its exposure with derivatives).

As this example suggests, the bank's playbook for sticking to its risk appetite should include strategies for reweighting its mix of business lines. Banks aiming at a risk appetite consistent with 8% enterprise economic capital don't have to aim for 8% capital in each of their business lines: the bank might rationally build a business of 3% economic capital in Business A, 8% in Business B, and 10% in a relatively risky, cyclical

Business C. This variation might be because each business has a different reward/risk profile or because a particular business is immature but strategically important (i.e., its current low risk/reward profile can be forgiven because it is a loss leader).

The diversity of risk profile can be turned into an advantage because it gives the bank the option of using the rates of growth/divestment of Businesses A and C as levers for keeping its tail risks in line with its enterprise risk appetite over time.

The outside world

Not all cyclical risks are easy to monitor in terms of telltale credit deteriorations within the bank's portfolio—the bank must also look outward to the state of the economy and banking sector.

Here the aim is to explore, in advance, the relationship between fundamental observable factors and the bank's tail risk exposures— and then monitor a selected set of key early warning indicators that will help the bank to tailor its risk taking to its risk appetite.

The obvious example is macroeconomic modeling of bank risk in relation to economic variables such as inflation, stockmarket prices, or unemployment rates. This approach uses regression analysis to model how historical charge-offs are related to macroeconomic variables. Once the analysis has revealed the most influential set and weighting of macroeconomic variables, a macroeconomic model can be built to help predict future charge-off rates, and thus the direction in which the economy is headed.**[i]** (The sensitivity of some macroeconomic models means that their results are best interpreted in terms of trends and in the context of a wider qualitative assessment.)

Banks can also build fundamental models of commercial real estate lending, e.g., examining how occupancy, rental and capitalization rates and other key fundamental factors drive future rates of default and loss in property-linked lending. Using tailor-made indices of these fundamental factors, the bank can then track each index through the developing economic cycle and use the results to forecast losses and economic capital based on current index values. It can also use the current index values to generate up-to-date analyses of plausible worst-case scenarios. **[ii]**

It's impossible for banks to predict the timing of the next banking system crisis. But banks can monitor systemic risk indicators including falling credit premiums, declining sector underwriting standards, and the extent to which rapidly rising asset prices are fueled by lending practices. The bank can then use this information to shape the stress tests that augment its periodic economic capital calculations, e.g., to calibrate the extremity of plausible worst-case scenarios and cross-risk interactions.

The central idea here is to build the best possible view of where the portfolio is heading so that the bank is always acting proactively—in other words, before it is too late—to maintain its risk appetite.

Conclusion: So Can Risk Appetites Ever Change?

Enterprise-level risk appetites should not vary with cyclical booms and busts, but this does not mean that risk appetites can never change.

Just as the bank can make a conscious decision to seek a different credit rating from a rating agency, it can also make a strategic decision to change its risk profile and assume more or less tail risk. Banks that try to grow aggressively almost inevitably take on more tail risk.

However, this move to a different risk appetite should always be made deliberately, ideally at a benign point in the economic cycle, and should be well advertised to the bank's stakeholders and its staff - taking us back to the reasons why setting out a constant risk appetite is useful in the first place!

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[i] For example, ‘Taking Account of the Economic Cycle in ALLL’, Shahram Elghanayan, *RMAJ*, February 2006, pp. 32-36

[ii] Discussed further in, ‘Getting That CREeping Feeling?’, *SunGard Ambit Risk Report*, Fall 2009, vol. viii, no. 4

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