



## The Role of the Independent Reviewer in Ensuring the Adequacy of Risk Management Procedures

By Matthew Presto, CPA, AMLP, S.R. Snodgrass, A.C.

Financial institutions are required to measure, monitor, and report risk in order to ensure their financial soundness. The risk management process has many related parts; overseeing all of them is a system of internal controls that ensures the other elements are working effectively.

Part of the internal control system is an independent review of the logical and conceptual soundness of the risk management process. The independent review—or audit—is typically performed by internal audit staff or by an external consulting firm. In either case, the reviewers must be independent of those who establish the risk procedures.

What is the role of the independent reviewer? From start to finish, the auditor must make sure that the risk management process is working as it should.

### 1. *Ensure Proper Oversight by the Board and Senior Management*

The lead in ensuring the effectiveness of any risk management procedures should come from the Board of Directors and senior management. It is the responsibility of the auditor to ensure there is effective Board oversight.

The main duty of the Board with regard to this process is to approve an Asset Liability Management (ALM) policies and procedures document. This document should include the following items:

- Purpose of policy. The ALM should specify the Board of Directors' objectives, goals, and tolerances with regard to Interest Rate Risk.
- Authority, specifying the responsibilities of the Board of Directors with regard to risk controls.
- Appointment of an Asset Liability Committee (ALCO), the frequency of its meetings.
- Duties and responsibilities of the ALCO.
- Risks to be measured and variability limits.
- Risk reporting—specifying periodic (quarterly) reports to Board of Directors showing risk exposure relative to policy limits and indicating violations.
- Violations of risk limits. Detail what the Board of Directors expects from management when risk exposures exceed risk limits.
- Independent review. Ensure compliance with ALM policy by testing the policy against the specifications of the document.

The Board of Directors assigns responsibilities to the management team for implementing the policies. The Board of Directors should review and, if necessary, update policies and procedures on an annual basis. The Board of Directors should monitor the financial institution performance and risk profile on a regular basis—typically quarterly—through review of Interest Rate Risk (IRR) reports. The IRR reports should be reviewed to see whether risk exposure exceeds Board of Directors-approved limits.

### 2. *Monitor Risk Management Policies and Limits*

The audit should ensure that an ALCO is established, which may consist of senior management and may include outside directors. ALCO should meet at least on a quarterly basis, and its meetings should be well documented.

The audit should ensure there are documented risk management policies and limits. The policies should include procedures that define clear lines of authority for implementing the risk management process and appropriate numerical risk limits. For example, the policy might limit the institution's exposure to no more than a 20 percent decline in Economic Value of Equity (EVE) if rates move up or down by 200 basis points. At a minimum, limits should be set on changes in Net Interest Income (NII) and on EVE.

The reviewer should ascertain that the limits are appropriately set for each basis point scenario and that they are effective as a management tool.

### 3. *Ensure Ability to Measure, Monitor, and Report Risk*

The audit should ensure the financial institution is able to measure, monitor, and report risk exposures on a regular basis. Management is responsible for implementing a risk measurement system that is strong enough to measure all of the financial institution's risks and accurately assess how the income and EVE respond to changes in interest rates. This means the financial institution needs to generate more than GAP basis reports.

Income simulation and EVE models are generally required for all but the smallest and simplest institutions. Software (i.e., Sendero, ProfitStars) can produce these results. The modeling can be done on site by the financial institution or contracted out to a third party. Whichever method the financial institution chooses, the independent auditor needs to ensure the risk measurement models are working properly and tested periodically.

There are two types of checks that can be performed by the auditor: backtesting and model validation.

Backtesting compares predicted results from an earlier period with actual outcomes in the current period. With model validation, the auditor checks the inputs, assumptions, model operations, and results to ensure they are appropriate and correct.

Backtesting can be done for both income simulation and EVE. The auditor needs to determine the appropriate model prediction. The prediction should use the rate change that actually occurred over the test period. Of course, other factors, such as account balances, may also change; the prediction must be adjusted for those changes.

A backtest consists of four steps:

- Determine the appropriate rate change. This could be an average change or rate changes in the balance sheet. For example, the test may use the one-year rate change for time deposits and ten-year for the mortgage portfolio.
- Estimate "expected" income projection or EVE for each balance sheet account. This can be done by adjusting the earlier-period projections against the actual change in interest rates. For example, if the actual rate change was +75 basis points, the expected values could be established by interpolating for the +50 and +100 basis point scenarios.
- Adjust for changes in other factors. For income simulation models, differences in expected values and actual values should be attributed to or divided into differences due to changes in



account balances and changes in rates or yields. In EVE tests, the differences should be attributed to changes in account balances and in economic value to book value ratios.

- Evaluate the accuracy of the risk model. Accuracy is evaluated based on the size of the differences due to changes in rates paid or yields. Differences should be small if the model is working correctly.

Model validations involve a more complex analysis than a backtest. The auditor--not the party that runs the model--should perform the validation. A validation reviews the assumptions underlying the modeling process, including:

- The information input component
- Processing component
- Output and reports

There are a number of data sources that can be used in the modeling. The data source (i.e., general ledger, call report, loan and deposit files, advances, etc.) and method of input (i.e., manual input or automatic download) should be taken into account. The auditor should evaluate the download of the data and verify the data input. This can be done by reconciling general ledger and call report data to the model reports, reviewing payment amounts, balances, caps and floors, index spreads, and all other relevant areas. The auditor should verify the adequacy of the assumptions. This includes pricing correlations, prepayment assumptions, asset growth, interest rate forecast.

The processing component validation ensures the model's calculators, or processing components, are working properly. This may involve a backtest or a parallel model, where the institution's financial data are run through a second risk model and the results are compared. Significant differences in results indicate a problem with the model's calculators.

The auditors review outputs and reports to ensure that results are accurate and consistent. Model results are compared with results from the prior period to ensure that changes in the results are reasonable.

Every financial institution should have a model validation policy. An effective policy requires the validation be independent from the department running the model. It defines which area of the institution has responsibility for having the validation performed and ensures validations are performed periodically. The Office of the Comptroller of the Currency Bulletin 2000-16 should be used as a guide.

At a minimum, the policy should:

- Define responsibility for creating and implementing the model. This step should be formalized. It should verify that the independent model validated documented tests in order to conclude that the model is valid.
- Provide summary overviews of the general procedures used and reasons for choosing those procedures. Describe the model applications and limitations, identify key personnel and milestone dates, and describe the validation procedures and results.
- Respond to changes in the IRR environment or to corporate improvements. Ensure all of the changes in the modeling process are formally documented and submitted for an independent review prior to changes.
- Ensure personnel performing model validation are independent from the personnel who construct the model.

In summary, an effective system of independent controls and reviews is an integral part of the risk management system.

*About the author:*

*Matthew Presto is a Principal in the Internal Audit and Regulatory Compliance department at S.R. Snodgrass, A.C., an expert auditing and financial consulting firm with offices in the Pittsburgh and Philadelphia areas. The certified professionals at Snodgrass provide a diverse menu of financial services primarily structured along five distinct business lines: Auditing; Business Consulting; Outsourcing and Co-Sourcing Internal Audit and Regulatory Compliance; Tax Preparation/Planning; and Technology Services.*

