
Liabilities
Assets

Regulatory Capital, Models, and Holistic Balance Sheet Management

By taking a holistic approach to balance sheet management, you can see beyond the hype of current rules and model-based approaches. This article details the principles of such an approach as well as the steps you can take to effectively manage complex balance sheet risks.

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BANKING AND FINANCE practitioners realize that risk, particularly its management, is a difficult topic. By its very nature, risk describes that which is unknown but has the potential to occur. And risk management is about trying to understand, explore, and mitigate unknown but potential exposures.

Perhaps as a response to risk's unfathomable qualities, modern risk management portrays itself as a scientific exercise in prediction and forecasting. But it is not always so. Although specialized and complex models can be valuable tools for converting a disconnected mass of data into actionable information, they are simply one part of a wider process of risk management that is as much art as science.

Recent market upheavals have emphasized once again that models—their implementation, specification, calibration, and parameterization—are mere approximations, not "realities." Moreover, gratuitous complexity can result in "black box" risk, in which the lack of model transparency becomes a risk factor.

Today's crisis environment also emphasizes how risk modeling and risk management tend to focus on one type of risk at a time when reality is much more complex. Although some risk models try to account for all risk types (credit, market, price, interest rate, liquidity, operational, etc.), the practical reality is that many risks, especially complex, interconnected risks, border on the unknowable in a data- and model-driven context.

Thankfully, we aren't limited to data and models, but are able to use imagination and good judgment to think through business models and risk connections in a more holistic way. This article has three simple aims:

1. To highlight why a holistic approach to balance sheet management is necessary.
2. To describe how current rules and model-based approaches fall short—and why they always will.
3. To propose several pragmatic steps to see beyond the hype and into the harsh reality of what it takes to effectively manage complex balance sheet risks.

What Is "Holistic" Balance Sheet Management?

At the risk of introducing new slang into the risk management lexicon, it is important to differentiate "enterprise risk management" (ERM) from "holistic" balance sheet management. Some would have you believe that ERM is a model- or vendor-based platform solution. Rather, ERM is a governance function that starts with the board of directors, not models or

packaged software. There is no "easy button" for effective enterprise risk management. Nevertheless, sound ERM for a bank or other financial institution does include a holistic approach to balance sheet risk assessment.

Such an approach recognizes, first, that all risk is "derived." That is, risk is a derivative impact originating from some "source." In the case of a balance sheet, risk is derived from cash flows, contingent and otherwise, and how those cash flows react to changing and evolving market factors. Serious—potentially catastrophic—risk is generally not transactional; it is the result of risk pools and concentrations with linkages across the balance sheet that are often obscure at best. For example:

- *Credit risk and operational risk*: Was a loss the result of credit risk or the result of an operational lapse that failed to perfect the bank's security interest?
- *Reputational risk and funding liquidity risk*: Will a regulatory fine cause a funding problem for the bank?
- *Interest rate and default risk*: Will rising reset rates on indexed ARMs cause a dangerous jump in payment defaults?

Many risk linkages are far more subtle and complex than the above examples. Given that most models are targeted toward specific risk types—credit, interest rate, price, liquidity, structure, correlation, volatility—it becomes clear that integrating across these risks requires more than models; it requires improved governance, processes, principles, and, perhaps above all, imagination. Holistic balance sheet management accepts this mandate.

Such active balance sheet risk management means taking a unified view across all risk types at the consolidated, or enterprise, level. This reaches beyond Basel II, wherein risk quantification is limited to credit, operational, and market risk and in which even standard asset/liability management for the banking book is relegated to Pillar 2. It is also an approach based more on principles and expert judgment than on simple fixed-parameter models, such as the asymptotic single-factor credit risk model embedded in Pillar 1 of Basel II.

To effect good balance sheet management, one group must be given a mandate—backed by senior management support—for active identification, measurement, assessment, and management of balance sheet risks. Perhaps ironically, this risk management activity may not be performed by the bank's risk management function. Why? Too many "risk management" groups are considered cost centers, just "compliance" functions erected to appease regulators, stockholders, and rating agencies. Such risk groups document what business units do, but they don't actually manage risk. Their ability to influence the business is severely limited. One risk practitioner described his role as a "glorified scribe." In the words of former Citibank Chief Executive John S. Reed:

> "Everyone in banking points to risk management as a top priority, but that is often just lip service. Risk analysis can easily become a series of routine chores that offer little protection from the unexpected."[1]

The existence of such groups is not necessarily a bad thing. In highly regulated and privileged industries such as banking, where a public trust is at stake, there is a legitimate role for an independent group that monitors risk-taking business activity. Calling such activity risk "management," however, is misleading; risk "policing" would be a better term. There must be another group that isn't merely a cost center or a strictly compliance function.

This group is the balance sheet management function, and it should be expected to add—as well as protect—value. The job of such a group goes several steps beyond today's traditionally staid ALM and Treasury practices. It undertakes active management of holistic balance sheet exposures across risk types. The aim of this division is to maximize earnings potential of the balance sheet while being highly cognizant of where, why, and how risk is stored—including contingent and off-balance-sheet exposures.

Moving in this direction often involves coupling economic capital, portfolio credit, and ALM groups, or, minimally, creating collaboration forums across these groups to produce a more holistic perspective on the balance sheet. More often than not, such combining or collaborating rapidly leads to better risk-based pricing, capital management, concentration monitoring, and limits and discretionary activity to hedge, transform, or reduce oversized exposures. Holistic balance sheet management—when done right—is exploratory and relies as much on good judgment, expertise, and wisdom as on models and portfolio risk methodologies. Some might ask, "But isn't this precisely what Basel II is aiming to accomplish?"

How Current Rules and Model-Based Approaches Fall Short

Basel II is an excellent, rules-based document. Much of the philosophy behind Basel II can be traced to value-at-risk models used for trading-book risk assessment that evolved in the early to mid-1990s. The credit portfolio model used in Pillar 1 of Basel II is a default-mode model with fixed, albeit conservative, parameters.[2] But conservative in exactly what sense? It's conservative on the basis of its measurement goal—credit risk—and the parameters resulting from calibration for expected and

unexpected losses systemically.

Although a huge advance from Basel I, the core credit model of Basel II is already showing its age. Better portfolio-modeling technology is already available. This highlights one of the regulatory burdens of Basel II. By being too rigid in model specification within the rules, capital assessment for Pillar 1 is now seen as mainly a compliance exercise, an outcome at severe odds with the inspired wisdom of Basel II's original intent to create better risk management and improved transparency. One must wonder: If the dollars spent on "compliance with rules" had been spent on "adherence to principles," might some of the losses from the recent subprime crisis been avoided? Without any claim to being exhaustive, some of those principles might include the ideas listed in Table 1.

Although Principle 3 from Table 1 is contained in Pillar 2 of Basel II, industry focus has been concentrated on the "rules" of Pillar 1 and the need to meet the demands of Pillar 1 at all costs due to the unfortunate timelines written into law. Perhaps the timeline, or rollout, should have started with Pillar 2 economic capital principles, not Pillar 1. Perhaps the better risk principles and more integrated risk management that adds business value are more important than minimum regulatory capital rules, as unpopular as that statement may be. Perhaps such principles apply to the entire industry, not just "blue chip" (otherwise known as "core" or "opt-in") banks. Maybe "get it done" isn't as valuable to safety and soundness of an entire industry as "get it done right."

Recent announcements from rating agencies[3] and their approach to capital assessment seem more aligned with where we should be aiming and are consistent with the spirit of Basel II. Both pragmatic and grounded in basic principles, these new approaches reward strong risk management with potential for lower capital, earned via expert judgment rather than technical compliance with prescriptive regulatory capital rules.

Compounding the above problems is the more technical fact that much of the regulatory capital assessment framework is data driven and limited in risk scope. Of course, it is axiomatic that data is necessary for any acceptable risk-modeling framework. Nevertheless, exclusively data-driven regimes will be found wanting in many circumstances as a result of:

- Product innovations.
- Lack of sufficient historical time-series.
- Fundamental market changes, such as regime shifts, new markets being connected, changes in tax law, and so forth.

Model-driven risk assessment also suffers from the limited range of risk coverage offered by most models. Most such models are designed to assess one or, at most, a few risk types. Yet it is the complex interconnection of risks that often does the most damage—especially under stress conditions.

Table 1

Principle 1:	Maintain an integrated stress-testing framework.
Principle 2:	Impose escalating capital penalties for excessive risk concentrations.
Principle 3:	Deploy an internal capital assessment and allocation process. • Instrument level = advanced. • Product and business-unit level = standard.
Principle 4:	Ensure feedback into business decisions from return on risk capital. • Tied to incentive-based pay = advanced. • Used in relationship pricing models = standard.
Principle 5:	Implement a holistic balance sheet management process.
Principle 6:	Ensure a strong governance structure for risk monitoring and control.
Principle 7:	Ensure coverage of and integration across risk types, including liquidity, reputational, business, legal, and regulatory.

While we have criticized models and rules-based policy, it is critical to recognize that models in general—and Basel II in particular—have been important drivers of improved risk management. The industry's understanding of risk has improved significantly. The necessary data gathering and consolidation required to satisfy Pillar 1 of Basel II has produced a much-improved foundation to support holistic balance sheet management. For this alone, perhaps, Basel II has already been a success. Going forward, Pillar 2 and Pillar 3 must gain significance relative to Pillar 1. In the meantime, what practical steps will strengthen the effectiveness of risk management?

Pragmatic Steps Forward, Without Hype

While achieving a more holistic approach to balance sheet management may seem difficult, its benefits are enormous. Can this be done? We think so. Here's how.

1. *Start with risk-based relationship pricing.* Most banks continue to price transactions, not relationships. Moreover, they consider the price from across the street (the competitor's), not the risk-based return from the customer and how the relationship increases or decreases the firm's specific marginal risk-based return. The rule of thumb is that one default requires six to 10 new loans of the same amount to recover through earnings. By better pricing risk, banks can better control risk.
2. *Embrace portfolio credit analytics and economic capital.* Risk is inherently a portfolio concept. The risk of any given position is only meaningful in its portfolio

context. An additional exposure that aggravates an existing over-concentration will be riskier than one that improves diversification. Banks are naturally prone to developing credit concentrations based on characteristics of their home markets. Fortunately, the many innovations in credit risk over the past 15 years provide effective tools for overcoming such concentrations. Active credit portfolio management need no longer be the preserve of massive global banks. In many ways, it can be a more powerful risk management tool for smaller regional banks where the pattern of loan origination tends to provide less natural diversification than is true for larger institutions.

3. *Empower and improve internal "active" risk governance and collaboration.* In the simpler and less dynamic world of banking 25 or 30 years ago, fragmenting various functions such as credit risk management, asset/liability management, and market risk management could work effectively. Today, all forms of risk are becoming increasingly interconnected. Indeed, it is often the less-than-obvious interconnections and feedback loops that can produce the biggest problems. In this environment, a more holistic approach—and the associated cultural change required by the organization—is essential.
4. *Take responsibility and don't believe in miracles.* Achieving the necessary cultural change will inevitably take time. Organizations become set in their ways, and staff often find change difficult; people particularly resist change imposed on them for reasons they don't understand. To facilitate a smooth evolution, senior management must take the lead in explaining the need for change and conveying a compelling vision of what is required to meet the risk management challenges of the 21st century. When employees understand the problem, they are far likelier to buy into the solution.
5. *Don't expect instant gratification and don't underestimate the obstacles.* Holistic balance sheet management requires a significant restructuring of authority and responsibility. This restructuring must be thought through carefully and communicated explicitly if a more holistic approach is to be successful. It also will take time for the new relationship to become the accepted norm.

Perhaps most importantly, senior managers must internalize the essential trade-off between risk and return in their own thinking. Many market participants knew intuitively that trends in the subprime mortgage markets were unsustainable in the long term. Nevertheless, backing away from the market too soon could have looked foolish if the crisis had taken another two years to materialize. Alan Greenspan famously coined the term "irrational exuberance" in late 1996. The dot-com equity boom continued for over four more years before imploding in 2001. Any money manager shunning Internet stocks beginning in 1997 would have had a difficult four years before being vindicated.

The key point is that business units have little choice but to continue in a risky arena if that appears the only way to make their numbers for the year. Risk management personnel—even if they have the authority—are risking their jobs by closing down an apparently profitable activity prematurely. Only senior management can realistically make the call to exit such a market despite the necessary implication of lower earnings. Having the analytical tools to assess the danger and the courage to pull back from a risky area despite continued market euphoria is an essential element in building long-term value, and it is a responsibility that only senior management can assume. Senior management must serve as more than heads of the line units of a bank; they must be de facto leaders of a holistic risk management function as well.

Conclusion

Increasingly, the most serious dangers facing a bank lie in the potential interactions among risks that have traditionally been viewed as separate and distinct. Organizational structures are usually designed accordingly, and this fragmentation can hamper the ability to deal with these vital interactions. Consolidated data and effective analytical tools can support a more holistic approach, but they are not the whole answer. At its best, technology provides effective support for experience and seasoned judgment. It can never supply a substitute for these vital requirements of good management. Only when senior management shoulders responsibility for balancing risk and return will the increasingly interconnected types of risk facing modern banks be as effectively managed as is humanly possible. ❖

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Notes

1. *Wall Street Journal*, "Veteran Weighs in on Tackling Bad Loans," November 14, 2007, p. A2.

2. See, Finger, Christopher, "The One-Factor CreditMetrics Model in the New Basel Capital Accord," *RiskMetrics Journal*, Spring 2001, p. 9.

3. See, for example, Standard and Poor's ERM framework and the company's focus on policies, infrastructure, and methodologies (PIM). Weak ERM infrastructure can lower a credit rating while an excellent ERM can increase that rating—with a direct impact on capital requirements and funding rates.