REFORM IN THE FINANCIAL SERVICES INDUSTRY:
Strengthening Practices for a More Stable System

The Report of the IIF Steering Committee on Implementation (SCI)

Institute of International Finance
December 2009
The global financial crisis of the last two years revealed various weaknesses in the practices of much of the financial services industry. These included inadequate risk and liquidity management, misaligned compensation policies, limited disclosure, and lax underwriting standards. In order to address these and other shortcomings and launch a concentrated effort at correcting them, the Institute of International Finance (IIF) developed and agreed upon a set of broad Principles of Conduct and specific Recommendations which were published in the *Final Report of the IIF Committee on Market Best Practices (CMBP Report)* issued in July 2008. In October 2008, the IIF Board of Directors established a new Steering Committee on Implementation (SCI) with the task of monitoring and promoting implementation, and possibly augmenting these Principles of Conduct and Recommendations for Best Practices.

Over the past year, the SCI has overseen several coordinated efforts to achieve six broad objectives. These are to:

1. Encourage adoption of the *CMBP Report’s* Principles and Recommendations among IIF member financial institutions;
2. Identify gaps or barriers faced by members in the implementation process;
3. Assess progress on implementation of the *CMBP Report’s* Recommendations;
4. Develop new or clarified Recommendations, where appropriate, to help members obtain a deeper understanding of certain Recommendations, and to capture new lessons learned;
5. Provide input to the official sector’s efforts to develop effective regulation designed to underpin a more stable global financial system; and
6. Through these endeavors, to contribute to greater stability and to the rebuilding of confidence and restoration of credibility in the operations of global financial institutions.

The Board of Directors of the IIF and members of the SCI are pleased to present this Report to the international financial community. The work of the SCI, as reflected in this Report, underlines the industry’s commitment to address critical weaknesses of past practices and to contribute to the ongoing process of improvement. We believe it also provides useful input to policymakers and regulators, as they work to raise the standards of business practices through the development of a more robust and effective regulatory framework.

While this Report and its appendices contain a large amount of detailed information and suggestions for both firms and supervisors to consider further in promoting the process of reform and improvement, its basic messages are simple:
• The industry recognizes the shortfalls in past practices and is demonstrably making progress toward strengthening these. The improvements will contribute to greater resilience at both the firm and the systemic levels.

• Across the board, firms have embraced the IIF’s Principles, and have initiated significant reform. Areas such as risk management, governance, and underwriting standards are being overhauled in some cases and reinforced in others.

• Even though improvements are proceeding in earnest, sustained commitment and institutionalization of reforms will be in many cases required to bring important changes to fruition.

• Compensation reform remains a difficult issue but it is being tackled responsibly by many firms in line with the guidance issued by the Financial Stability Board (FSB) and the requirements of national regulators. Much is being done to defer incentive compensation and to align it with long-term shareholder interests.

• Strengthening risk management is of the essence. Basic improvements are being put into place in key areas such as stress testing, enhancing the role of the Chief Risk Officer (CRO), and strengthening the oversight of the Board of Directors. The sections on risk appetite, risk culture, models, and cyclicity in this Report will help firms advance their own ability to manage risk and thereby contribute to systemic stability.

• Overall, the industry is committed to continuing to play its part in building a strong and more resilient financial system.

Despite the significant progress that has been made, the reform program is far from complete. The effort has to be sustained as the industry recovers, good plans have to be carried to fruition, and reforms need to be institutionalized.

The Institute is grateful for the remarkable commitment of member firms’ time and resources in the development of this Report. In particular, we would like to thank Oliver Wyman and Ernst & Young for their contributions to the work of the Committee. A list of Committee and Working Group members follows. We look forward to continuing to work with the Committee, the IIF membership, and the official community as we move forward in our common effort to restore stability to the global financial system.

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INTRODUCTION

Over the past 18 months, the financial services industry has made significant progress in addressing the weaknesses that contributed to and became apparent in the financial crisis. Substantial reforms have been pursued by many firms, notably in the areas of risk management and governance. These developments are highlighted and discussed in this report, entitled Reform in the Financial Services Industry: Strengthening Practices for a More Stable System—The Report of the IIF Steering Committee on Implementation (SCI).

- Financial services firms are strengthening internal processes and practices through the implementation of guidance provided by both the industry and new regulatory requirements.
- One key resource in this undertaking has been the IIF’s July 2008 Final Report of the IIF Committee on Market Best Practices (CMBP Report), which provided guiding Principles and practical Recommendations to address weaknesses in market practices.
- The CMBP Report has contributed to broad industry reform, and has also been used by global regulators in their efforts to make supervisory practices more effective.

The IIF has encouraged its members to assign top priority to the implementation of the CMBP Recommendations. To guide and review these efforts, the IIF’s Board of Directors established in December 2008 the Steering Committee on Implementation (SCI). During the course of 2009, the SCI has undertaken several initiatives, including the commissioning of the Ernst & Young Survey of the Implementation of the IIF’s Best Practice Recommendations (Ernst & Young Survey) that documents the industry’s progress and commitment to change, and the launch of a well-received survey of banks’ compensation practices, commissioned by Oliver Wyman in March 2009.

KEY FINDINGS OF THE SCI REPORT

The SCI has found that:

- Financial institutions have invested considerable resources in necessary improvements, and significant changes are under way.
- Strengthening risk management is a top priority, and risk functions are being reconfigured and upgraded to give firms a more integrated approach to risk management. Specific areas of improvement include governance and transparency, stress testing, liquidity risk management, risk measurement, and risk-aligned compensation.
- Institutional culture is changing, with a perceptible shift in orientation from “sales-driven” to more “risk-focused.”
- Firms are also formalizing their valuation reporting frameworks, with increased involvement of senior management—
including the CFO and CRO functions—in the valuation and reporting processes.

- Reforms are being embedded in firms whose managements increasingly recognize that 
  reform needs to be a continuous process, aligned to changing market and regulatory developments.

Notwithstanding the improvements seen to date, the SCI has noted that the industry still has much to do. Introducing the requisite technology change and building more skilled and independent risk departments require time and investment. Significant developments in information technology (IT) systems, especially for management information systems (MIS), cannot be rushed without creating new hazards. Therefore, although speed is important, it is essential to build systems sufficiently robust to ensure that changes made are real and enduring.

The CMBP Report made Recommendations in six areas, all of which were important in giving direction to firms and establishing benchmarks (Capitalized Recommendations and Principles refer to those in the CMBP Report). These were:

1. Risk Management;
2. Liquidity Risk Management;
3. Valuation Issues;
4. Compensation Policies;
5. Credit Underwriting, Ratings, and Investor Due Diligence in Securitization Markets; and

This Report analyzes and provides insights on reforms undertaken in these areas by individual firms and by industry organizations, and identifies challenges that remain. It provides a comprehensive review of how far the industry has come in the past two years in addressing weaknesses that contributed to the global financial crisis. In conjunction with the July 2009 IIF Report Restoring Confidence, Creating Resilience: An Industry Perspective on the Future of International Financial Regulation and the Search for Stability (Restoring Confidence Report), this Report also offers private-sector views on recent regulatory developments.

**RISK MANAGEMENT**

*IIF member firms have made demonstrable progress; stronger risk management is a priority.*

The assessment of progress in strengthening internal practices is based on inputs from a number of IIF committees and working groups, the deliberations of the SCI, and the findings of the Ernst & Young Survey of select IIF member firms. The Ernst & Young Survey, presented in Appendix I, is based on extensive interviews: these include discussions with chief executives, chief financial officers, and chief risk officers at 38 member firms, with additional information from another 10 firms. The findings complement other evidence gathered by the SCI and discussions with IIF member firms. One unequivocal conclusion of the findings is that there is a widespread commitment to substantial and sustainable improvement by the industry.

Firms began strengthening internal risk management practices as crisis events unfolded in the summer of July 2007. The Committee’s work shows that, while the financial crisis has affected banks in different ways, the desire to improve risk management is universal. Specific improvements in this area include:

1. **Risk culture:** In addition to making the other changes discussed in this Report, such as modifying risk governance and increasing the role of the CRO and the risk function, firms are making a concerted effort to transition from a “sales-driven” culture to one more focused on risk, by:
a. Making specific changes in job content and descriptions (including the functions and responsibilities of Board members);
b. Changing policies and procedures to introduce additional risk criteria for the evaluation of credit and trading decisions;
c. Revising and realigning compensation policies to incorporate risk criteria and reinforce development of a more risk-focused culture; and
d. Emphasizing the role of risk as the common thread running through decision making in firms at all levels.

2. Risk Governance: Governance changes are designed to:
a. Increase Board oversight of risk, including through changes in the composition of Boards, with a significant increase in the number of members with relevant experience in financial and risk management issues;
b. Significantly increase the amount of time allocated during Board sessions to the discussions of risk management issues;
c. Establish specialized Risk Committees of the Board in many firms that previously did not have them, or focus on formal risk issues where Audit or other committees provide risk oversight;
d. Foster changes in reporting—in particular, Boards have started to demand focused reports on risk issues to be presented and discussed on a regular basis; and
e. Encourage more direct involvement by Boards in the definition and clear articulation of firms’ risk appetites and engagement in stress-testing exercises.

3. Role of Chief Risk Officer: Risk functions now have greater influence on firm operations and business decisions. This is being achieved through:
a. Elevation of the CRO role by several means, including direct reporting lines to the CEO, establishment of reporting lines to the Board Risk Committee (or equivalent), and mandatory participation of CROs in all key management committees;
b. The development of incentive and remuneration policies for CROs explicitly intended to signal within the firm that risk is an important element in the conduct of business;
c. Assignment to the CRO of the responsibility to maintain consistency between the risk profile of the firm and risk appetite as defined by the Board; and
d. Expansion of the CRO function to consist of advice, control, management, and technical oversight functions, including analysis of new product development and liquidity risk.

4. Risk Management Methodologies and Procedures: Deficiencies in risk methodologies and reporting are being addressed through:
a. Improving risk models;
b. Collecting more and better data;
c. Reducing reliance on external ratings;
d. Expanding coverage of off-balance-sheet risks;
e. Reassessing the life cycle of risk information to improve underlying data quality;
f. Focusing more on procyclical effects; and
g. Streamlining risk reports to management and Boards to make information clearer.

5. Stress Testing: Improvements are being made in the area of stress testing by:
a. Making use of varied testing programs and more diverse scenarios;
b. Making the process of scenario definition tangible;
c. Improving stress-testing capabilities for credit and liquidity risk; and
d. Improving control and validation mechanisms.

The effects of these changes will be far-reaching in the medium to long run, but challenges remain.

For example, there has been tangible and welcome progress in embedding risk into decision-making processes in a consistent way across business units, even though the approach to this varies across firms. Many firms, however, continue to find the identification and articulation of risk appetite and its translation into meaningful risk management parameters challenging. This is an area in which further industry guidance or the sharing of good practice would be of particular value.

Importantly, firms are recognizing that stress testing is an area that will require continuous improvement and, as such, will always remain a work in progress. A particular issue that requires additional work is overcoming limitations on the ability of many firms to aggregate data, particularly across legacy systems. Moreover, the implementation burden—often involving complex technical changes—inevitably falls on a small group of risk management experts in most organizations, which can affect the pace of progress.

It is clear that not all firms started from the same level and that not all are progressing or have the resources to progress at the same pace. Nevertheless, additional progress can be foreseen in the next year or so, provided firms maintain the momentum behind what is necessarily a continuous process of review and improvement.

Additional industry guidance is being developed to assist firms in improving risk management.

On the basis of member feedback requesting more guidance on risk management issues, the SCI established a Working Group on Risk Management (WGRM)\(^1\) to review the Recommendations in the *CMBP Report* and develop further guidance on certain risk management issues.

The WGRM found the CMBP Recommendations to be largely valid. In addition, the WGRM decided to provide additional analysis on four topics to facilitate implementation of the Recommendations, namely:

1) Risk appetite;
2) Risk culture;
3) Risk models and statistical measures of risk; and
4) Risk management across economic cycles.

The SCI has developed extensive reports on each of these issues. These reports build on the Principles and Recommendations of the *CMBP Report* and provide more detailed guidance on certain aspects of risk management practice.

The full texts of these reports are attached as Appendices II–V. A summary of new Recommendations can be found in *Appendix VI. New and Revised Recommendations on Risk Management and Compensation*.

Managing risk is challenging: both quantitative and qualitative approaches are essential.

The industry is updating its formal risk management systems and methodologies, including qualitative as well as quantitative aspects of risk management. Work is now progressing on the following universally recognized needs:

- An integrated risk management system;
- Reference to multiple models and metrics;
- The judicious use of informed judgment;
- The clear articulation of risk appetite in ways that are understood from the top down to front-line businesses; and
- Close attention by Boards and managements to risk culture as well as risk policies.

\(^1\) A list of members of the Working Group can be found in Appendix VIII.
In the past, some firms relied too much on specific metrics. Within this broad framework, however, the diversity of circumstances and issues faced by individual firms in managing risks needs to be taken into account. For example, the Basel Committee has published very useful new guidance on risk management, and its guidance is in many ways congruent with the IIF’s Recommendations. However, determination of risk appetite and implementation of sound risk policies and procedures within the Basel Committee guidance and the IIF Recommendations need to remain firm-driven, albeit subject to supervisory review under Pillar 2. There would be a risk in becoming too prescriptive, inducing many firms to adopt the same risk management approach. That would detract from the important competitive benefits resulting from each firm being free to make its own choices regarding risk appetite. More important, it would create significant “model risk.” If all firms were required to use similar approaches and models in managing risk, they could tend increasingly to behave in the same way, reinforcing procyclicality.

LIQUIDITY RISK MANAGEMENT

Rapid progress is being made.

The quality of liquidity risk management has been a major focus of the industry and of regulators in the aftermath of the crisis.

- The industry has responded by introducing broad changes in the approach to liquidity risk management, including IT investments and the integration of liquidity risk considerations into overall risk management.
- Improvements directly address the Recommendations published by the Institute on liquidity risk management before the crisis (March 2007), and naturally build on the congruent liquidity risk management principles published by the Basel Committee in 2008. Of particular importance are governance, appropriate internal pricing for liquidity risk, improved risk assessment, and improved stress testing and contingency planning for liquidity needs.
- While it is important that work currently under way be completed, it is clear that the liquidity lessons of the crisis have been internalized by firms, and that these changes will enable firms to respond much more robustly to liquidity events that may crystallize in the future.

Liquidity risk now helps define business strategy, on the same level as credit and market risks.

- There is a realization by firms of the need to make important changes to the way they treat liquidity in business decisions as well as in risk management processes, where it has been elevated in many cases to the same level as credit and market risk.
- Liquidity issues are being given closer consideration in the overall business strategy, and senior managements have become much more involved in the liquidity risk management process, in accordance with IIF and Basel Recommendations.
- In light of the changed market conditions, firms are reviewing business models to make sure they incorporate the real cost of liquidity.
- Governance around liquidity management is also being improved, with Chief Risk Officers (CROs) playing an increasing role in setting a formal liquidity policy, again responding to a crucial lesson learned from the crisis.

However, time is needed to strengthen liquidity risk management.

- Firms are planning further investments in IT systems to improve risk aggregation and data quality, as they have begun to realize the
value of having better tools to allocate and monitor funding. IT investments require substantial amounts of funding and time to design, integrate into existing systems, test, and implement; they also require specialized IT and risk personnel, who often are in short supply.

- However, there are clear indications that IT support for liquidity management will be much more robust once the present round of IT development is completed.

Open questions about further regulatory requirements on liquidity.

The Institute’s Recommendations and the Basel Principles go very much in the same direction, and while all indications are that firms are making rapid progress on liquidity risk management, there are important open questions about further regulatory requirements.

As many in the public sector have recognized, liquidity regulation has the potential to have at least as great, if not greater, effects on both the soundness of the banking system and on its ability to provide credit and financial services to society, as new regulatory capital requirements.

The industry fully accepts the need to have globally consistent and appropriate liquidity regulation but, as discussed further in this Report, liquidity regulation that is too narrowly conceived might have counterproductive effects. The Institute, continuing its focus on liquidity risk management that it developed before the crisis, intends to contribute to the development of a framework for global liquidity risk regulation that is appropriate, effective, and finds the optimal balance between achieving soundness and facilitating liquid and vibrant markets.

VALUATION ISSUES

Firms have been actively engaged in addressing valuation process deficiencies.

Financial institutions have been making progress to improve their valuation procedures and infrastructure in accordance with the IIF Recommendations, notably to extend their sources of valuation inputs—including better utilization of pricing services and other sources—especially for assets carried at fair value.

- Firms are streamlining valuation systems and technology platforms for financial instruments of similar characteristics, thereby improving the consistency of the valuation process.
- Valuation reporting frameworks are being enhanced and, where necessary, formalized, and independent price verification control is receiving elevated importance, with improved communication of the results of valuation practices to those charged with managing risk.
- Providers of pricing and related market data are developing significant innovations that will contribute to transparency and the quality of pricing for specific products and markets.
- Moreover, there has been a marked increase in the involvement of senior management—including the CFO and CRO functions—in the valuation and reporting process. All of this is consistent with IIF Recommendations.

There is need for convergence of accounting standards for international consistency.

While the leading accounting standard setters have provided useful guidance on valuation issues, it is now crucial that the goal of convergence of standards set by the G-20 be achieved. Recent developments underscore that convergence is essential if regulatory reforms and the implementation of market best practices are to be effective. In particular, convergence on a clearer, simpler, and appropriate global financial reporting framework, especially for
financial instruments, is an essential complement to successful completion of internal risk management governance improvements within firms and to consistent supervision.

To facilitate consistent application of valuation methodologies across firms, markets, and transactions, work is proceeding on reflecting measurement uncertainties and valuation adjustments in the valuation process for instruments carried at fair value. The industry needs further work on incorporating measurement uncertainties into the valuation framework. Clear, transparent, and timely communication regarding valuation procedures is critical to maintaining investor confidence and ensuring proper functioning of the capital markets, and this is developing rapidly. Finally, improvements in market infrastructure, particularly in the area of over-the-counter (OTC) derivatives, will contribute significantly to improvements in valuations by reducing informational asymmetries and lack of transparency in price discovery.

COMPENSATION POLICIES

Compensation policies and practices continue to be a high priority of reform for the industry, in line with regulatory guidance and with the IIF Principles set out in the CMBP Report. The March 2009 IIF/Oliver Wyman Compensation Report survey of financial services firms reported on progress already made in reforming compensation practices.

- The majority of respondents (60%) expected to be fully aligned with all seven IIF Principles once their compensation plans were implemented.
- The Compensation Report found that continued effort is required and identified a set of leading practices on compensation issues that will help to guide industry efforts to increase risk alignment and improve governance and oversight. These practices can be found in Section IV.

Throughout 2009, regulators also issued and refined new compensation guidelines, of which the most widely accepted are those embedded in the April Financial Stability Board (FSB) principles, which were endorsed by the G-20 at their April London Summit, and in the FSB Implementation Standards, issued in September and endorsed by the G-20 Finance Ministers and Central Bank Governors in November.

To assess progress made in the past year, the IIF expanded the SCI Advisory Panel on Compensation to provide broader coverage of industry practices. The Advisory Panel’s direct knowledge of compensation practices and their professional engagement with financial services firms on this issue, combined with the resources of Oliver Wyman and publicly available information, provided the information base for this interim assessment.

Considerable progress seen in the principles and standards set by the FSB and national regulators.

Financial services firms recognize that the reform of compensation policies constitutes an integral part of the process to build more robust risk management systems in the firm.

Firms have made considerable progress in aligning compensation structures with the principles and implementation standards of the FSB and national regulatory bodies. More work, however, remains to be done by firms and regulators.

Progress in compensation reform can be broken down into three critical areas:

- **Governance:** Most firms, especially leading institutions, are making tangible progress in adopting principles for the governance of compensation in a timely manner. Firms are strengthening independence, oversight, and expertise of Board-level compensation committees; reinforcing the autonomy of risk and control functions and strength-
ening their relationship with Board-level committees; back-testing new compensation processes to ensure they do not encourage adverse behavior; and ensuring that payments to risk and control functions are independent of the business areas they oversee.

• Incorporation of risk factors: The direction of change is clear, and most firms will have an improved risk-incorporation process in place by year-end, though some may require more time to test and validate key elements of the new structures before they are firmly established. Firms are changing performance metrics to include adjustments for important risks and for the cost of capital while incorporating analytically grounded judgment as a critical input to compensation. In addition, firms are seeking to implement “knockouts,” which are predetermined ratios used to reduce or eliminate payouts on the basis of material underperformance.

• Payout structures and schedules: Most firms have already incorporated reformed provisions into their new structures, but details remain to be worked out pending market and firm-specific developments, as well as final details of regulatory requirements. Firms are increasing deferral amounts and extending deferral periods; placing a portion of deferred compensation at risk through clawback provisions; linking more compensation to long-term firm performance by increasing the portion of compensation in the form of share-linked instruments; and banning multi-year guarantees lacking risk adjustment.

The reform of compensation, as in the reform of any market practice, is a process and not an event. Thus, while a more broad-based and detailed assessment will be made in the spring of 2010, the “final” shape of the new compensation structures will probably not be known until the completion of a full bonus cycle that incorporates the results of firms’ experience with the improved business practices and with the newly issued supervisory guidelines.

Firms and regulators face challenges as they move to reform compensation practices.

While considerable progress continues to be made, financial services firms and regulators are facing important challenges as they seek to reform compensation structures. Foremost among the challenges are the concerns about regulatory inconsistency and the lack of detailed and harmonized guidance across jurisdictions. More specific challenges include the following:

• Governance: Firms pursuing the empowerment of Boards to oversee and guide compensation policies must establish the necessary reporting and advisory responsibilities of the CRO with respect to the Board compensation committee and ensure effective collaboration with other Board committees, especially Risk and Audit. In addition, it is becoming increasingly difficult to find capable directors willing to serve on compensation committees, due to such issues as workload and director liability, while the demarcation lines between Board and management responsibilities in this regard are not always easy to define.

• Risk alignment: Firms moving to better align compensation policies and practices with risk appetite face technical challenges, including the design of granular and effective risk-based compensation approaches to deferment. This is due primarily to the unavailability of granular data, lack of tested methodologies, and a generalized skepticism regarding potentially overcomplicated metrics. Firms must also carefully manage the financial impact of mandatory deferral increases, which, if unfunded, could have the effect of increasing earnings volatility.
• **Payout structure**: Among the key challenges facing firms adopting deferral schemes and clawbacks is the need to strike a balance between moving rapidly to adopt best practices and de-emphasize short-term results, on the one hand, and the ability to attract and retain needed talent, on the other. Harmonized regulatory initiatives are critical to creating a level playing field. Moreover, tax and accounting regulations are not always conducive to optimal deferral and clawback mechanisms. Firms also face challenges in communicating changes in compensation policies convincingly both within the firm and to shareholders and the public.

Finally, linking compensation to capital conservation issues raises another challenge as firms weakened by the crisis may be further disadvantaged if they are unable to secure adequate compensation to attract talent to improve their market positions.

**CREDIT UNDERWRITING, RATINGS, AND INVESTOR DUE DILIGENCE IN SECURITIZATION MARKETS AND DISCLOSURE AND TRANSPARENCY ISSUES**

*Industry and regulators need to work together to restart securitization markets.*

There have been faint signs of revival in the structured products markets in the past few months. In the United States, this is largely attributed to the government’s Term Asset Lending Facility (TALF) Program. European structured products markets are also opening slowly. While the shortcomings of earlier practices in the securitization markets contributed significantly to the financial crisis, it is generally acknowledged that securitization markets need to be strengthened to reemerge as an important channel to supply credit to the economy.

**Industry and regulatory efforts are focused on better transparency in origination and distribution.**

• Industry groups such as the American Securitization Forum (ASF) and the Association of Financial Markets in Europe/European Securitization Forum (AFME/ESF) have done significant work to improve disclosure and transparency practices in the origination of, underwriting of, and ability to distribute structured products (e.g., by standardizing definitions, documentation, and availability of information).
• A number of important changes are also being mandated through regulatory reform.
• Providers of pricing and related data are making significant changes that will contribute to transparency and the quality of pricing for specific products and markets.
• Nevertheless, more work needs to be done—and is ongoing—to bring all parts of the origination and securitization chain up to the highest standards, in order to restore investor confidence. The ultimate recovery of the securitization market will also depend on the outcome of regulatory and accounting changes, the full impact of which cannot yet be assessed.

*Restoring confidence in credit ratings is crucial to the revival of structured product markets.*

The credit ratings industry has recognized many of the weaknesses in the ratings process that became evident as the financial crisis developed. Significant efforts have been made by rating agencies and regulators to address these through strengthening ratings methodologies and improving regulatory oversight. However, it is too early to see whether these improvements in the ratings process, coupled with the improved disclosure and transparency cited above, will be sufficient to restore investor confidence in the securitization markets.
RESTORING MARKET CONFIDENCE AND RESILIENCE

IIF members reiterate commitment to restoring confidence and creating a resilient industry.

In July 2009, the IIF published the Restoring Confidence Report, which provided an industry perspective on the future of international financial regulation. This report reaffirmed the commitment of IIF members to continue raising market practices to the high standards set out in the CMBP Report, building on the substantial progress made to date. The Restoring Confidence Report includes specific commitments designed to carry forward the industry’s dialogue with regulators to work together to build a more robust global financial market (see Section VII, “Industry’s Commitments”). It also reflects the recognition that lasting stability depends on the effective interaction of well-designed regulation with effectively functioning international markets and well-managed firms.

- This Report, in tandem with other reports of the IIF published over the past 18 months, offers an industry contribution to building a new financial world.
- Each report marks a further step toward concrete goals intended to make the financial system both resilient to future systemic stresses and productive in providing credit to the global economy.
- But this new world will be dynamic and evolving: none of the reports represents a final assessment.
- The industry will need to keep revisiting the Principles and Recommendations outlined in these reports to adapt, on an efficient and sound basis, to changing circumstances.

CONCLUSION

The committee has found that considerable progress is under way in key areas such as strengthening risk management, improving liquidity management, and reforming compensation systems. However, as this Report stresses, the reform program is far from complete. Efforts have to be sustained as the industry recovers, greater IT investment will be required in risk management and risk-monitoring systems, and reforms will need to be institutionalized through governance changes. These remaining challenges notwithstanding, there is no doubt that many in the industry have internalized the lessons of the crisis and fully intend to persevere on the positive trajectory that has been outlined in this Report.
Introduction

The Final Report of the IIF Committee on Market Best Practices (CMBP Report) was released in July 2008 in the midst of the financial crisis—the period between the “fire sale” of Bear Stearns and the collapse of Lehman Brothers. That Report offered Guiding Principles and practical Recommendations to lift industry practices to best practices, aimed at addressing market weaknesses and shortcomings and thereby contributing to the rebuilding of confidence. It covered a range of improvements in firms’ governance, business practices, and day-to-day risk management. The CMBP Report’s Recommendations contributed to intensive industry activity and have been drawn on by global regulators in developing revised guidance, supervisory practices, and rules. The Senior Supervisors’ Group (SSG), which comprises senior financial supervisors from seven countries, included many of the IIF Recommendations in its industry self-assessment that underlies its recently published Risk Management Lessons From the Global Banking Crisis of 2008.

The CMBP Report made Recommendations in six areas, all of which were important in giving direction to and establishing benchmarks for firms:

- **Risk Management:**
  - Improving governance and risk culture, including augmenting Board and senior management participation in risk management;
  - Institutionalizing, setting, and monitoring a firm’s risk appetite;
  - Defining clearly and enhancing the role of the Chief Risk Officer (CRO);
  - Providing guidance on risk models and integration of risk management across the firm;
  - Assessing the risk of complex structured products; and
  - Understanding the need for better stress testing.

- **Compensation Policies:** The IIF proposed compensation principles to base compensation on actual performance, to link compensation to risk-taking, and to align payouts with the timing of associated risk-adjusted profits. The Principles also called for a longer term focus, reform of severance pay, and increased transparency of compensation policies.

- **Liquidity Risk, Conduits, and Securitization Issues:** The CMBP Report identified challenges of liquidity risk management and updated the IIF’s Principles of Liquidity Risk Management (2007) on internal transfer pricing, liquidity risk stress testing, market liquidity issues, and structured financial vehicles.

- **Valuation Issues:** Recommendations were made for the management and governance of the valuation process, the need for infrastructure improvements for price discovery,
and guidance on valuation under difficult market environments.

- **Credit Underwriting, Ratings, and Investor Due Diligence in Securitization Markets:** Recommendations covered the need for improved and more consistent underwriting standards and greater responsibility for firms that originate, distribute, and underwrite structured products; reforms to the credit ratings process, particularly of structured products; and the need for investors to reduce reliance on external ratings and conduct their own due diligence on investments.

- **Transparency and Disclosure Issues:** The IIF called on firms to increase disclosure at the product level, harmonize market definitions and structures, and adopt common platforms and technology. It also recommended augmented transparency at the firm level with regard to disclosure of risk profiles, qualitative and quantitative information about valuation processes, and liquidity risk management.

Leading financial firms that were most severely affected by the crisis began conducting gap analyses between internal practices and the Recommendations, to set in motion the process of identifying and addressing each firm’s own issues, as early as the summer of 2008.

The IIF’s Board of Directors has reaffirmed its commitment to the Principles of Conduct and made it a priority to implement the Recommendations among the IIF membership. With this in mind, in late 2008, the IIF Board brought together 57 representatives from 48 member firms to establish the Steering Committee on Implementation (SCI),4 which was mandated by the Board to oversee the implementation of the CMBP Report among the wider membership, review the Recommendations made in the Report in the light of unfolding developments, and develop new Recommendations if found to be necessary.

To carry out its mandate, the SCI undertook several initiatives, which include:

- **Dissemination of the CMBP Report and initial survey of all IIF bank members to encourage self-assessment against Recommendations:** The CMBP Report was widely disseminated in the industry worldwide. As the first undertaking of the SCI in December 2008, the IIF conducted a brief survey of all member banks in both developed and emerging economies. This survey was intended to encourage implementation of the Principles and Recommendations, as well as to assure the Institute that the process of reform was starting as expected. On request, members were provided a model methodology for gap analysis as a first step toward implementation.

  Survey results included responses from 78 member firms, of which 46 firms were in developed countries and 32 in emerging markets. This showed that a significant majority (78%) of firms in developed markets, as of April 2009, had already begun (and in some cases completed) a self-assessment process that reviewed internal practices against the Recommendations made by the IIF and other organizations. Firms in emerging markets were less likely to have undertaken a similar survey, probably because the crisis was viewed as a “developed” market crisis; however, subsequent discussion suggests that many emerging market firms are using the Recommendations as a point of reference for internal reforms, making due allowance for the applicability to their business models.

- **The Ernst & Young Survey of member firms:** (discussed extensively in the Executive Summary and in the substantive sections of this Report): This survey collected information on firms’ responses to the IIF Recommendations and to the crisis on a deeper and more comprehensive basis, and was critical to developing this Report.

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4 A list of SCI members can be found at the beginning of this report.
• “Knowledge-sharing” meetings to assist with self-assessments: The IIF also organized “knowledge-sharing” meetings to encourage members to share their experiences of self-assessment against the Principles of Conduct and Recommendations. Members discussed issues arising from conducting self-assessments in groups and subsidiaries and highlighted challenges that were identified in the self-assessment process, which included the need to prioritize gaps or shortfalls given budgetary and resource constraints. Members also advised the Committee that the industry would benefit from more clarity on certain terms used in the Recommendations in the CMBP Report such as risk appetite.

• Survey on compensation practices in financial services firms: Additionally, the IIF undertook, in cooperation with Oliver Wyman, a survey of major financial service firms to take stock of compensation practices in relation to the Principles set out in the CMBP Report. Thirty-seven global financial firms representing 57% of wholesale banking activity participated in the survey. A panel of experts was constituted to advise on the interpretation of the consolidated results.

    The compensation survey showed that the vast majority of firms were giving high priority to a review of their compensation policies and practices. Progress toward aligning compensation with the IIF Principles also was being made, but much more work needed to be done. While a majority of the firms surveyed linked compensation to performance and used deferrals in compensation payouts, most faced challenges in aligning compensation to the risk time horizon of the revenue and in incorporating cost of capital and risk factors into the assessment of performance. The Compensation in Financial Services: Industry Progress and the Agenda for Change (Compensation Report), which was published in March 2009, also set out a list of leading compensation policies to help guide firms in reforming compensation practices.

    Given the high visibility of compensation issues, the IIF leadership, in a July 2009 letter addressed to members, underlined the importance of implementing reforms in line with the IIF Principles and regulatory guidance and urged members to resist practices that may be inconsistent with those principles, such as multi-year guaranteed bonuses.

    The remainder of this Report reflects the work of the SCI and presents its assessment of the industry’s efforts to implement the IIF Recommendations to date, and offers further industry guidance, particularly on risk management, a key area being changed in financial institutions. It is structured as follows:

**Section I**

Additional guidance for financial institutions on risk management practices. With detailed guidance in Appendices II through V on the following topics:

a. Risk appetite;
b. Risk culture;
c. Risk models and statistical measures of risk; and
d. Risk management across economic cycles.

    In addition to providing discussions of each topic intended to facilitate firms’ thinking about their own risk management, the papers make additional Recommendations to help take the work forward. A summary of the Recommendations can be found in Appendix VI.

**Sections II and III**

Assessments of improvements made and compliance with Recommendations in the CMBP Report pertaining to liquidity risks (Section II), and valuation issues (Section III).
Section IV


Sections V and VI

Assessments of improvements made and compliance with Recommendations in the CMBP Report pertaining to credit underwriting, ratings, and investor due diligence in securitization markets (Section V), and transparency and disclosure (Section VI).

Section VII

The industry’s commitments to global financial reforms.
INTRODUCTION

The industry and the regulatory community share the view that risk management is the area in which most important lessons arising from the financial crisis have been identified. It is now clear that some firms overestimated both the market’s capacity to absorb risk and their own risk management capabilities. As clearly stated in the IIF CMBP Report, failures in risk management policies, procedures, and techniques were evident at many firms with devastating consequences. In particular, weak risk culture, failures in risk governance, and lack of a comprehensive approach to firm-wide risk management resulted in poor risk identification and management.

It is not surprising, therefore, that the main focus of gap analysis against the CMBP Report’s Recommendations (as well as those of groups such as the SSG)\(^5\) and implementation of revised practices has been the area of internal risk management. In particular, IIF members and the industry in general have concentrated on revamping their risk management governance, structures, methodologies, policies, and procedures. Discussions among SCI members (including knowledge-sharing sessions on CMBP implementation organized by the IIF) have evidenced the great amount of work that the industry has undertaken to bring about significant change to risk management practices. The Ernst & Young Survey confirms that firms see this as a high priority area and many firms reported widespread changes to risk management practices.

While this is by no means a completed task, progress has been widespread and significant. There is no question of a reversion to “business as usual” as conducted before July 2007.

Importantly, the work of the SCI on risk management issues has been undertaken with the explicit goal of ensuring that changes in industry practices are resilient and can withstand the passage of time. The occurrence of the global financial crisis is evidence that lessons from previous crises were short-lived and rapidly forgotten. The industry is committed to preventing this from happening again, hence the importance of undertaking an honest and objective evaluation of the robustness of the changes in industry practices.

\(^5\) The SSG gathers representatives from the French Banking Commission; the German Federal Financial Supervisory Authority; the Swiss Financial Market Supervisory Authority; the U.K. Financial Services Authority; the Canadian Office of the Superintendent of Financial Institutions; the Japanese Financial Services Agency; and, in the United States, the Office of the Comptroller of the Currency, the Securities and Exchange Commission, the Federal Reserve Bank of New York, and the Board of Governors of the Federal Reserve System. The SSG has published various reports on risk management issues, in particular the March 2008 report Observations on Risk Management Practices During the Recent Market Turbulence (the 2008 SSG Report) and the October 2009 report Risk Management Lessons From the Global Banking Crisis of 2008 (the 2009 SSG Report).
This section is divided in two sub-sections as follows:

A. Progress made on implementation of CMBP risk management recommendations, and
B. Additional work and recommendations on risk management issues
   1. Risk appetite
   2. Risk culture
   3. Internal risk models

A. PROGRESS MADE ON IMPLEMENTATION OF CMBP RISK MANAGEMENT RECOMMENDATIONS

The July 2008 CMBP Report gave top priority to the development of enhanced industry practices on risk management. Recommendations focused on three main areas:

1. Risk management governance issues,
2. Risk management methodologies and procedures, and
3. Stress-testing issues.

To facilitate an evaluation of progress made, this Report follows the same structure.

1. Risk Management Governance Issues

RISK CULTURE

Firms are making a concerted effort to transition from a “sales-driven” culture to one more focused on risk.

In the area of governance, the CMBP focused primarily on the need for firms’ governance to embed a firm-wide focus on risk. In particular, it was explicitly recognized that the crisis had provided clear evidence that effective cultivation of a consistent risk culture throughout firms was the main enabling tool in risk management.

The implementation of an effective and pervasive risk culture has been a top priority for IIF members after the crisis. The Ernst & Young Survey confirmed the emphasis that firms are placing on strengthening the risk culture. This is reflected in concrete efforts to move away from a “sales-driven” culture to one more focused on risk. In practical terms, this is demonstrated by actions such as:

- Specific changes in job content and descriptions (including the functions and responsibilities of Board members),
- Changes in policies and procedures introducing additional risk criteria for the evaluation of credit and trading decisions,
- The definition of risk as the common thread for decision making at firms at all levels, and
- Revising and re-aligning compensation policies to incorporate risk criteria and reinforce development of a more risk-focused culture.

Significantly, in several firms this has been achieved in part by changes in key personnel. At several firms senior executives in both business and controls areas have been replaced and in some cases new leadership for the risk function has been appointed.

Furthermore, the Ernst & Young Survey suggests a clear pattern of development toward a more “risk-aware” operating model in many firms, with emphasis on risk identification and mitigation. Importantly, such responsibilities are now more widely and explicitly included in the job descriptions of executives at all levels, with direct implications in their remuneration.

As discussed below, change in risk culture is a challenging issue to address. In particular, a key challenge is to embed change institutionally so that reforms become permanent features of the way the firm operates. The risk that changes and reforms might be short-lived (in particular during times of strong bullish markets) is a tangible one, and firms are explicitly addressing such risk by
making sure that new policies and procedures are wired into their institutional fabric via, among others, linkages to performance evaluation and compensation policies.

Given the pivotal importance of a robust risk culture and to assist members in their efforts to implement recommendations in this area, the Institute organized a focused project that has resulted in additional analysis and further recommendations as presented in Appendix III of this Report.

RISK GOVERNANCE

The CMBP Report also included several Recommendations aimed at improving the governance aspects of risk management.6 In particular, the Report advocated the need for firms that did not already have them to develop governance structures whereby senior management, in particular the Chief Executive Officer (CEO), is directly and primarily responsible for risk management, establishing at the same time an essential oversight role for the Board.

The discussion that follows focuses on enhancing the focus on risk in firms, something that all agree is of the highest importance. Running a firm is not just about mitigating risk, of course; it also is about balancing risks and rewards to achieve long-term goals set by the Board and about finding the resources to supply credit and other services to society. How best to achieve that balancing is ultimately up to senior management. However, as the discussion has shown, the lessons of the crisis are giving senior management much better and better-understood tools to understand the risk side of that equation.

Governance changes are designed to increase Board oversight of risk.

Implementation of these Recommendations also evidences a great deal of progress. The Ernst & Young Survey reported an emphasis from a number of firms on new practices as to how Boards perform their oversight role.7 This is reflected in new governance trends such as:

- Changes in the composition of Boards, with a significant increase of members with relevant experience in financial and risk management issues.
- Significant increase in the amount of time allocated during Board sessions to the discussions of risk management issues.
- Establishment of specialized Risk Committees of the Board at firms that previously did not have one.
- Noticeable changes in reporting practices. In particular, Boards have started to demand focused reports on risk issues to be presented and discussed on a regular basis. In many cases, this has resulted in a reduction in the quantity of information and a shift toward more focused and insightful reports.
- As detailed below in this Report, a more direct involvement by Boards in the definition of firms’ risk appetites and the discussion and analysis of stress-testing exercises.

These emerging trends appear likely to develop into consolidated industry practices, which would be consistent with the Recommendations. In particular, many of them are likely to become part of regulatory requirements as well as standard corporate governance practices. The Basel Committee is working on updating its guidance document Enhancing Corporate Governance for Banking Organizations,8 and the IIF’s Corporate Governance Working Group is contributing to its debates. Much of the updating

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6 See in the CMBP Report Recommendations I.1, 2, 17, and 18.

7 The term Board is used in the Report in a generic way so that it applies to different corporate structures across jurisdictions.

8 Basel Committee on Banking Supervision, Enhancing Corporate Governance for Banking Organizations, February 2006.
will focus on risk governance, and the Institute believes the new guidance will draw in some part on the related Recommendations.

While such requirements need to be adapted to the particular characteristics and circumstances of each individual firm, markets, shareholders, regulators, and other stakeholders can expect that a high focus on risk governance will generally be expected of any major, internationally active financial firm.

**RISK APPETITE**

A great deal of focus was given in the CMBP Report to the issue of risk appetite.9 That Report recommended that all firms should incorporate within their risk management frameworks the articulation of the firm’s risk appetite and its adoption throughout the firm. Specifically, the Report recommended that firms should set basic goals for risk appetite and strategy and monitor how performance against such strategy evolves over time, considering all types of risk, including risks arising from the firm’s relationship to off-balance-sheet vehicles.

**Firms are embedding risk appetite in decision-making processes across business units . . .**

The Ernst & Young Survey highlighted the focus by the industry on moving to a more explicit risk appetite and the implications that this will have for control structures. In particular, the survey showed that many firms are currently undertaking work to embed risk appetite in decisions across business units so that it has a greater influence on lending and trading activity. This is significant, because one particular weakness identified was that while many firms had a formal process for the definition of risk appetite, this was not always well communicated to business units and thus did not have direct consequences for actual lending and trading activities.

. . . and adopting different approaches to implementing changes . . .

It is worth noting that firms are adopting different approaches to the implementation of recommendations in this area. Some firms have revised their approach in its entirety (in many cases, starting from scratch where no formal approach to risk appetite setting existed), while others have focused on developing effective mechanisms to ensure that the risk appetite framework permeates the different business and product lines in the firm. In this regard, some firms have found it useful to establish firm-wide risk committees (i.e., multidisciplinary committees looking at operational, credit, liquidity, and market risk), which are now being empowered to have a substantial effect on business decisions, including all aspects of lending and trading.

. . . but challenges remain in making risk appetite an operative risk management instrument, creating the need for additional industry guidance.

Despite the significant progress being achieved in this area, challenges still remain. In particular, many firms are still in the phase of devoting considerable effort to making risk appetite a tangible instrument that is capable of being operationalized and acting as a key component of the strategic planning of the firm.

Importantly, after a review of the Recommendations of the CMBP Report, it was decided that the Institute could assist firms in this effort using experts in the industry to provide additional analysis and suggestions to help firms think through risk appetite issues. The consensus view is that a well-thought-out and robust risk appetite framework will help firms dramatically improve their risk sensitivity and risk management effectiveness. The additional work on risk appetite issues is detailed and explained in Appendix II of this Report.

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9 See Section D.I.2.
THE CHIEF RISK OFFICER FUNCTION

Another area of focus in the CMBP Report was the need to strengthen risk management organizational structures. The Report emphasized the importance for firms to revise their organizational structures in such a way that a clear responsibility for risk management is assigned to an officer at a senior level, in most cases a CRO. The officer should have sufficient seniority, voice, and independence from line business management to have a meaningful impact on decisions.

Risk functions have greater influence on firm operations and business decisions.

A review of industry practices (including the Ernst & Young Survey) shows a great deal of progress in this area, with the majority of firms enhancing the role of the CRO and the risk function. Specifically, firms have taken concrete steps to give the risk function a greater say in the development of corporate strategy and the development of new products. In addition, several firms have made changes to their policies and procedures that have resulted in assigning the CRO a critical role. In some cases, this may extend to a de facto veto power over business decisions. The essential feature however is for the CRO to have a strong voice and the ability to escalate any issue to the top of the firm for resolution by the CEO or, as appropriate, the Board, taking full cognizance of the risk dimensions of the decision. While such power is not always formal, a clear trend has emerged as to the critical involvement of the CRO in all strategic decisions that might significantly affect the risk profile of the firm.

Some additional industry trends have been identified:

- Elevation of the CRO role by several means, including direct reporting line to the CEO, establishment of reporting lines to the Board Risk Committee (or equivalent), and mandatory participation of CROs in all key management committees;
- The development of adequate incentive and remuneration policies for CROs aimed at clearly signaling within the firm the fact that risk is an important element of cultural change;
- Assignment of the responsibility to maintain consistency between the risk profile of the firm and risk appetite to the CRO; and
- Expansion of the CRO function to comprise advice, control, management, and technical oversight functions, including analysis of new product development and liquidity risk.

All these new trends, analyzed as a whole, clearly demonstrate a significant change in industry practice as to the CRO’s new fundamental role.

2. Risk Management Methodologies and Procedures

The CMBP Report performed a careful analysis of the way in which seemingly robust risk management tools and frameworks can prove inadequate. As part of this comprehensive assessment, the Report recommended several different actions that are now covered by IIF Recommendations and being implemented widely, including:

- Ensuring that risk management does not rely on a single risk methodology and analyzing group-wide risks on an aggregate basis;
- Developing metrics calibrated appropriately to risk appetite horizons;
- Designing remedial actions to address the technical limitations of risk metrics, models, and techniques (e.g., VaR);
- Understanding the need for more effective consideration of correlations among risk types and avoiding the “silo” approach

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10 See CMBP Recommendations I.15–19.
11 This conclusion also is corroborated by the findings of the 2009 SSG Report.
Reform in the Financial Services Industry: Strengthening Practices for a More Stable System

toward risk management by taking a comprehensive approach to risk, integrating strands such as credit, market, operational, liquidity, and reputational risk;
• Adopting an integrated approach to risk management when dealing with complex structured products;
• Ensuring that risk models “look through” the direct risk and capture the market sensitivities of underlying exposures (e.g., mortgages); and
• Identifying and managing risk concentrations so that all sources of risk (including off-balance-sheet risks) are effectively captured.

The Ernst & Young Survey clearly demonstrated that firms are actively working on addressing gaps against these Recommendations. While progress has been made, it is clear that full and effective implementation will require time and continuing effort.

Deficiencies in risk methodologies and reporting are being addressed . . .
Firms have identified several issues regarding the quality of risk information available to senior management. In particular, deficiencies in aggregated risk reporting have been a top priority, as it was felt that the quality of information before the crisis had not enabled top management at all firms to see the size and riskiness of some exposures, particularly across business units.

A primary reason for opacity (or absence) of information was that management information system (MIS) reporting measures were developed during the 1990s to give top management a net view of risk (VaR and economic capital), which was useful for some purposes but in some cases also disguised the size of individual positions. Because exposures were netted and reduced by hedges and further reduced by using correlations to allow for diversification benefits, the actual size of some of the gross exposures was not visible to management. As a result, managements at certain firms, including some of those hardest hit by the crisis, were not aware of the potential risk if hedging, netting, or diversification assumptions did not hold.

Moreover, many reporting systems were built on a siloed basis, focused on specific businesses or risk types, and thus were not capable of aggregating information to cover group-wide exposures. Therefore, firms in general, but especially those most affected by the crisis, have made the development of better metrics for identification of scale of exposure an urgent priority. This requires rethinking how risk is transmitted through the organization and where similar or related risks arise across business lines and also working more closely with front-office managers to better identify scale and size of possible risks. In some cases, this requires a thorough overhaul; in others, it is more in the nature of careful review and fine-tuning.

In addition, regulators continue to apply significant pressure on firms to aggregate exposure and risk information across product lines, businesses, and legal entities. This is, for example, a key component of the Pillar 2 guidance that was part of the new set of enhancements to the Basel II framework that was released in July 2009. Such regulatory requirements are a good complement to the proactive work that firms are undertaking and also are in line with the IIF Recommendations. However, this remains challenging for many firms and will require substantial IT investments, expert personnel, and time to fix. Indeed, one strand of regulatory thinking behind the concept of expanded contingency planning or “living wills” is that the exercise of focusing on the areas of risk that would arise if the firm had to be resolved would help firms to improve risk aggregation or simplify structures to prevent risks from being lost. While the living-wills concept is controversial and, in its more extreme versions, could lead to serious distortions

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of business models, the basic idea of a risk-based contingency planning process is a sound one. The Institute discussed this point more fully in the IIF’s 2009 Restoring Confidence Report in “Section 4. Financial Stability Through Macroprudential Oversight.”

Despite the challenges, significant progress has been achieved in additional areas and include:

- **Improvements of internal risk models:** Excessive reliance on external ratings in internal risk models meant that senior management in some firms were not made aware of the sensitivity of risks to the assumptions being made. A revised approach to internal risk models places greater emphasis on complementary measures such as robust stress testing.

- **Better data on off-balance-sheet risks:** Some firms surveyed identified the need for automated systems to gather data on indirect exposures, as previous systems that measured the size of off-balance-sheet risks had not been sufficiently robust. Assumptions about reputation risk have been changed, and accounting changes also will mandate new thinking about vehicles. Automated systems are now being developed and implemented at several firms.

- **Reassessing life cycle of risk information to improve underlying data quality:** The Ernst & Young Survey found that firms were focusing on risk information and in particular the necessary data collection. However, the complexity and number of systems involved makes this a significant and challenging task and one in which time will be required to realize the full benefits of change.

- **Firms streamlining risk reports to make information clearer:** Firms have made important revisions to their MIS reports for senior management and the Board. Such reports now present relevant information about complex businesses in ways that are clearer and more concise and that are continually being improved.

**...but challenges remain largely owing to legacy and systems issues.**

Some remaining challenges relate to data and systems upgrades, which are cited as limiting factors with regard to the speed with which management information can be enhanced. This is because, previously, risk systems tended to be “silod.” In the largest firms, the complexity of the legacy systems is not to be underestimated. They have typically become complex as a result of growth by acquisition or by development of systems by individual businesses, with many systems being operated on platforms that require specialist, often limited knowledge. The complexity of information systems prevents quick changes from being rolled out. Moreover, it is not advisable to rush change in these systems, given the goals of accuracy and robustness.

Challenges exist in aggregating data across the different entities forming large international groups. The lack of ability to extract and aggregate these data is seen as a key obstacle to the quick rollout of broader system enhancements. In particular, the ability to aggregate counterparty exposures across different business lines remains an important priority for development. While aggregation can be done, its speed is not always satisfactory, and additional work is clearly needed. The goal is to move toward an automated approach compared with the manual intervention still required in too many cases. At present the underlying data, although available, cannot in many firms be pulled together and aggregated within realistic time frames without manual adjustment. Additional work on this matter remains therefore a top priority. In addition, firms have been making the considerable investments of cost and effort necessary to improve capabilities to provide valuations of end-of-day exposures on all portfolios where that did not exist previously.
3. Stress-Testing Issues

Growing consensus has formed in the private sector as well as among regulators since the crisis on the fundamental role that internal stress testing can play in dealing with unprecedented market movements and disruptions not usually captured by historical risk models. In particular, the CMBP Report called for urgent refinement of stress-testing methodologies so that they be more consistently applied as well as more flexible and versatile.13

The Ernst & Young Survey demonstrated that firms were focusing on improvements in several areas, all of which go in the direction of the IIF Recommendations. Changes reported include:

- **Improvements in the type of scenarios being tested**: Before the crisis, stress testing often was not sufficiently severe. This was the result in several cases of dismissive attitudes by senior management of scenarios that were considered at the time “too extreme” or “implausible.” Currently, across the industry, more demanding testing is commonly performed and accepted and indeed demanded by senior managements and Boards, although debate still exists on how best to make such scenarios truly useful from a business as well as a risk management perspective.

- **Improvements in the process of scenario definition are now tangible**: Many firms have made progress in developing approaches to interactive scenario setting across the entire organization, with key inputs being provided by front-office units that in the past did not have a significant role in the process. In addition, an increasing number of firms are adopting top-down approaches that place emphasis on an expeditious definition and testing of scenarios.

- **The industry as a whole is now moving toward a more comprehensive and systemic approach to stress testing**: In particular, ad hoc approaches are now being discarded, and robust approaches solidly embedded in ongoing risk management frameworks are now increasingly the norm. Importantly, the linking of stress testing to the formulation of the risk appetite of the firm as noted before (as well as the integration of liquidity risk management) has had extremely positive effects on the robustness of stress-testing methodologies.

- **Firms have made important progress in improving stress-testing capabilities for credit and liquidity risk**: While the focus before was predominantly on market risk issues, improvements in these two areas are now visible.

- **Another important area of improvement refers to control and validation mechanisms**: Before the crisis, several firms failed adequately to control the appropriateness of their stress-testing methodologies. Currently, this has been addressed by many firms by the development of review and control methodologies that specifically cover their stress-testing procedures.

- **Importantly, recognition now exists that improvement of stress testing needs to remain a work in progress**: In particular, additional work is needed to address the key limiting factor of lack of availability of data across multiple legacy systems in many firms. The lack of ability to extract and aggregate these data is seen as a key obstacle for a quick rollout of system enhancements, as discussed above.

In summary, the work of the SCI clearly shows that significant improvements have been achieved in this area, improvements that have now started to show effects in the way firms perform risk capital planning vis-à-vis future

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negative scenarios. However, there is consensus that improvements cannot be limited to systems and methodologies. While those are important, it is perhaps more urgent to continue making progress in the way judgment is applied in the usage and interpretation of stress-testing results as well as the way stress testing is embedded in actual decision making. These areas remain, therefore, a key focus for the industry.

B. ADDITIONAL WORK AND RECOMMENDATIONS ON RISK MANAGEMENT ISSUES

1. Risk appetite
2. Risk culture
3. Internal risk models
4. Risk management across economic cycles

At the request of the SCI, the Working Group on Risk Management (WGRM) conducted additional analysis on four important risk-related issues: risk appetite, risk culture, internal risk models, and risk management across economic cycles. The sense of the SCI was that although most of these issues were already reviewed and discussed in the CMBP Report, and the Recommendations related to these subjects remain sound, additional work was warranted given the importance of ensuring that the industry effectively implements sound practices on these subject matters. In particular, the SCI felt that additional analysis and more detailed discussions of these issues (including the formulation of additional recommendations, if needed) would be extremely beneficial for the implementation efforts of the industry.

The WGRM has worked on these issues during 2009. Its analysis, conclusions, and recommendations are presented as separate comprehensive analyses attached to this Report (referenced as Appendices II–V).

1. Risk Appetite

There is consensus that the industry would benefit from a discussion of the definition and application of a firm’s risk appetite. As discussed above, firms are giving a great deal of attention to risk appetite issues and have undertaken substantial steps toward implementing this concept in a practical way. However, there is consensus that there is further need to clarify the concept, to facilitate its practical and effective implementation, and to discuss how to manage risk appetite concepts in the new post-crisis environment. Importantly, additional guidance and recommendations are needed to ensure that effective change in firms’ practices is long-lived once market conditions return to normal.

The analysis in Appendix II makes the following leading points:

- **Amplifying the definition of risk appetite:** The SCI recommends a revised definition of risk appetite as “the amount and type of risk that a company is able and willing to accept in pursuit of its business objectives.” This revised statement balances the needs of all stakeholders by acting as both a governor of risk and a driver of current and future business activity.

- **Need for differentiating risk appetite and risk capacity:** Risk appetite and risk capacity are related but by no means identical. Risk appetite is defined as the amount and type of risk that a company is willing to accept in pursuit of its business objectives. Conversely, risk capacity is the maximum amount of risk a firm can assume; capital base, liquid assets, borrowing capacity, and regulatory constraints are all components of a firm’s risk capacity.

- **Qualitative vs. quantitative inputs:** There is a critical need for emphasis on qualitative measures along with quantitative measures when determining risk appetite.
• **Stakeholders:** Those determining the risk appetite of the firm often are the two direct stakeholders—senior management and shareholders—as represented by the Board. However, there are other actors who must be considered in the process as well, such as bond holders, depositors, clients, and employees.

• **Risk appetite and liquidity:** Importantly, risk appetite should be connected to the liquidity profile and the funding plan of the firm; similarly, the risk appetite statement should consider dynamically liquidity risks, consistently with the 2007 and 2008 Recommendations to integrate liquidity more closely in overall risk management.

• **Risk appetite and stress:** Firms should express risk appetite along multiple dimensions, including both “normal business” conditions and “extraordinary” or “stressed” scenarios. The latter should include scenarios under which the firm is no longer viable or where it would be forced to take actions that it would otherwise be unwilling to take (e.g., seriously diluting ownership).

• **Communication and disclosure of risk appetite:** Firms should improve their disclosure practices regarding their risk appetite determination (e.g., what metrics they use, their level of tolerance, their decision-making processes). These disclosures display to stakeholders, analysts, and creditors—who, in short, to the market—how rigorous and robust the risk management framework is at an individual firm, hence contributing to effective market discipline.

• **Regulators and risk appetite:** Some supervisors’ reports have called for authorities to monitor and regulate banks’ risk appetite. While it is legitimate for macroprudential regulation to gather information on firms’ risk appetites, and it is legitimate for supervisors to challenge the firm’s risk appetite and the means by which this is identified and transmitted, firms should be able to define their own risk appetites with the interests of their direct stakeholders in mind.

In addition, the WGRM has developed revised Recommendations on risk governance and risk appetite, including incorporation of liquidity more explicitly into the process, augmenting those published in the CMBP Report:

**Revised Recommendation I.9:** The Board should review and periodically affirm, based on updates to risk metrics and similar guidance and information, the firm’s risk appetite as proposed by senior management at least once a year. In so doing, the Board should assure itself that management has comprehensively considered the firm’s risks and has applied appropriate processes and resources to manage those risks.

**Revised Recommendation I.11:** A firm’s risk appetite will contain both qualitative and quantitative elements. Its quantitative elements should be precisely identified, including methodologies, assumptions, and other critically important information required to understand risk appetite. Clearly defined qualitative elements should help the Board and senior management assess the firm’s current risk level relative to risk appetite as adopted. Further, by expressing various elements of the risk appetite quantitatively, the Board can assess whether the firm has performed in line with its stated risk appetite.

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14 The role of the Board in setting risk appetite is also emphasized by the UK Treasury consultative document *Walker Review of Corporate Governance of UK Banking Industry* (July 2009) and in *A Review of Corporate Governance in UK Banks and Other Financial Industry Entities* (November 2009).
Revised Recommendation I.13: The firm’s risk appetite should be connected to its overall business strategy (including assessment of business opportunities), liquidity and funding plan, and capital plan. It should dynamically consider the firm’s current capital position, earnings plan, liquidity risks, and ability to handle the range of results that may occur in an uncertain economic environment. It is fundamental, therefore, that the risk appetite be grounded in the firm’s financials and liquidity profile. The appropriateness of the risk appetite should be monitored and evaluated by the firm on an ongoing basis.

2. Risk Culture

Similarly, the SCI concluded that there was a need to offer additional guidance on risk culture, a topic that is included as a guiding principle of the CMBP Report but not otherwise developed. Considering the efficacy of internal risk management, the implementation of risk appetite, and the root causes of the current crisis, it became apparent that risk culture played an extremely important role in determining whether firms were more or less successful in managing their risks during the crisis. Culture is therefore essential to the efficacy of any future risk management recommendations.

One fundamental concept guiding the additional efforts on this issue is that despite conventional wisdom, the culture of a firm is not static or fixed. Rather, based on practical experience, it is now accepted that a firm’s culture is malleable and subject to positive change through several tools. In addition, firms also concluded that it would be beneficial to explore criteria to diagnose a weak or strong risk culture and how to improve it. Therefore, additional analysis has been conducted on this issue, and new Recommendations have been developed.

Members concluded that it would be useful to define risk culture, both for the emerging market and smaller firms that do not have a formal approach to the concept and for the larger firms that need to improve their own risk culture in light of recent history. The proposed definition: “Risk culture” can be defined as the norms and traditions of behavior of individuals and of groups within an organization that determine the way in which they identify, understand, discuss, and act on the risks the organization confronts and the risks it takes.

Above all, risk culture is not a given and can be positively changed and improved organically with strong efforts from management. With better guidance and focus on risk culture, firms can have more confidence in the effectiveness of risk management infrastructure.

The attached risk culture discussion details the elements of a successful risk culture, including essential components such as:

- An effective governance structure with evidence of management objectives linked to risk management objectives;
- Importantly, a culture in which senior management sets the correct “tone at the top,” as the firm is more likely to respond to decisions or actions that reflect actual risk culture rather than admonitions about risk culture;
- Establishing the conditions inside the firm so that there is the correct budget and support for the risk management unit, with those working in risk management having an effective voice; and
- Finally, a culture of “challenging and questioning” by employees, who must have the willingness and ability to ask the right questions, along with acknowledgement that a risk culture depends not only on both formal and informal channels for employees to raise these questions but also on their being accountable for those who do or do not step forward.

15 See Principle I.i. of the CMBP Report.
The risk culture discussion in Appendix III also proposes concrete Recommendations for firms to ensure that they have a robust risk culture in place, focusing on actively testing for risk culture and ensuring that risk culture endures in the face of mergers and acquisitions.

**New Recommendation A:** Risk culture can be defined as the norms and traditions of behavior of individuals and of groups within an organization that determine the way in which they identify, understand, discuss, and act on the risks the organization confronts and the risks it takes.

**New Recommendation B:** Management should take an active interest in the quality of the firm’s risk culture. Risk culture should be actively tested and objectively challenged in a spirit of fostering greater resilience and encouraging continuous improvement, reflecting the strategic aims of the organization.

**New Recommendation C:** Firms should ensure that relevant personnel have their formal responsibilities for risk clearly elaborated in their job descriptions and be evaluated for their fulfillment of these responsibilities as part of firms’ periodic performance reviews.

**New Recommendation D:** Any material merger or acquisition should be the occasion of a serious analysis of the risk culture in the new organization; the opportunity to take action to correct problems and foster a positive risk culture should not be overlooked.

3. Internal Risk Models

The SCI also recommended that additional work be conducted on the validity of internal risk models (including VaR), in light of the various criticisms and serious regulatory questioning that have arisen as to whether models should continue to be used as risk management tools as well as criteria for the determination of regulatory capital. At a fundamental level, the analysis establishes the validity of internal models while recognizing their limitations and deficiencies. However, it is important to note that most institutions already use inputs in addition to VaR to help manage portfolios and steer businesses. The consensus of the SCI is that, while by no means all statistical models performed badly, e.g. credit scoring models, the industry can benefit from additional analysis and discussion on the correct use of internal models as well as on adequate approaches to addressing the various deficiencies of such models evidenced by the crisis.

The analysis of internal risk models, included as Appendix IV, elaborates the following fundamental points:

- It is important to understand the deficiencies and limitations of statistical models (including VaR) focusing in particular on their deficient use by senior management, in some cases before the crisis; common implementation mistakes; failure to keep focus on the backward-looking nature of statistical models and dependency on historical data; VaR’s limited ability to capture severe shocks (fat-tail distributions); its limitations as a measure of leverage and liquidity risks and its deficient capacity to predict losses in illiquid products, which are difficult to mark to market, with short pricing histories; and the limitations of models to deal with options and structured products.

- Statistical models experience severe limitations when they are used outside “normal markets.” Once normal market conditions break down, then so do the models, as correlations between positions diverge from historical norms. A normal market can be defined as when market participants are merely respondents to a set of outside price processes, and their own actions have no effect on the market. Once this condition...
is broken, the models become considerably less useful. The key to this definition holding is the availability of liquidity. Hence, such limitation should be expressly addressed by firms, primarily through consideration of performance of models through stress conditions.

- Statistical models, however, remain highly useful. By imposing a structured methodology for critically thinking about risk, firms that go through the process of statistically computing their risks are forced to assess their exposures across several dimensions. In effect, the process of getting to a statistically based capital number can be extremely valuable in its own right.

- While deficiencies of internal models might lead some to argue that they should have a limited role for regulatory capital purposes, such a view does not adequately consider that several measures and controls can address such deficiencies. Without statistical models serving as a core input underpinning capital requirements, it is impossible to see how capital requirements could be imposed in such a way that they are consistently applied and appropriately related to the levels of risk.

- A thorough analysis of the functionalities and useful applications of VaR as a metric of risk shows that it is useful for both internal and external stakeholders, including regulators; within its limitations it has the advantage of applicability to almost any asset class or risk type (including individual and aggregate firm-wide risks); it is appropriately used as a tool to set portfolio limits; and its functionality as a tool to assess the evolution of risk is important.

- The implementation challenges that firms face when adopting trading-book VaR models, including the accreditation process to which firms are subject when seeking recognition of VaR models for regulatory capital purposes, need further discussion.

- The analysis includes emphasis on, and strong support for, the well-known concept of VaR plus, which recognizes that effective market risk measurement and management (and the determination of the associated market risk capital) should be based on a combination of inputs, of which VaR modeling is but one. Supplemental analysis such as stress testing, liquidity risk modeling, and broader systemic considerations (e.g., analysis of developing “crowded markets”) are essential.

- A comprehensive discussion is needed of how firms and regulators can address the limitations and deficiencies of internal models and, more generally, what firms can do to respond to the challenges brought up by the financial crisis so that they are better prepared for shock events. These include:

  - Avoidance of the use of models in isolation and the promotion of holistic approaches based on a wide range of tools, systems, and methodologies;
  - Importance of considering liquidity as a factor and the need to avoid unchecked assumptions about liquidity when developing models;
  - Need for progress on integration of legacy systems;
  - Revision of implementation approaches (in particular the governance aspects of internal models);
  - Review of technical issues such as volatility estimates (including their frequent update), improvement of the quality of data, and the need to focus on the pitfalls of the often necessary use of proxies for complex products with short or unavailable historical data;
  - Need for documentation, review, and constant challenge of the assumptions used in internal models; and
  - Comprehensive education for senior management on the use of models, with
Finally, the analysis includes an exploratory discussion of alternative approaches to internal models reflecting the efforts of firms to address the trading-book deficiencies shown by the crisis. Approaches explored include “Integrated Credit/Market Risk Models” (reflecting integrated approaches to risk, combining both market and credit risk) and a so-called “iVast” approach (effectively integrating VaR and stress testing).

New recommendations included in the analysis are as follows:

**New Recommendation E:** No risk model should be used in isolation. Different models used in risk management draw out different perspectives on “risks.” A holistic perspective on an organization’s risk profile is best achieved through the use of several models and multiple measures of risk, each drawing out different aspects of the institution’s risk profile in a given area.

**New Recommendation F:** All model assumptions should be explicitly documented, understood in terms of their materiality and implications, and subjected to an appropriate review and approval regime. Documentation and analysis also should include assumptions around the use of proxies (e.g., as data sets) in models. All assumptions should be periodically reassessed, as assumptions deemed immaterial in one market environment may evolve into critical assumptions in a different market environment (e.g., where a “crowded” market has evolved).

**New Recommendation G:** The degree of complexity chosen when developing an internal model should be subject to an open dialogue with senior management, supported, whenever necessary, by regular evaluations conducted by independent subject matter experts (i.e., internal or external resources not involved in the design or build of the model).

**New Recommendation H:** Liquidity should be considered in all areas where models are used. Liquidity is not only relevant to asset and liability management processes; it can also be an important risk dimension hidden within model assumptions. Institutions should take time to understand to what extent models make inherent presumptions about liquidity, draw out such assumptions to make them explicit, and subject such assumptions to an appropriate review and approval regime.

**New Recommendation I:** Senior management should understand how key models work, what assumptions have been made and the acceptability of these assumptions, the decisions around the degree of complexity chosen during model development, the adequacy of operational support behind the models, and the extent and frequency of independent review of the models. They should ensure that appropriate investments have been made in systems and qualified staff.

**New Recommendation J:** Senior management should ensure that the models are effectively used by management, the risk department, and key staff as “tools” for managing risk, not allowing models to substitute for the “thinking” processes required of managers. Robust and regular dialogue on the risks as seen by managers versus model outputs should be occurring; any evidence of “tick-box” dynamics arising should be treated as a cultural red flag.

4. Risk Management Across Economic Cycles

The fourth topic on which the SCI sought additional guidance was managing risk across economic cycles, which could be thought of as managing procyclicality in internal risk management. Procyclicality as discussed in the analysis attached as Appendix V refers to feedback mechanisms that amplify business-cycle fluctuations, causing firms to react to economic...
downturns beyond what is required by available credit quality, perhaps leading them to curtail lending despite ability to lend at appropriate pricing or conduct “fire sale” asset reductions at prices below fundamental values, potentially contributing to downward spirals. Managing procyclicality is especially challenging, as firms must consider, along with their own needs, the consequences of the industry’s actions and the overarching economic environment. While the Basel Committee and other policymakers are considering measures to address procyclicality, the industry is currently developing improved internal techniques to manage risk and capital across the economic cycle. Understanding of cyclical effects as a part of risk management is evolving rapidly: the attached analysis is intended to help firms think about cyclical issues as they refine their risk management and governance, to equip themselves better to manage through cycles.

The attached analysis provides a broad discussion of the problem of managing risk across cycles as seen from an internal, risk-management point of view and examines the two broad categories of approaches to risk management and capital measures, Point-in-Time and Through-the-Cycle, both of which have uses and limitations that firms need to be aware of:

- **Point-in-Time (PIT):** measures for day-to-day risk management to provide a sensitive current view of how risks are changing in response to current market and economic conditions, which can be relatively volatile.

- **Through-the-Cycle (TTC):** measures that are less sensitive to day-to-day changes in risk, for strategic risk and capital management purposes, and that more properly reflect conditions across an economic cycle, to permit orderly planning, though they may over- or underestimate the current risk in the portfolio.

While banks may use either PIT or TTC tools for operational or strategic purposes, they make a variety of adjustments to the measures in order to tailor them for additional applications and to fit their idiosyncratic business structures. For example, firms use stress scenarios with PIT to avoid overstating the upside, or, for TTC purposes, override PDs derived from long-term averages if they feel the historical sample is too benign. Most firms find they need to use some combination of these techniques, the implications of which need to be understood by managements and risk managers.

The analysis also explores the following subjects regarding how firms manage procyclicality in the internal risk-management processes:

- Planning for capital adequacy through a downturn, understanding the issues likely to be confronted to improve capital positions either by reducing risk weighted assets or raising new capital.

- Stress tests and scenario analysis as an integral part of capital plans and loss estimation. Firms should be able to quantify the effect of idiosyncratic and system-wide stresses on income, provisions, RWA, and economic and regulatory capital, as well as capital supply. Management must ensure that not only are relevant and varied scenarios used to ensure a comprehensive view of risks to capital, but also that the factor choices within the scenarios are adequate.

- Firms are also setting capital-related targets to prepare for downturns, though practices vary; some set target ranges of capital, while others have “normal” and “stressed” levels of capital, all keeping in consideration the regulatory minima in their jurisdictions.

- Improvements in governance are being implemented to ensure the durability of these changes; firms are taking steps to bring the “demand” and “supply” sides of capital—risk and finance—closer together, in some cases by establishing joint “Risk and Capital” committees. Senior management and boards must also understand how the
different measures and scenarios relate to each other as well as how they will change over the cycle.

Finally, the Working Group lays out the following New Recommendations for financial firms that focus on putting in place the proper structures and practices to allow firms to manage risk and capital in both upturns and downturns:

New Recommendation K: Institutions should continually assess their risk appetite and business activities—particularly during boom times—to ensure that they remain in line with strategic objectives and are appropriate for the current business and competitive environment. When considering their potential actions and responses to economic and market developments, both business management and risk management officers should take into account, insofar as possible, likely macrofinancial developments in the overall market environment.

New Recommendation L: Firms should examine potential exposure to cyclicality in their business models, policies, and measurement tools. This should cover all relevant risk types of the firm and include an assessment of the:

- Extent to which risk measures tend to be “point-in-time” vs. “through-the-cycle”;
- Reliance on the liquidation of positions as a response to increasing risk;
- Reliance on cyclically sensitive factors (e.g., interest rates) in the firm’s business model;
- Degree of maturity transformation in firms’ and customers’ portfolios; and
- Vulnerability to a more extreme downturn than has been observed in recent history.

New Recommendation M: Institutions should align their risk measures with their intended strategic and business objectives, balancing the need for point-in-time risk-sensitive measures for day-to-day risk management with longer-term strategic objectives for stable capital requirements. Firms should ensure that these choices are clearly communicated to all involved and that models and methodologies are consistently applied and appropriate for their use.

Banks should make conscious choices about design of risk measurement tools, deciding whether these should be relatively more sensitive to and reflective of current conditions or be more stable across the economic cycle—and thoroughly understand the consequences and vulnerabilities associated with their choice of methodologies in each case. In particular, firms should ensure that credit risk measures are sufficiently sensitive to enable the rapid detection of deteriorating counterparties for day-to-day risk management purposes while avoiding excessive reliance on PIT measures for forward-looking risk and capital assessments.

New Recommendation N: Firms should have available a set of potential measures for adjusting their actual capital structures in line with cyclical developments in capital requirements. This could include instruments such as contingent capital but should also consider the articulation and implementation of an active and flexible dividend policy and active management of share buyback programs and similar tools. A choice of tools should enable banks to balance the need to conserve capital with wider business and strategic objectives.
The capital plan should not rely excessively on assets sales or raising capital in the market as a response to adverse conditions. Along with share buybacks, contingency plans should include downside triggers, for example, when one would set aside short-term growth objectives or sales targets in incentive plans, or when one would tighten lending standards, as well as upside triggers, for example, when one would review practices to determine if lending standards were easing in response to competition or when one should review scenarios in stress testing.

**New Recommendation O:** In performing their forward-looking capital planning both for internal purposes and for Pillar 2 discussions with supervisors, firms should take into account a broad view of potential procyclicality on capital requirements and availability over appropriate medium-term horizons. Such focus on procyclical effects should incorporate the interaction of risk and accounting measures, regulatory requirements, and pending changes therein, and figure in the firm’s program of stress testing.

**New Recommendation P:** Financial institutions and their Boards of Directors and managements must exercise judgment over business, risk, and capital planning, and the related stress testing, over a planning cycle that includes future cyclical developments. Governance must consider whether the system functions appropriately through the entire cycle and ultimately should be the responsibility of the Board of Directors. It is essential that both risk and finance functions be included in the governance process to ensure that the interaction of risk and accounting with respect to balance sheet, P&L, and capital effects are properly understood and integrated in decision-making processes.

**CONCLUSION**

Risk management (understood in its broad definition, including risk governance issues) is without a doubt the central area on which financial firms have focused their gap analysis and reform efforts. While experiences vary across individual firms, it can be said that a revolution in terms of risk management practices is happening in the financial services industry. The lessons from the crisis have been radical, and the changes taking place are of the same nature. While the job is by no means is finished, the finding of the SCI is that firms across jurisdictions have put in place a fundamental revision and effective change in their risk management practices (including their risk governance, infrastructure, culture, procedures, and methodologies).

Additional work in many areas is still needed. The SCI Report aims to provide additional guidance on the key issues of risk appetite, risk culture, internal models, and the management of cyclical. The Institute encourages its members to immediately consider the applicability of such guidance to their individual circumstances.

As this chapter has outlined, the challenges are many. However, the commitment and effort demonstrated by the industry toward a step change in its risk management practices are evident. More fundamentally, evidence also exists as to the fundamental revision of the industry’s approach to robust reporting and controlling and the central role that adequate risk management is playing in firms’ day-to-day operations.
INTRODUCTION

The quality of liquidity risk management continues to be a major focus of the industry and of regulators as a result of the crisis.

The industry has responded with broad changes in the approach to liquidity risk management, including IT investments and the integration of liquidity risk considerations into overall risk management. Improvements directly address the Recommendations published by the Institute on liquidity before the crisis, and of course are building on the congruent liquidity risk management principles published by the Basel Committee in 2008, as discussed further below.

The Basel Committee currently is working on what promises to be a demanding global regulatory framework, proposals for which are expected to be published at the beginning of 2010 (discussed in the “Global Context of Liquidity Risk Management Improvements” section below). Pending the new Basel proposal, which will certainly require serious reflection and debate between the private and public sectors, the present discussion will attempt to give a sense of how much has changed since the onset of the liquidity crisis in July 2007 and to comment on issues that have come up in national liquidity regulation that will certainly affect the broader debate required once the Basel proposals are published.

The stakes of that debate are high indeed. While the Institute’s Recommendations and the Basel principles go very much in the same direction, and all indications are that firms are making rapid progress on liquidity risk management, there are important questions about further regulatory requirements. As many in the public sector have recognized, liquidity regulation has the potential to have at least as great if not greater effects on both the soundness of the banking system, on the one hand, and on its ability to provide credit and services to society, on the other, as the new regulatory capital requirements.

It also is clear that the industry as a whole understands the grave risks of business models that depend excessively on volatile providers of very short-term wholesale funding, especially if used to fund illiquid assets. In striking the balance between soundness and the impact on credit provision of future regulations, regulators need to be mindful of the substantial improvements in liquidity risk management and governance that have been achieved and that continue to be enhanced every day.

The IIF contributed to that debate even before the beginning of the crisis with its Principles of Liquidity Risk Management (Liquidity Report), published in March 2007 and updated in the July 2008 CMBP Report, issuing Recommendations for

16 As discussed further below, liquidity requirements, especially definitions of eligibility of assets for liquidity buffers, will have knock-on effects on client business that tend to be overlooked in these balancing discussions. Moreover, as also discussed, wholesale funding is not necessarily excessively risky and has an important place in banks’ client business that needs to be taken into consideration.
assessment of liquidity risk, liquidity buffers, and other risk mitigants. Many of the IIF Recommendations were echoed in the Basel Committee’s September 2008 Principles for Sound Liquidity Risk Management and Supervision.

A substantial portion of the SSG Group report Risk Management Lessons From the Global Banking Crisis of 2008 (October 21, 2009) (the “2009 SSG Report”) is devoted to liquidity risk management issues. As can be seen from the “Self Assessment Template” published as a supplement to the 2009 SSG Report, the IIF Recommendations on liquidity, as well as other topics, constituted an important part of the benchmark against which firms assessed their progress in response to the SSG’s request.

Firms have been making serious improvements in their liquidity management practices in accordance with the Recommendations and the Basel Principles, as demonstrated by the Ernst & Young Survey. The Survey and ongoing observations show that firms are focusing on enhancing substantially their liquidity risk management practices.

The 2009 SSG Report concurs that, as of the time its self-assessment was done (first quarter 2009), firms were “taking steps to improve the structure of their treasury, liquidity risk management, and related functions.” That Report recounted a new awareness of the problems that had emerged from the crisis and a determination of firms to deal with them, albeit also noting that considerable work remained to be done and noting concern that changes under way needed to be formalized into policies and procedures and proven to be effective over time. The results of the Ernst & Young Survey are congruent with the 2009 SSG Report survey, both as to areas of focus and as to the efforts that are still required to bring the industry as a whole up to high standards. On the basis of the progress on internal processes and procedures since the first quarter, the Institute is confident that, if the SSG self-assessment were to be redone today, it would certainly show substantial further progress made since the first quarter. Again, much remains to be done.

**INDUSTRY IMPROVEMENTS IN LIQUIDITY RISK MANAGEMENT**

**Greater integration of liquidity in overall business strategy.**

Ernst & Young reports that senior management has become much more involved in the liquidity risk management process, as they have realized its importance to the firm. Not only are managers seeking a more top-down, group-wide view of their liquidity position, but they also are reviewing business models in light of the changed market conditions, for example reducing reliance on wholesale funding. Liquidity risk is getting much stronger consideration in defining business strategy; the Ernst & Young Survey notes that firms are seeking to create a more ingrained culture of liquidity risk awareness across the firm.

These developments reflect the realization by firms of the need to make important changes in the way they treat liquidity in business as well as risk management processes, elevating it to the same level as credit and market risk. See, for example, Recommendations III.5 and III.6 in the CMBP Report, which call for firms to tailor their liquidity risk management to their business models through stress testing, as well as Revised and Restated Recommendation 26 of the CMBP Report, which states that firms should assess asset liquidity based on demonstrated ability to attain liquidity, with appropriate “haircuts” in times of stress. Only by testing access to lending facilities, asset markets, and repo markets in both normal, firm-specific stresses and system-wide stresses can firms know the true cost of funding for a business line. Increased collateral requirements from lenders as a result of the assumption that

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the borrowing firm is weakening, or as a result of a downgrade, also must be considered.

Improvement of internal transfer pricing for liquidity is rightly a principal concern of the SSG, as well as a focus of financial firms according to the Ernst & Young Survey. It is now recognized that business units need to be charged appropriately for their liquidity risk; but until the crisis many firms did not have adequate systems or processes for assessing liquidity charges internally or had underpriced liquidity reflecting the general environment—they had in retrospect underestimated liquidity risks. Correctly pricing the transfer of liquidity within a firm is essential for liquidity management and was one of the principal Recommendations of the CMBP Report.

The Institute’s perception is that the need for appropriate internal pricing of liquidity will be a permanent lesson learned from the crisis, one that will be reinforced by the substantial upgrading of the role of liquidity risk managers in firms and by changes of culture that will institutionalize understanding of the need for appropriate pricing even after the passage of time.

**Significant investments to strengthen liquidity risk management.**

The Ernst & Young Survey shows that significant IT investment is needed to achieve the necessary changes in liquidity risk management. Firms have noted that a higher demand for liquidity risk staff now exists and that more people within banks are assigned to liquidity-related roles than before. Ernst & Young found that firms are planning investments in IT systems to improve risk aggregation and data quality as they have begun to realize the value of having better tools to manage risk and allocate costs.

IT investments require substantial amounts of funding and time to design, integrate into existing IT systems, test, and implement; they also require specialized IT and risk personnel, who often are in short supply. Thus the SSG has frequently repeated concerns that the pace and amount of investment in IT for liquidity risk and other risk management purposes may be a source of concern. On the basis of the information available, however, the Committee would be substantially more optimistic than the SSG seems to be about the commitment of the industry to making those investments, especially in liquidity risk management, and believes that there is no doubt that IT support for liquidity management will be much more robust once the present round of IT development is completed.

**Involvement of senior management and Boards in liquidity risk management.**

The Ernst & Young Survey observes that “enhanced Board reporting and Board approval” is being sought and developed regarding the liquidity positions of firms, in line with the Revised and Restated Recommendation 3 of the CMBP Report that a Board should “approve the strategy and significant policies related to the management of funding liquidity risk under both normal and stressed conditions and... be informed regularly of the [firm’s] funding position.” Boards also are pushing for gap analysis of liquidity practices and demanding progress reports on how firms are improving their liquidity risk management and related contingency planning.

In the CMBP Report, the Institute recommended that “firms should ensure that funding and liquidity risk management practices are incorporated within a firm-wide, integrated risk management framework that also includes market, credit, operational, and other appropriate risks.” Such a move to strengthen the governance of liquidity ensures that senior management has an awareness of liquidity risk as part of its broader risk management processes.

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19 See Recommendation III.4.
20 See Revised and Restated Recommendation 7 of Appendix B.
Both the SSG\textsuperscript{21} and the \textit{Ernst \& Young Survey} confirm that firms have begun to “change governance structures to give group risk a greater involvement in liquidity risk.” These shifts in the organization of firms are part of an evolutionary process to establish a management structure that can effectively manage liquidity risk, which will necessarily take time and effort to implement completely. However, it is readily apparent that firms are learning from the crisis and continuing to put in place the arrangements endorsed by the \textit{CMBP Report}.

Building up reserves, or “buffers,” of liquid assets also has been a priority for financial firms since the crisis, as it was apparent that many firms did not have the supply of assets required to make it through periods of stress, in part because certain assets turned out to be much less liquid than anticipated on the basis of prior experience. The Institute acknowledged the importance of these buffers in Commitment XII of the \textit{Restoring Confidence Report}. The SSG confirms that the crisis “underscored for many firms the importance of holding sizable unencumbered liquidity pools.”\textsuperscript{22} When asked how firms are adhering to the IIF Recommendation to develop policies to determine the size of a liquid asset portfolio,\textsuperscript{23} firms confirmed that their “improved risk assessments are being used to drive larger liquidity buffers.”

However, these efforts to build up reserves of liquid assets will take time considering the necessity of financial firms across the globe to strengthen their balance sheets and the need to avoid potentially market-disrupting changes of assets in inventory. Capital planning in anticipation of new mandates for increased capital also will affect the ability of many firms to construct additional buffers to protect from another pullback of liquidity. In spite of these challenges, Federal Reserve Chairman Ben Bernanke has acknowledged that “large banking organizations have, for the most part, already significantly increased their liquidity buffers and are strengthening their management of liquidity risk.”\textsuperscript{24}

\textbf{Recent experience has improved the liquidity risk management process.}

Another effect of the recent crisis is that liquidity risk managers know a lot more about the instruments they hold and the markets in which they are operating. The liquidity of certain structures and instruments is now known to fluctuate much more than previously anticipated, and firms have realized that a short sample history is not enough to understand fully how a given instrument will perform. The \textit{Ernst \& Young Survey} notes, however, that the industry recognizes that “modeling and monitoring will require better data than is available at some banks.” The \textit{CMBP Report} liquidity Recommendations and related discussion repeatedly emphasize the importance of understanding the instruments used by various business lines, most emphatically in Revised and Restated Recommendations B1–B15.

Both the 2009 \textit{SSG Report} and the \textit{Ernst \& Young Survey} show how the industry acknowledges previous shortcomings in stress testing and its use in liquidity risk management and are putting in “a great deal of effort on modeling liquidity under different scenarios.” The 2009 \textit{SSG Report} notes that firms “have recognized the need to move beyond traditional stress tests involving deteriorating credit quality, rating downgrades, and/or historically based scenarios and to look increasingly at hypothetical situations that are more systemic in nature and longer in duration.”\textsuperscript{25} Stress testing a firm’s liquidity position using market-related events instead of just firm-specific ones is a recurring

\begin{flushright}
\textsuperscript{22} See 2009 \textit{SSG Report}, p. 15.  \\
\textsuperscript{23} See Revised and Restated Recommendation 41.  \\
\textsuperscript{24} Speech to Federal Reserve Bank of Boston, 54th Economic Conference, Chatham, Massachusetts (October 23, 2009).  \\
\end{flushright}
theme in the IIF’s Recommendations, appearing in Recommendation III.5 as well as in Revised and Restated Recommendation 31 of the CMBP Report. Reevaluating and retesting the metrics and assumptions used is another way in which industry members have begun to strengthen their liquidity risk management process and adhere to the CMBP Report. Implementing these changes has been a challenge, as data limitations and lack of historical precedents make some scenarios hard to model accurately; but as firms continue to make heavy investments in their liquidity management practices, these limitations will diminish.

Improvements in the management of other risks (e.g., credit, market) associated with various businesses and products will tend to contribute to the reduction in the level of liquidity risk as well.

The recent crisis also has caused firms to rethink their contingency planning, particularly with respect to liquidity. Revised and Restated Recommendations 35–38 of the CMBP Report offer detailed information on how firms should put in place these contingency plans, calling for plans that address warning signs of a coming crisis, that are changed according to evolving market conditions, and that are tested for their effectiveness. The Ernst & Young Survey shows that banks have begun pursuing more varied liquidity scenario analysis to assess the potential magnitude of liquidity risk. The increased role of Boards in liquidity risk decision making will ensure that firms’ survival plans are in the best interest of shareholders.

Improvement of liquidity metrics.
The previous observations are based on discussions with a wide range of industry participants who had different experiences during the crisis and are reacting in their own ways to improve their liquidity management. There also is concrete, tangible evidence that firms have improved their liquidity profiles since the crisis began in 2007 and that they continue to do so. Deposit funding at US and EU banks—the ratio of deposits to total assets—has increased markedly since 2007.26 UK banks’ holdings of liquid sterling assets are the highest level of the decade.27 US banks have seen a sharp increase of holdings of liquid assets after seeing a steady decrease since 2003.28 All of these metrics show concrete improvement in the liquidity position of the banking system.

Industry commitment shown in the IIF Restoring Confidence Report.
Another example of how firms are dedicated to improving liquidity management is found in the recent IIF Restoring Confidence Report, in which firms committed to “exploring ways in which firms could organize their cross-border business to reduce the concerns of authorities that individual jurisdictions would suffer disproportionate loss in the event of an insolvency.”29 After experiences such as the failures of Lehman Brothers and the Icelandic banks, supervisors are wary of foreign operations and how host countries’ creditors and depositors will be treated in the event of a failure. The industry is now working on methods to ensure that firm structures avoid these hazards so that there will be equal treatment across jurisdictions. This issue has been a concern of the IIF since 2007, when in the Liquidity Report it was stated that “under a centralized structure, firms need to be particularly diligent in ensuring that all local regulatory requirements are met and that due process is followed before funding lines are arranged between group entities (head office, branches, and subsidiaries).”30

26 FDIC Quarterly Banking Profile, August 2009; European Central Bank, balance sheet of Euro area monetary financial institutions, August 2009.
29 See Commitment XI.
30 See pp. 23–24.
GLOBAL CONTEXT OF LIQUIDITY RISK MANAGEMENT IMPROVEMENTS

While the industry has made significant strides in the right direction on liquidity management practices, disparate or uncoordinated regulatory initiatives could have the unintended consequence of diluting the effectiveness of firms’ group-wide liquidity risk management. The SSG recognizes in its 2009 report the importance of firms having a comprehensive view of their liquidity management needs and the benefits of moving toward more centralized models to understand and address funding and liquidity needs, of course with equal recognition of the need to take into account local requirements and legal-entity structures. While there is a good deal that firms need to do (and are doing) to get firm control of liquidity needs in complex organizations (see Revised and Restated Recommendations 3, 9, 10, and 19 of the CMBP Report), some current regulatory developments will make this harder, not easier.

National policies that force groups to hold large buffers of liquid assets at the branch or subsidiary level, so-called “trapped pools of liquidity,” were a concern in 2007 and are all the more so today. Past IIF reports acknowledge that firms must manage to local requirements and needs. The Institute’s Restoring Confidence Report also committed to ensure local liquidity needs can be met. Firms may organize their liquidity management on more centralized or more decentralized models, depending on many things, including business strategy, but the fact remains that policies that create unnecessary barriers to movement of liquidity within groups will be harmful to the overall system as well as to the flexibility and efficiency of the uses of liquidity within each group.

The efficiency of a global system will be enhanced if:

- Local requirements are kept to the minimum reasonably necessary to protect local interests and
- International operating requirements and central bank collateral criteria are harmonized as much as possible.

It is important that firms be able to deploy liquidity resources when and where needed in a global system.

Large groups operate internal “markets” that contribute to managing global liquidity, including in stressed conditions. Any approach that maximizes local requirements without international coordination will reduce global liquidity and impede rather than facilitate recovery, as well as “often hinder rather than help resolve a problem in a cross-border group,” as the European Commission has recognized in its report An EU Framework for Cross-Border Crisis Management in the Banking Sector. For many firms in this recent crisis, centralized models were a recognized source of strength not weakness, even if, admittedly, the same model caused material issues in other firms that could, with hindsight, have been better addressed. The

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31 See 2009 SSG Report, p. 13
32 See Commitment X.

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question remains open whether those weaknesses would have been better addressed by other regulatory and supervisory means than liquidity regulation.

In addition to continuing concern about “self-sufficiency” requirements that would lessen global liquidity and the ability of banks to respond efficiently and quickly to evolving liquidity conditions around the world, there are rising concerns about the details of proposed requirements for “liquidity buffers,” especially the assets required for such buffers. To be clear, there is no dispute that robust liquidity buffers are a necessity and that many firms could have done much better at building buffers of truly liquid assets.35

The September 2009 FSB’s Improving Financial Regulation Report of September 25, 2009, summarized current official-sector thinking on liquidity buffers in a few words:

The Basel Committee will issue by the end of 2009 a new minimum global liquidity standard. This new regulatory framework introduces a liquidity coverage ratio that can be applied in a cross-border setting. It establishes a harmonized framework to ensure that global banks have sufficient high-quality liquid assets to withstand a stressed funding scenario specified by supervisors.

While the industry must await the detailed proposals of the Basel Committee, there are at least two areas of concern that need to be reiterated.

This is not to criticize the concept of liquidity buffers as such. Past IIF work is conceptually consistent with the G-20 and FSB view that banks should build up robust liquidity buffers to be able to survive stressed conditions in the markets. As already detailed, IIF work also has emphasized, since before the crisis, the need for rigorous stress testing and the avoidance of unduly optimistic assumptions about assets that can be used for buffer purposes. However, the following two points are essential.

**Limiting asset eligibility for buffer purposes could have adverse effects.**

The first concern arising from current discussions focuses on the critical issue of assets eligible to be counted for buffer purposes. A range of opinion exists within the official sector about eligible assets.

It is the view of the industry that, for at least the portion of the buffer meant to guard against short-term liquidity stress, a **wide range of central bank–eligible assets should qualify.** While the IIF fully acknowledges that the first line of defense in either a firm-specific or system-wide crisis is not the central bank, central bank–eligible assets will generally have the ability to generate cash by sale, repo, or other use as collateral in the market. Limiting the eligible assets to a narrow range of government debt, as some regimes aim to do, could have serious adverse effects.

Restrictive definitions of eligible assets work against industry efforts to diversify assets held for liquidity purposes, following the practice guidance the IIF put forward in Recommendation III.2. A too-narrow definition will inevitably increase concentration in certain assets, increasing the chance that they will become relatively less liquid or even substantially illiquid, in difficult market circumstances or if a downgrade disqualifies an asset from eligibility. This concentration may occur both at the single-institution level and the system level. In addition, recent concerns about the ratings and credit quality of public debt in many countries counsels caution on encouraging policies that would result in very great concentrations in a limited suite of assets, even if the concerns about public debt should not be overstated.

It is important to realize that any liquid assets that are not considered eligible for the buffer (i.e.,

part of the solution to a sudden need for funds) become automatically part of the problem and need to be considered as illiquid for the prescribed survival period. Not being able to include them in eligible assets (i.e., having to fund ineligible assets as well) will result in higher funding costs that need to be passed on to the issuers of such assets.

There also needs to be a distinction, as the Committee of European Banking Supervisors (CEBS) has recognized, between liquid asset buffers to enable firms to survive very short-term stresses and assets that will help ensure that a firm can adjust to changed conditions over a longer survival period (CEBS suggested minimum 1-week and 1-month periods, respectively).\(^{36}\) Whereas buffer assets to ensure that obligations can be met for the shorter period need to be of the most immediately available types, it is appropriate to consider a wider range of assets for the longer periods, which afford time to marshal assets and plan liquidation if need be. Central bank eligibility is important for determining assets eligible for buffers, especially for the shorter period.\(^{37}\) For the longer term, market liquid assets often should be considered eligible, depending on the nature and depth of the market, the firm’s role in the market, and the availability of dependable deposit or other client funding. The eligibility of a particular class of liquid asset for a buffer should not be binary (i.e., in or out). To be risk-based, consideration should be given to providing various types of liquid assets different haircuts and different time values spread out over a time continuum (e.g., X% in Week 1, Y% in Week 2).\(^{38}\)

A broader definition would allow firms to diversify their holdings, which would help markets avoid a downward price spiral as firms sell non-eligible assets out of their portfolios. It also would reduce the possible distortions and secondary-market effects that a very narrow definition would have.

If high-quality corporate bonds do not qualify, even for the longer horizons, banks will reduce their purchases, and corporate issuers may have reduced financing options. There is a paradox in that increased capital and leverage, as well as liquidity requirements (and restrictions on securitization) may make bank lending tighter and induce corporate borrowers to finance in the public markets, but a reduction of demand in those markets from the banking sector as a whole because of narrow liquidity requirements could lessen the depth of those markets, thereby limiting borrowers’ access to both bank finance and public markets.

In the same vein, it should not be forgotten that treasury departments of banks are significant buyers of obligations of other financial institutions. Inclusion or exclusion of assets such as US agency obligations also may have a significant effect on relevant markets. Assuming that bank paper does not qualify as eligible assets, there would be reduced demand, and banks would find it more difficult to fund new loans to real-economy borrowers. Any reduction in appetite for bank obligations would affect pricing all the way up the chain.

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\(^{37}\) As the IIF reports published in 2007 (Principles of Liquidity Management), 2008 (CMBP), and 2009 (Restoring Confidence) have all discussed, the central banks will need to determine what assets are eligible as collateral for their programs and which not. Some of the extraordinary measures taken by central banks will need to be rolled back, but the IIF reports argue for a broader, more consistent definition of eligible collateral and greater interoperability of collateral than before the crisis. While there may be some assets that are central bank eligible that would properly be excluded from eligibility for liquidity buffers, there should be a strong presumption that central bank eligible instruments should count toward buffers, unless there is a very good, well-understood, and clearly articulated reason for the exclusion. This topic is discussed further in Subsection 3.6 of the Restoring Confidence, Creating Resilience Report; Subsection III.C of the CMBP Report; and in the “Considerations for the Official Sector” of the IIF Principles of Liquidity Risk Management.

\(^{38}\) This system is already in place in the Netherlands; see Article 4 of De Nederlansche Bank Supervisory Regulation on Liquidity.
In addition, as already indicated, liquidity requirements that have the effect of reducing overall market demand for bank obligations would create a distinct obstacle to banks’ diversifying and lengthening their funding profiles, which is a primary goal of the Basel Principles.

Further, the market will be responding not only to new liquidity requirements on banks but also to the effects of new liquidity requirements on money market funds (and equivalents) on the market for bank paper. Moreover, the more demanding and narrowly defined the new liquidity buffer requirements are, the stronger will be the impact of their interaction with the new leverage ratio, again depending on its final design and calibration.

To reiterate the related consideration stated above, supervisors and the industry must avoid heavy concentration in a small class of assets to prevent a liquidity crisis from becoming a broader crisis in the market. Permitting a broader range of assets will allow firms to create a portfolio that reflects the nature of their business environments and range of products, as well as allow them to change the makeup of the buffer in response to changes in the internal or external environment, as stated in Revised and Restated Recommendation 17 of the CMBP Report.

The conclusion is, of course, not that bank or corporate paper should be freely counted in liquidity buffers regardless of its characteristics; however, the aforementioned market effects and their likely impact on achieving the goals of liquidity regulation suggest that thoughtful consideration ought to be given to the role of various assets for purposes of longer survival periods, to the possibility of including increasing proportions of varied assets as maturities lengthen, and to the possibility of allowing bank paper to count more liberally in the short as well as longer buffers of smaller institutions. Moreover, whereas highly liquid, central bank–eligible assets are clearly the best “insurance” against systemic events (as discussed below), other, private-sector liquid assets often will be perfectly reasonable buffer assets against idiosyncratic risks.

**It is difficult to design a one-size-fits-all liquidity metric that will be meaningful across all firms.**

The second concern suggested by the high-level FSB/G-20 concept quoted above is that, as the Liquidity Report already has stressed, it is very difficult to design a one-size-fits-all liquidity metric that will be meaningful across all firms. Every firm has a unique exposure to different markets and businesses, so to place a mechanistic structure on top of that, especially if underpinned by common assumptions where they may not be justified, can only lead to missed and misunderstood risks.

Avoiding a blanket measure of liquidity is especially important in the context of firms with insurance business. In contrast to banks, insurers generally do not rely on short-term funding as part of their business model. Compared to banks the insurance production cycle is inverted—insurance companies are funded through advanced premium payments and policyholders cannot easily and freely withdraw money from insurance companies at will. In addition, insurers are not usually leveraged in the same way as banks are. It is therefore extremely important that liquidity risk regulation be well differentiated to accommodate the structural differences in business models.

**For liquidity risk supervision to be effective, liquidity risk is best understood through an evaluation of firms’ individual liquidity positions and risk management practices.**

Supervision should be tailored to each firm’s business model, capabilities, and capacities and also the extent to which it participates in liquidity-dependent securitized markets.

These liquidity metrics will depend in part on the type of funding available to each bank. Recommendation III.5 and the discussion at Subsection 3.6 of the Restoring Confidence Report address this critical funding issue. In addition,
it often will be the trend of evolution of any given metric that is significant, more so than the absolute reading it gives at any point in time.

Discussions of what is considered stable core funding often focus primarily or exclusively on “retail” deposits. As the Restoring Confidence Report stressed, the assumption that retail deposits (however defined) are the most “sticky” may obscure the fact that “relationship deposits” such as corporate and institutional wholesale deposits can be more stable than less-reliable forms of retail deposits (e.g., brokered and “teaser-rate” deposits).

Any rule requiring reliance on retail deposit funding would introduce new challenges and distort the market as firms compete for deposits, possibly making them less stable than other kinds of funding. The G-20 language quoted above suggests that regulatory proposals will in addition address mismatch issues. This may be appropriate, and many of the IIF Recommendations cover management of mismatches. The difficulty of any such regulations will be to achieve appropriate balance between improved liquidity risk management (as already mandated by the Basel Principles) with a reasonable approach to mismatch, with an eye on the banking system’s ability to generate credit for society efficiently, as well as on resiliency, recognizing that a well-managed liquidity mismatch has been the essential basis of banking for hundreds of years.

The tendency to deprecate wholesale funding is understandable given recent experience. But drawing conclusions only from that experience will be misleading and probably result in unintended consequences. Banks make use of wholesale funding for their own purposes of course, but much wholesale activity is driven by a need to serve clients that need very liquid assets for their own purposes. Very conservative liquidity regulations and eligible-assets require-ments will make it more difficult to provide those kinds of liability-driven facilities (which should be distinguished from aggressive use of volatile wholesale funding of illiquid assets of the type seen right before the crisis). Where such client-related activity involves a bank’s acquiring ineligible assets, and hence to purchase eligible assets for buffers, the bank’s appetite to provide such facilities is likely to go down, and the cost to the client to go up. Moreover, even if the bank might prefer simply to turn the short-term business away, the client in turn may make it a condition of other business, including providing, for example, two-year deposit funding that the bank seeks to lengthen its overall liquidity profile in accordance with its own liquidity preferences and regulatory demands.

Achieving that balance will require important policy decisions as well as consideration of a host of practical problems. While it is appropriate for banks to “have sufficient high-quality liquid assets to withstand a stressed scenario” as the language cited above says, there is a very serious issue of how much systemic stress a bank should have to withstand. While the IIF Recommendations make clear that banks must factor the severity and nature of a crisis into their liquidity planning, it is by no means obvious how far they need to go in providing for future systemic crises that are, by definition, beyond their individual control (as distinguished from planning for idiosyncratic risk, with respect to which firms must base plans on their own resources and not count on lender-of-last-resort salvation). Liquidity buffers are in effect a kind of insurance, and a costly one at that.

While it is expected that supervisors will demand more insurance than in the past, and while many of the extraordinary facilities provided by central banks during the crisis need to be rolled back, too much investment in such “insurance” will necessarily have a cost in banks’ lending capacity and the broader economy for

39 See Revised and Restated Recommendations 17, 19, 21, A3, and A4.

40 See Revised and Restated Recommendation 42.
many years to come. As Chairman Bernanke said recently, “… liquidity risk management at the level of the firm, no matter how carefully done, can never fully protect against systemic events. In a sufficiently severe panic, funding problems will almost certainly arise and are likely to spread in unexpected ways. Only central banks are well positioned to offset the ensuing sharp decline in liquidity and credit provision by the private sector. They must be prepared to do so.”

For these reasons, the IIF will continue to advocate very careful attention by the FSB and central banks to definition of a “new normal” of central bank activity in the markets, including more common acceptance of a somewhat broader scope of collateral than was the case before 2007, with more interoperability of collateral across systems.

Supervisors also must consider that hastily implementing these liquidity-buffer requirements when term funding is limited and very expensive may compound market, profitability, and investor confidence issues. Recovery from this situation will be slowed to the extent that demand for bank paper is impaired by new regulatory considerations. If firms must significantly increase their holdings of eligible assets over a short period of time, this will restrict firms’ ability to fund new loans, slowing a broader economic recovery.

In addition, to urge banks to change the asset makeup of their liquidity buffer over a short period of time would cause serious market turmoil if they are required to sell ineligible assets to buy eligible ones. Any new requirements need to be carefully phased in, with supervisors staying in continuous dialogue with individual firms to monitor the effects of implementation.

The prior IIF work discussed here focused on making Recommendations on funding and liquidity risk management of financial firms themselves. While the Institute will continue to consider those issues, current work now addresses several issues thrown up by the crisis and addressed at some length by the 2009 SSG Report, including issues of the use of collateral by the private sector (including in repo and securities-lending transactions) and related infrastructure issues that are important to defining a more stable future system.

CONCLUSION

Firms have made great strides on liquidity risk management, and the new focus on liquidity risk by both firms and supervisors will be a permanent legacy of a traumatic period. Of course, firms still have work to do in completing systems changes and the like, and the building of buffers will continue as the system recovers and as central banks define new collateral and other policies.

As has been discussed, robust private- and public-sector principles have been developed and are well on the way to implementation, as both the Institute’s review and the 2009 SSG Report have indicated.

At this writing, however, there are major open questions about the direction of regulation, some of which have been mentioned briefly in this discussion. This discussion has touched on several dilemmas and possible unintended consequences that could arise from new liquidity requirements to one degree or another, depending on their final design. Final definition

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42 The Institute’s review and the 2009 SSG Report have indicated.
of the new regulatory regime may potentially have wide effects on markets, on liquidity, and on the services regulated firms can provide to the larger economy. Assessment of the cumulative effects on liquidity of all the accounting, leverage, capital, and other regulatory changes, as well as specifically liquidity changes, taking place in the major markets will be critical. The Institute is sensitive to the considerations on both sides of the soundness vs. efficiency dilemma and respects the fact that the Basel Committee and others in the official sector plan impact assessment in 2010. The main point is that the cumulative effect of all changes, including the liquidity-specific changes discussed here, however difficult to estimate, will need to be considered carefully to get those balances right.

The IIF stands ready to work with the official sector to reduce system-wide and individual-firm liquidity risk and will seek to embed proportional, risk-based methods to achieve these ends. The Institute also applauds the efforts of regulators, such as the FSB’s goal of “strengthening the infrastructure of the foreign exchange swaps market and other aspects of funding liquidity markets,”44 which will make liquidity risk management easier for firms. The Institute’s current work on infrastructure problems is intended to dovetail with such efforts. Only through these comprehensive measures can the industry and supervisors be sure to prevent a crisis similar to what has affected the industry over the past two years.

44 FSB, Improving Financial Regulation, paragraph 23.
INTRODUCTION

Crisis-related valuation issues affected the ability of firms and users of financial statements to assess reliable fair-value information for illiquid financial instruments, collectively undermining the quality of reported information. Significant concerns were raised regarding the challenges of how best to capture fair-value information for financial instruments that have become illiquid or when occurring transactions may not have actually represented fair value (i.e., distressed transactions). Many of these issues were addressed in Part IV and (with respect to disclosures) Part VI of the CMBP Report, primarily from a risk management point of view. They include a comprehensive suite of Principles and Recommendations on management and governance of valuation within firms and on improving industry infrastructure.

When the Committee reviewed the Recommendations, it found them to be comprehensive and certainly still valid, thus not requiring extensive updating. However, subsequent concerns have focused on thorny valuation questions that arose during the crisis from an accounting perspective.

Financial institutions have been working to improve valuation in accordance with those Recommendations, notably to extend their sources of valuation inputs including utilization of pricing services and other sources, especially for assets carried at fair value. Firms are streamlining valuation systems and technology platforms for financial instruments of similar characteristics, thereby enhancing the consistency of the valuation process. Further valuation reporting frameworks are being enhanced and, where needed, formalized, and independent price verification control is receiving elevated importance, with improved communication of the results of valuation practices to those charged with governance and managing risk.

This discussion reviews some of the points covered by the Recommendations and covers briefly some of the complex, ongoing developments in the accounting sphere.

The market-wide concerns over the quality of the valuation accounting process were covered in the US Securities and Exchange Commission (SEC) December 2008 report on Study on Mark-To-Market Accounting (SEC Study), which recommended that “fair-value requirements should be improved through development of application and best practices guidance for determining fair value in illiquid or inactive markets.”

Since publication of the CMBP Report and consistently with the call for dialogue on the very basic issues raised by the crisis, the industry has been actively engaged with the official sector in the development of principles for prudent application of valuation methodologies and the expansion of guidance on the use of all available data that is based on the nature of transactions as well as broad market information.

The IIF, in discussions with the FSB and accounting standard setters, observed, as have many market participants, that undue emphasis and reliance on the so-called “last traded price” valuation approach have led to insufficient consideration of instrument-specific valuation adjustments or alternative valuation techniques. Indeed, many financial institutions found that the price discovery process—based on observable market data—had become too difficult to implement in the midst of the financial crisis, forcing them to enhance or develop alternative valuation processes on an accelerated basis. Since that time, as market-based information became less accessible and more subjective, firms also have substantially increased the overall involvement of the risk control function in the valuation process.

The CMBP Report included some important Considerations for the Official Sector in addition to Principles and Recommendations for the industry on these themes:

- The need for guidance on migration of securities from liquid to illiquid markets and the implication to the measurement and valuation methodology (Consideration IV.B);
- The need to identify and incorporate sources of uncertainty into the valuation approach, including instrument-specific valuation adjustments (Considerations IV.E and IV.F); and
- The need to enhance transparency and disclosures of valuation methodologies, including changes to valuation approaches and sensitivity analysis (Principles IV.iii and VI.v; Recommendations IV.12, VI.6–VI.9).

Since the publication of the CMBP Report in July 2008, significant developments have occurred in valuation, measurement, and reporting of financial instruments.

**EFFORTS TO IMPROVE VALUATION METHODOLOGIES, STANDARDS, AND DISCLOSURES**

A perceived lack of clarity in valuation standards and application of the standards under strained market conditions contributed to divergence in industry practices. As liquidity dried up, many firms have found it difficult to obtain current market information; this was especially apparent for structured products. Price discovery processes often did not have pre-established secondary alternatives, and firms were required to institute alternative valuation techniques in the midst of the crisis.

Subsequently, firms have been actively engaging in addressing valuation process deficiencies highlighted by the crisis, consistently with the Recommendations. Financial institutions also have been working to extend their sources of valuation inputs and the utilization of pricing services and other sources, including broker quotes. In addition, firms are in the process of streamlining valuation systems and technology platforms for financial instruments of similar characteristics, thereby enhancing the consistency of the valuation process.

As reported in the Ernst & Young Survey, valuation reporting frameworks are being formalized, with more focus on the independent price verification control function and increased governance. Furthermore, there has been a marked increase in the involvement of senior management—including the CFO and CRO functions—in the valuation and reporting process. These steps are in line with the Recommendations in Section IV.A and Section VI.B of the CMBP Report, and progress is under way.

In the official sector, accounting standard-setters have responded by clarifying existing guidance and, in some instances, developing new standards. At the same time, prudential regulators provided supervisory guidance on fair-value measurements to assist banking supervisors in their assessment of banking institutions’ valuation
practices. Similarly, auditing standard setters addressed audit-related considerations.

Overall, these regulatory responses were largely consistent with the Considerations for the Official Sector of Section IV of the CMBP Report and were therefore broadly embraced by the industry. For example, Consideration IV.B of the CMBP Report called for accounting standard-setters to provide additional guidance on the valuation of financial instruments when markets are no longer active and on what constitutes a distressed sale. This has been addressed by both the US Financial Accounting Standards Board (FASB), as well as the International Accounting Standards Board (IASB), in recent standard-setting publications. For auditing matters, Consideration IV.D called for audit standard-setters to provide clear guidance on how to audit fair-value information that is based on indirect inputs or valuation models. Both the US Public Company Accounting Oversight Board (PCAOB) and the International Auditing and Assurance Standards Board (IAASB) issued Staff Audit Practice Alerts to assist auditors in their evaluation of fair-value estimates during the financial crisis.

Furthermore, the international accounting standard setter—the IASB—formed an Expert Advisory Panel (EAP) to develop practical guidance on valuation of financial instruments and enhance the disclosure framework for fair-value measurements. Valuation experts from the financial industry were actively involved in the deliberations of the EAP and contributed significantly to the issuance of the EAP report Measuring and Disclosing the Fair Value of Financial Instruments in Markets That Are No Longer Active. That report—strongly embraced by preparers, auditors, and users of financial statements—elaborated on the need to:

- Exercise judgment in identifying forced and distressed transactions;
- Make appropriate valuation adjustments to observed market prices when applying a market-based valuation approach;
- Evaluate all available and relevant market information;
- Choose the appropriate valuation framework, including the choice between market-based or model-based valuation approaches; and
- Provide enhanced disclosures about financial instruments that are mostly affected by illiquidity, including changes in valuation methodologies and sensitivity of subjective valuation inputs to changes in assumptions.

In the United States the FASB also has responded directly to the recommendations made in the Securities and Exchange Commission Study—which were consistent with the Considerations of the CMBP Report—on much-needed improvements to accounting guidance on valuation practices in inactive markets. For firms that follow US Generally Accepted Accounting Principles (GAAP), the FASB issued new interpretive guidance to assist issuers in the determination of market- and transaction-related factors that should be considered in evaluating inputs into a fair-value measurement. Firms contributed valuable input as part of the due process in developing this improved guidance.

These new requirements, along with similar proposals in International Financial Reporting Standards (IFRS), effectively codified improvements in application of valuation principles into the accounting framework. From now on, these principles will be used by all financial institutions and help alleviate some of the crisis-related valuation concerns. Overall, these developments were well received by the industry. It highlighted the critical importance of the use of management judgment in valuation practices and the need to avoid mechanistic applications of mark to market.

On the prudential regulatory front, the Basel Committee on Banking Supervision (BCBS) issued its *Supervisory Guidance for Assessing Banks’ Financial Instrument Fair Value Practices* in April 2009. The report provides additional guidance to banks and bank supervisors on the assessment of valuation practices. It sets out numerous principles that establish an overarching framework for governance, reporting, risk management, and supervisory review of valuation processes established by firms.

The supervisory guidance is consistent with the Recommendations on valuation and governance made in the *CMBP Report*. Further, the direction of development shown in the *Ernst & Young Survey* supports the view that the industry is moving very much in the right direction. As mentioned, firms are now investing in improving the involvement of risk departments in assessing valuation methodologies to improve the overall governance over the valuation process. The BCBS report further establishes an apparatus for effective dialogue between firms and the prudential regulators on valuation-related matters.

On the auditing front, enhanced guidance on enforcement and auditing fair-value estimates have been provided by audit standard setters in late 2008 and early 2009. The IAASB issued a *Staff Audit Practice Alert* on the *Challenges in Auditing Fair Value Accounting Estimates in the Current Market Environment*, and the US audit profession regulator—the PCAOB—issued *Staff Audit Practice Alert No. 3* and *Staff Audit Practice Alert No. 4* addressing auditor considerations regarding fair-value measurements. These publications provide assistance to auditors in their assessment of fair-value measurements in light of the financial crisis and, as mentioned, are consistent with the Recommendations of the *CMBP Report*.

Finally, on a related issue of provisioning and valuation of non-fair-value financial instruments, firms currently are engaged in a dialogue with the accounting boards in developing a robust expected-loss or similar provisioning model for loan instruments. The goal is to achieve a more timely recognition of credit losses in loan portfolios. The forthcoming *Expert Advisory Panel* dialogue on provisioning—which the industry intends to contribute to actively—will deliberate operational issues and implementation challenges of a more forward-looking credit provisioning model.

**FURTHER DEVELOPMENT NEEDED**

**Incorporating measurement uncertainties into the valuation framework.**

To facilitate a consistent application of valuation methodologies across firms, markets, and transactions, more work is required by both the industry and the standard setters on the reflection of measurement uncertainties and valuation adjustments in the valuation process, as suggested by Recommendation VI.v of the *CMBP Report* and related Recommendations. Principle-based guidance on the use of risk adjustments for various factors should be codified in valuation-related standards and provide financial statement preparers with full scope for applying the necessary judgment. In this area as in all other areas of valuation accounting, close coordination among major standard-setting bodies is required for fully transparent implementation so as to ensure international consistency.

The IASB EAP report provided examples of key valuation adjustments that should be considered by firms, including model adjustments for known imperfections (e.g., failed model calibrations), liquidity adjustments based on instrument or market characteristics, counterparty credit adjustments (including collateral considerations), and input or parameter adjust-
ments that depend on the subjective nature of valuation inputs used. Further involvement of the EAP in exploring how to properly incorporate measurement uncertainties into the valuation framework may prove valuable and beneficial to the standard-setting process.

The IIF highlighted this important issue to the international accounting standard setters as part of the deliberations of the project on fair-value measurements. Specifically, the IIF commented that the standard should incorporate a principles-based approach to the appropriate use of valuation adjustments in fair-value measurements that utilize pricing models. It is important to highlight the lack of clarity in the current IASB proposals regarding recognition and measurement of valuation adjustments (e.g., block discounts for Level 2 or 3 financial instruments); this is a significant concern for the industry given that such adjustments are embedded in current valuation methodologies. This also is an issue of comparability of fair-value standards between major jurisdictions. Risk adjustments to valuation techniques are an integral part of reporting and disclosing relevant valuation information about risk exposures of financial instruments.

That more should be done to reflect valuation adjustments in the accounting framework appropriately was highlighted in the Basel Committee’s Guiding Principles for the Replacement of IAS 39, in which the Committee has stated that valuation standards “should provide for valuation adjustments … when there is significant valuation uncertainty … [T]he size of the adjustment could be based on the degree of uncertainty created by the weakness in the data or underlying modeling approach.”

Reporting the results of valuation procedures. Amendments to valuation practices are being supplemented by improved communication of valuation information to users of financial statements. Clear, transparent, and timely communication is critical to maintaining investor confidence and ensuring proper functioning of the capital markets. While transparency and disclosures are more fully addressed in Section VI of this report, this section briefly discusses the issue of reporting the results of valuation-related information, including the quality of fair-value measurements, management estimates and assumptions, reporting risk exposures, and stress testing of significant valuation inputs.

As articulated in Principles IV.iii and VI.v of the CMBP Report, the IIF strongly endorses the objective of a robust disclosure framework through increased transparency of the valuation process and governance. Recent publications from the official sector, such as CEBS Consultation Paper 30 and FSA Discussion Paper 09/5, focused on enhancing financial reporting disclosures. Industry has been actively engaged with the official sector in developing these principles and best practices; indeed, financial institutions have markedly improved their valuation-related disclosures through the year-ended 2008 financial reports. Firms engaged in a collaborative dialogue with users, investors, and analysts to determine the most relevant information that should be disclosed—at times, over and above the minimum requirements under accounting standards—to assist those constituents in understanding the financial position and results of operations of financial institutions.

This positive progress also was acknowledged by the official sector: The FSA regulatory paper DP 09/5 acknowledged that “since 2007, [credit institutions] have considerably enhanced their disclosures in response to market developments.” Moreover, analysis of 2008 financial reporting by

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51 Committee of European Banking Supervisors, Disclosure Guidelines: Lessons Learned from the Financial Crisis, October 2009.
52 Financial Services Authority, Enhancing Financial Reporting Disclosures by UK Credit Institutions, October 2009.
the Committee of European Securities Regulators (CESR) have found that “many entities enhanced their fair-value disclosures on certain instruments they believed to be of importance for users and provided additional information to help users to better understand the financial statements.”

A word of caution, however, is needed. Developers of disclosure requirements should remain mindful that certain risks may stem from potentially unintended outcomes of a piecemeal approach to new disclosures. Such an approach might result in clouding of the financial reports with a level of granularity of required information that obscures the macro perspective of firms’ risk profiles from users of financial reports. The level of disaggregation of financial information should be considered. With an objective to avoid this risk, the IIF acknowledges the FASB’s initiative—in line with the recommendations of the Advisory Committee on Improvement to Financial Reporting (CIFiR)—to review and improve the disclosure framework.

The IIF supports a comprehensive joint review by the major accounting standard setters of the valuation disclosure framework, the aim of which is to eliminate irrelevant or redundant mandatorily required information. The consistency of disclosure requirements between the major accounting frameworks should be enhanced.

**Stress-testing disclosures.**
Enhancements for reporting of the results of valuation stress testing are required. This is particularly important for valuation methodologies that involve significant use of unobservable inputs and model parameters. This issue has been highlighted in the discussion of Recommendation IV.12 of the CMBP Report: “testing should focus on robust sensitivity analysis of valuations intended to disclose their potential volatility and range of possible results” and continues to be an area in which ongoing improvements are being made.

The *Ernst & Young Survey* findings indicated that many firms in the industry believe that improved reporting and analytics around stress-test scenarios are important areas in which further development is needed, in line with the stress-testing discussions from risk management and liquidity perspectives in Sections I and III of the *CMBP Report* and the further discussions in Sections I and II of this *Report*.

The *Ernst & Young Survey* findings were confirmed by the 2009 *SSG Report*, in which it was noted that several firms in the industry still encounter issues with consistent and uniform price sensitivity analysis across all financial instruments. However, at an industry level, considerable progress has been made in regard to improved valuation reporting.

The growing importance of sensitivity analysis in management of the valuation process and risk reporting is also a matter of attention for the accounting standard setters as well as prudential regulators. Proposals are now being made by the accounting boards, for example, via the proposed IFRS *Fair Value Measurement*, that will require embedding sensitivity analysis in the financial reporting framework. Firms will most likely be required to disclose the effects of changes in assumptions used to derive fair-value measurements, as well as the methodology in place to calculate such changes. In order to provide a realistic and risk-consistent view of the valuation stress testing and sensitivity analysis, it should be apparent that the focus of sensitivity analysis should be on the unobservable parameters, both in isolation and under correlated assumptions with other valuation input parameters. Along with industry recognition of and progress to date on the need to expand
stress-testing scenarios for market, credit, and interest rate risks, these developments should prove beneficial to enhancing transparency and improving market confidence.

**Market infrastructure and contract standardization.**

Improvements in market infrastructure, particularly in the area of over-the-counter (OTC) derivatives, should contribute significantly to improvements in valuations by reducing informational asymmetries and lack of transparency in price discovery. Such improvements will be further compounded by better use of independent pricing services. As supported by the IIF in the *Restoring Confidence Report*, data availability and transaction-reporting mechanisms are undergoing significant expansion (e.g., International Swaps and Derivatives Association [ISDA] CDS Marketplace, which was launched in August 2009). Furthermore, contract standardization and effective implementation of central clearing counterparties (CCPs) for credit default swaps (CDSs) are under way and should facilitate significant improvements in price discovery for both initial and subsequent valuations. These enhancements and other positive developments are discussed to a greater extent in Section VI of this Report.

**Reconsideration of own credit in valuation of financial liabilities.**

Revaluations of certain financial liabilities under current fair-value accounting rules have caused great concerns over the effects of changes in own credit on earnings. This is an issue of vital importance to the industry; the IIF has been actively engaged with the accounting standard setters in their current reconsideration of this issue. The industry is of the view that the accounting standard setters should not delay swift and appropriate resolution of known issues with recognition and reporting changes in own


credit in the valuation of financial liabilities. This should be done in a way that promotes communication of decision-useful information to users of financial reports. In this context, an appropriate and comprehensive debate should also ensue on the issue of valuation symmetry between financial assets and financial liabilities.56

**CONCLUSION**

While important progress has been made to improve the regulatory and accounting frameworks and to clarify valuation issues, additional work is necessary. It should address issues of valuation adjustments, disclosures and financial reporting, and transparent price discovery mechanisms. Over the next cycle, implementation of the IIF Recommendations and the evolving accounting guidance in the area of valuation of financial instruments will continue to be a significant task for financial institutions.

Progress also is under way on the debate over the scope of use of fair-value measurements. Here, close collaboration between the accounting standard setters is of the utmost importance. Short-term or localized incentives should not be allowed to impede progress toward a fully converged international framework for the use of fair value, one that is globally acceptable to all constituents and fully reflective of the nature and use of financial instruments.

The contribution of the two main standard setters to improved clarity on valuation issues since the crisis has been considerable; however, it is now crucial to assure international consistency and coordination that the goal of convergence of standards set by the G-20 be achieved. Further progress on these issues should serve the cause of enhancing financial stability through

56 For example, in the context of the measurement approach for insurance financial obligations, the debate should address the issue of market-consistent valuation methodologies where the ability, or lack thereof, to replicate valuation components in active and liquid markets must be taken into account.
robust and consistent valuation practices. While industry adopts and implements these new valuation and reporting requirements, the IIF continues to be engaged with the standard setters on developing a prudent financial reporting framework for valuation of financial instruments in both liquid and illiquid markets. The Institute also will consider valuation infrastructure issues, taking into account the many infrastructure developments since mid-2008, in the coming months.
INTRODUCTION

This section provides background on compensation issues and how they are being addressed by the IIF membership in response to the crisis. This interim assessment represents an update of the Compensation Report by providing a summary of progress to date in the industry’s ongoing efforts to improve compensation policies and by identifying challenges that firms and regulators face in the process. This assessment seeks to reinforce the industry’s commitment to implementing fundamental reforms and to apprise regulatory authorities of the challenges that firms and regulators need to address in their shared efforts to align incentives with the long-term interests of shareholders, prevent the buildup of excessive systemic risk, and build a more resilient financial system.

In the course of its active engagement with its members in strengthening financial industry practices, the IIF has accorded high priority to compensation issues. In its CMBP Report of July 2008, the IIF developed the first set of post-crisis compensation principles to emerge from any industry or regulatory body. These principles were well received by global regulators and financial institutions.

Collaborating with Oliver Wyman, the IIF assessed industry progress in aligning compensation policies with IIF principles in a survey of 70 firms with significant wholesale businesses, resulting in the March 2009 Compensation Report. Survey respondents acknowledged that compensation practices were one of the factors underlying the current market crisis. Respondents had already initiated important reforms in their compensation policies, but critical gaps existed in the areas of risk-adjusted performance measurement and alignment of compensation schedules with the risk time horizon of profit. The majority of respondents (60%) expected to be fully aligned with all seven IIF principles once their plans were implemented.

The Compensation Report also identified leading practices that could guide firms in their efforts to restructure compensation practices. These practices focused on the key issues of fostering effective governance and oversight, aligning performance metrics with firms’ risk appetites and strategies, and aligning compensation payouts with firms’ risk time horizons. Given the high visibility of compensation issues throughout the crisis, the IIF leadership, in a July 2009 letter addressed to members, underlined the importance of implementing reforms in line with the IIF Principles and regulatory guidance and urged members to resist practices that may be inconsistent with those principles, such as multi-year guaranteed bonuses.

More recently, the Ernst & Young Survey found additional progress at financial institutions on compensation issues. Based on a sample of thirty-eight banks from across the globe, the Ernst & Young Survey concluded that financial institutions had made tangible progress in restructuring compensation policies and practices to better reflect risk factors. Firms also indicated that an overall change in compensation structures was viewed as key to the reform of risk management in the firm. However, firms were concerned that
Reform in the Financial Services Industry: Strengthening Practices for a More Stable System

If coordinated global regulatory action is not taken soon, compensation reform would be compromised by some firms breaking ranks, given the pressures that arise in a highly competitive market for talent.

In the past year, several regulatory bodies have issued guidance and standards covering compensation, most notably the Financial Stability Board (FSB, previously the Financial Stability Forum), but also national regulatory bodies in key markets, including the United States, the European Union, and the United Kingdom. Foremost among the objectives sought by regulators and by the industry in this regard is to protect the safety and soundness of financial institutions, in part by altering incentives that could lead to excessive risk-taking and thereby contribute to financial instability. To this end, a number of mechanisms were identified, including increasing the ratio of variable-to-fixed compensation, incorporating risk and cost of capital factors into firms’ compensation calculus, extending payout periods in line with the time horizon of risk, and placing a portion of deferred compensation at risk depending on future performance (sometimes called a “clawback”). Regulators also aim to eliminate multi-year guaranteed bonuses that lack risk alignment, and excessive severance pay.

To help develop the information base for this interim assessment, the IIF expanded the SCI Advisory Panel on Compensation (which had been constituted at the time of the March survey) to provide a broader coverage of industry practices (see Appendix IX). The resulting assessment is based on publicly available information, Oliver Wyman’s own resources, and the consolidated views of Advisory Panel members with direct knowledge of compensation practices at more than 40 large financial firms in the United States, Europe, and Asia. Members of the Advisory Panel include compensation experts, senior industry human resources representatives, lawyers, and risk management professionals, many of whom interface directly with the Boards, CEOs, CROs, Chief Financial Officers (CFOs), and Human Resources departments of financial institutions and also liaise with regulatory authorities.

A full fledged survey at this time was considered premature, as the regulatory environment remains fluid and a full compensation cycle has not been implemented since the last survey in March. The IIF intends to carry out an industry survey of compensation practices by March/April 2010, and the results will be published at that time. In the meantime, and as an interim measure, it was judged that the Advisory Panel’s access to information and engagement with the industry should provide an informative and useful snapshot of current compensation practices and ongoing reforms in key financial markets.

It is important to emphasize that the reform of compensation, as in the reform of any market practice, is a process and not an event. Thus, while a more broad-based and detailed assessment will be made in the Spring of 2010, reasonably sound compensation structures will probably not be in place until the completion of a full bonus cycle that incorporates the results of firms’ experience with the improved business practices and with the newly issued supervisory guidelines. Beyond that, the process of refinement and adaptation will continue.

**SUMMARY OF INDUSTRY PROGRESS**

Considerable progress has been made in aligning compensation structures with the principles and implementation standards of the FSB and national regulatory bodies. More work, however, remains to be done by both individual firms and regulators. Progress is, perhaps unsurprisingly, greatest where the demands of different regulators and government shareholders have been aligned, but advances have been made across the board. Table 1 summarizes the progress made so far by financial services firms in the three critical areas of governance and oversight, the alignment with risk factors, and the deferral of bonus payouts in line with risk time horizons.

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60 Reform in the Financial Services Industry: Strengthening Practices for a More Stable System
Table 1. Progress in Restructuring Compensation Policies and Practices

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<tr>
<th>Area</th>
<th>Progress</th>
<th>Steps Industry is Taking</th>
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<tbody>
<tr>
<td>Governance</td>
<td>Most firms, especially leading institutions, are making tangible progress to meet governance principles in a timely manner.</td>
<td>• Strengthening independence, oversight, and expertise of Board-level compensation committees.</td>
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<td></td>
<td></td>
<td>• Reinforcing autonomy of risk and control functions and strengthening links to Board-level committees.</td>
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<td></td>
<td></td>
<td>• Back-testing new compensation processes to ensure they do not encourage adverse behaviors or exceed firm risk appetite.</td>
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<td></td>
<td>• Ensuring payments to risk and control functions are independent of the business areas they oversee.</td>
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<tr>
<td>Incorporation of risk in bonus pool and individual compensation</td>
<td>Direction of change is clear, and leading firms have already established the framework, but many firms still need to work through the finer details.</td>
<td>• Performance metrics to include adjustments for risk. Many firms already use established economic profit or other risk-adjusted performance frameworks in the compensation process.</td>
</tr>
<tr>
<td></td>
<td>Most firms will have a functioning process in place by year end, but may require another year of iteration before new structures are firmly established.</td>
<td>o Where these do not exist, they are being developed.</td>
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<tr>
<td></td>
<td></td>
<td>o Where they do exist, they are being improved, and made to cascade down through the organization.</td>
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<td></td>
<td>o All firms are attempting to incorporate risks that were previously poorly represented (especially liquidity risk through differentiated funding approaches).</td>
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<td></td>
<td></td>
<td>• Judgment will be incorporated as a critical input to compensation (purely formula-based approaches have been deemed inadequate by most major firms).</td>
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<td></td>
<td></td>
<td>• Many firms have found linear relationships linking bonuses to risk-adjusted revenue unsatisfactory and are considering more complex payout functions to help dampen extreme outcomes.</td>
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<td></td>
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<td>• Some firms are seeking to implement “knock-outs,” predetermined ratios designed to dramatically reduce or eliminate payouts on the basis of material underperformance relative to plan.</td>
</tr>
<tr>
<td>Payout structures and schedules</td>
<td>Most firms have already incorporated reformed provisions into their new structures, but details remain to be worked out pending year-end results and final details of regulatory requirements.</td>
<td>• Increasing deferral amounts and extending deferral periods.</td>
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<td></td>
<td></td>
<td>• Placing a portion of deferred compensation at risk contingent on future performance through clawback provisions.</td>
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<td></td>
<td></td>
<td>• Placing a larger proportion of compensation in the form of share-linked instruments.</td>
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<tr>
<td></td>
<td></td>
<td>• Agreeing to a ban on multi-year guarantees lacking risk adjustment.</td>
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The most recent and most widely accepted compensation guidelines remain the April FSB Principles, which were endorsed by the G-20 at their London summit and further elaborated into Implementation Standards by the FSB in September at the Pittsburgh G-20 summit (see Figure 1). In July 2009, the Basel Committee on Banking Supervision amended the Pillar 2
A framework to incorporate the FSB Principles. On November 7, 2009, the G-20 issued a communiqué from a meeting of Finance Ministers and Central Bank Governors in the United Kingdom expressly calling for the implementation of the FSB Implementation Standards. Furthermore, the G-20 Finance Ministers and Central Bank Governors called on the FSB to assess the implementation of the standards and submit further proposals by March 2010.

The FSB Principles and Implementation Standards focus on compensation issues arising in corporate governance, incorporation of risk factors in the bonus pool calculations and funding, and payout structures. While the FSB Principles were fairly high level, the Implementation Standards are more specific, requiring for example the deferral of 40%–60% of bonuses. Emerging compensation reform policies from national regulators and financial services firms are direct responses to the FSB Principles and Implementation Standards.

However, a challenge facing financial firms moving forward is the lack of regulatory consistency and clarity across national boundaries. For example, the FSB Implementation Standards prescribe specific measures to promote safety and soundness, while the Federal Reserve’s proposed guidance requires firms only to demonstrate how their chosen policies satisfy safety and soundness concerns. The Implementation Standards call for at least 50% of variable compensation to be awarded in shares or share-like instruments. Rather than prescribing a specific percentage, the Federal Reserve notes that equity-like compensation is effective only for high-level executives who clearly see a link between their decisions and the firm’s share value.

The European Commission’s proposed Capital Requirements Directive (CRD), like the

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**Figure 1** FSB: Compensation Principles and Implementation Standards

<table>
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<tr>
<th>Key FSB principles</th>
<th>Implementation standards (released Sep. 2009)</th>
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</table>
| - Active Board involvement 
- Involvement of the risk function 
- Independence of control functions 
- Disclosure requirements | - Remuneration Committee should involve majority non-executives and work closely with the Risk Committee 
- Remuneration for control staff should be adequate and independent 
- Remuneration Committee should submit an “externally commissioned compensation review” to the regulators and public annually |
| - Risk adjustment of compensation 
- Link to group performance 
- Implications for capital position | - Risk adjustments should reflect the cost and quantity of capital consumption as well as the liquidity risk 
- A firm’s financial performance should be reflected in bonus pool sizing 
- Capital build-up to take priority over compensation payouts—regulators to limit bonus payouts when it hinders build-out of a sound capital base |
| - Risk adjustments in bonus allocation 
- Accountability in performance measurement | - No further guidance released in Sep. 2009; previous guidance includes 
- Thorough measurement and stress testing of risk positions 
- Effective approach to capital allocation for the risk exposure 
- Reliance on expert judgement to sufficiently incorporate opaque risks |
| - Link to BU / individual performance 
- Sensitivity of payouts to future performance 
- Use of non-cash instruments 
- No use of multi-year guaranteed bonuses | Specific guidelines introduced to level the playing field globally: 
- Mandatory use of payout conditions (e.g. malus / clawbacks) 
- 40–60% of bonus should be deferred; >60% for the senior-most management (% should increase with level of pay/tenure) 
- At least 3 years deferred; higher for businesses with higher risk holding period 
- >50% of bonus to be awarded in non-cash instruments; stock-based instruments should be subject to an appropriate vesting policy |

*Source: Financial Stability Board.*
FSB Implementation Standards, takes an equally prescriptive approach to regulating executive compensation. In its current state, the CRD requires at least 50% of variable compensation to be in the form of shares or share-linked instruments; at least 40% of variable compensation to be deferred for at least three years; and prohibits employees with deferred compensation from engaging in personal hedging strategies.

An intermediate approach is taken by the United Kingdom’s Financial Services Authority’s (FSA’s) Remuneration Code, which combines a general rule with eight evidentiary provisions tending to show compliance with the general rule. However, proposed legislation in the United Kingdom could give the FSA wider powers to impose penalties on firms whose compensation policies are considered as inducing excessive risk and, significantly, to force changes in existing contracts if found to be inconsistent with the Remuneration Code. A still fundamentally different approach is taken by the Netherlands Bankers’ Association’s proposal, which aims to lower compensation levels by mandating remuneration for Executive Board Members to be less than the median salary for similar positions, both in and outside of the financial services industry.

National regulators have begun calling on firms to submit compensation policies as restructured in line with regulatory guidance. The FSA required firms subject to its Remuneration Code to submit Remuneration Policy Statements (RPSs) by the end of October 2009. All firms concerned have already complied, submitting descriptions and detailed quantitative data on existing systems of remuneration together with an explicit commitment to comply with the Remuneration Code along with directional indications of the new policies. The Federal Reserve has called on the 28 firms defined as large, complex banking organizations (LCBOs) to submit compensation plans by the end of February 2010. While the RPSs filed in the United Kingdom are not publicly available, a report from the FSA on the RPSs, as well as some self-disclosure by UK firms, is expected before the end of the year.

**GOVERNANCE**

Financial institutions are making notable progress in strengthening corporate governance structures related to compensation policies and practices. An almost universal consensus has formed on the goal of empowering the Boards to oversee compliance with overall firm risk strategies and on ensuring that the design of compensation plans better reflects the effects of the firm’s risk appetite. Significantly, changes also include giving greater authority and say to the risk and control functions on compensation issues, and establishing direct reporting and advisory links with Board-level committees. The majority of firms already meet, or are close to meeting, emerging standards.

*Tightening Board-level independence, oversight, and expertise.*

Firms are pursuing several approaches to ensure that the Board has the necessary authority, competence, and information to set policy and make well-informed high-level decisions affecting compensation. Firms are considering changing Board members or adding others with relevant expertise, ensuring Board access to independent experts on risk management and compensation, adapting the mandate of the compensation or remuneration committee, and designing compensation “dashboards,” or management information summaries incorporating relevant data for use by the Board.

*Including risk management in compensation processes.*

Some firms are establishing links between remuneration and risk committees to facilitate an integrated approach to aligning compen-
sation with the firm’s risk strategy. Others are formalizing relationships between remuneration committees and CROs to promote committees’ knowledge of risk undertaken at both department and enterprise levels. Many firms also are engaging audit committees to ensure that compensation policies properly incorporate risk appetites, risk policies, and requirements of the regulators.

**Back-testing new compensation processes.**
Firms have taken several steps to minimize the effects of possible adverse incentives. During the design phase, many firms are conducting simulations to track how payouts could change given business results incorporating various risk and other factors so that Boards and senior management may better appreciate future implications of different compensation policies. Once implemented, new compensation systems increasingly include controls, with risk management or some other independent function monitoring unforeseen adverse behaviors and outcomes to ensure that the compensation system, as implemented, complies with design policies, procedures, and intentions.

**Ensuring independence of payments to risk and control functions.**
The majority of firms already ensure the independence of payments to risk and control personnel from the results of the business units they oversee. Importantly, there is also recognition that the levels of compensation granted to these functions should be commensurate with their enhanced role in the firm. A gradual rebasing has been initiated and is expected to continue.

**Disclosing clear, comprehensive, and timely information about compensation practices.**
Firms are moving rapidly to provide more and better-quality information to employees to help them understand how the new structures work to provide performance incentives and how rewards are made. Most firms will have in place various dashboards that will help the Board by describing the size, composition, and allocation of compensation pools and how they are merited, as well as external reporting that will provide shareholders information on compensation plans and structures. A number of leading firms have publicly disclosed key features of their new compensation structures, highlighting alignment with FSB principles. Plans for public disclosure of annual compensation reporting are currently in an early stage and will likely be accelerated after year end. In the United States, more information will become available at the time of annual earnings announcements and SEC filings early in 2010.

**Key governance challenges:**

- The degree of inconsistency across jurisdictions on implementation standards, benchmarks and enforcement procedures, and remaining uncertainties or lack of clarity of detailed regulatory requirements in some jurisdictions.
- Increasing difficulty in finding capable directors willing to serve on compensation committees due to increased demands for expertise, as well as issues related to workload, director liability, potential adverse publicity, and the effects of “second-guessing” by regulators and shareholders.
- Establishing the necessary reporting and advisory responsibilities of the CRO and risk management with the Board compensation committee and the effective collaboration of the Board risk committee, compensation committee, and audit committee.
Governance Recommendations:

New Recommendation Q: The governance changes already under way should be pursued as a matter of good business practices within the broad range of market practices designed to avert crises and restore confidence; critical changes should be prioritized and finalized without delay, notwithstanding the pace of domestic regulatory guidance.

New Recommendation R: As the bonus round approaches, individual firms and domestic industry bodies should consider ways to better explain the intricacies of the compensation debate to policy makers, shareholders, and the broader public, recognizing previous shortcomings and highlighting the reforms already accomplished and under way, with special emphasis on adherence to regulatory standards already in effect.

DETERMINATION OF FIRM-WIDE AND INDIVIDUAL COMPENSATION

Financial institutions are making tangible progress in developing and/or refining methodologies to align compensation policies and practices with the firm’s risk appetite and to incorporate time-phased risk and cost of capital factors into their compensation calculus.

Adjusting performance metrics for risk and incorporating judgment.

Many firms already have established economic profit or other risk-adjusted performance frameworks for compensation determinations. Firms without such frameworks are currently developing them, and those firms with frameworks are moving to improve them to better respond to emerging regulatory guidelines and market developments. For example, some firms are improving the cost of capital frameworks by making them cascade down through the organization. In addition, firms are also incorporating risks that were previously poorly measured or missing, most notably liquidity risk by accounting for differentiated funding rates.

However, management and Boards of financial institutions find difficulties with the mechanical application of pure technical risk adjustments. Although firms can account for known risks, the identification and calculation of unknown risks are proving challenging; by their nature, many risks cannot be foreseen and thus measured with any degree of precision. Thus, firms are looking to make trade-offs between the “knowability” and accuracy of up-front risk adjustments on one hand, and their payout schedules on the other, relying on higher deferrals where risk levels are especially difficult to identify or measure.

Due to these difficulties, many firms are developing matrix/scorecard approaches with behavior-based metrics to calculate compensation levels. A perceived advantage of this model is that it allows for frequent updates to risk profiles based on developments in firms’ risk analyses (see Figure 2 for an example of a process that blends use of risk-adjusted metrics with judgmental inputs). In light of these practical difficulties, financial institutions expect a progressive implementation of new approaches as methods are tested, evaluated, revised, and disseminated among firms. Most firms will have a functioning process in place by year end, but it will likely require at least another year or more of iteration before reliable, detailed methodologies are well established. Refinements to these methodologies will be ongoing.

Bending payout functions to remove incentives for excessive risk-taking.

As part of the incorporation of risk metrics, some firms are seeking to establish the recognition that payouts will not be linear with results, but rather will be progressively tapered (e.g., $- or r-shaped). That is, results that are dramatically better than expectations will yield progressively lower
Figure 2. Example of Blending Risk-Adjusted Metrics and Judgmental Components

Source: Oliver Wyman.
marginal payouts. This is intended to ensure that risk-takers are not induced to test or to be tempted to exceed the risk appetite of the institution.

Implementing “knock-outs.”
Some banks are seeking to effect behavioral change by implementing “knock-outs,” which are predetermined ratios that could dramatically reduce or eliminate payouts for risk-takers who breach limits or other rules without authorization. These can be modulated so as to be proportional to the size of the infraction or deviation from the expected outcomes.

Incorporating deferrals in the design of compensation structures.
One seemingly straightforward solution to aligning compensation with risk is to defer compensation payments until the risks created by an employee’s performance are fully resolved. This method is already widely used in the industry. However, different time horizons for employment retention and risk realization raise important challenges to improving compensation alignment with risk through lengthier deferrals. Not only does the estimation of risk levels become more challenging with time, but also many deals have terms that extend over several years, and it may be impractical or unreasonable to expect employees to wait as long for their payout in full. As implicitly recognized by regulators, employee retention time horizons are, on average, three to five years, and most firms are setting their payout structures to this time frame.

Resolving the risk alignment difficulties requires a combination of up-front charging for risk, together with slightly longer deferrals to cover uncertainty of unrealized outcomes. Some firms contend that proper risk adjustments in compensation calculations are sufficient to align compensation with risk, making deferrals unnecessary, but regulators almost universally are seeking to establish standard deferral periods ranging from three years to five years. Caution needs to be exercised so that fixed-period deferrals are not mechanically applied (or required) for all employees so that the potential costs of lengthier periods, in terms of a firm’s ability to attract or retain high-performing individuals, do not outweigh the benefits of implementing an improved system.

Key risk alignment challenges:

- Firms’ efforts to align with regulatory guidance could produce divergent outcomes as regulatory details on compensation policies have not crystallized in all jurisdictions and past supervisory experience is no guide in the new environment.
- Competition with unregulated firms for talent and lack of regulatory action on this issue pose challenges to firms seeking to reform compensation practices while maintaining the ability to attract or keep top talent.
- Designing granular and effective risk-based compensation approaches to compensation deferment raises difficult technical issues. These include the unavailability of reliable granular data, the lack of tested methodologies to adjust for more complex risks, and general skepticism regarding potentially over-complicated metrics.
- Managing the financial impact of mandatory deferral increases, which, if unfunded, could have the effect of increasing earnings volatility.

Risk Alignment Recommendation:

New Recommendation S: Firms should ensure that compensation schemes incorporate major risk types and account for cost of capital and the time horizon of risks associated with future revenue streams. Teams incorporating business, risk management, finance, and human resources expertise should be engaged in the design of new compensation structures for use in the 2009 and subsequent compensation cycles.
PAYOUT STRUCTURES AND SCHEDULES

Firms have begun to revise and improve payout structures for closer alignment with risk appetites and long-term safety and soundness. Many firms already utilize deferrals, especially with regard to variable compensation, and firms are continuing to improve and refine their use of other risk alignment tools.

Increasing the use of deferrals.
Most firms have been moving strongly in this direction over the past eighteen months and leading firms have had deferral provisions in place for some time. Regulatory proposals for greater than 60% deferral for senior management would exceed the historical norms in the industry. In last year’s bonus round, deferred compensation averaged 45% for top earners, but a few firms have required as much as 70% to be deferred.

Placing deferred compensation at risk.
So-called “clawbacks” have two separate meanings in the industry:

1. True clawback of previous years’ compensation as a result of provision of false performance information or other employee wrongdoing. Since such clawbacks are rarely invoked and are tied to employee misconduct, employees have limited grounds for objecting to this type of clawback provision in employment contracts. Although it is expected that clawbacks will rapidly become an industry standard, sophistication is needed in their design so that a clawback is triggered only by an employee’s misconduct or by that of others for whom the employee has supervisory responsibility.

2. Placing deferred compensation at risk based on future results. Not a true clawback, but rather a medium-term incentive scheme to align behaviors with multi-year risk-taking, especially in businesses with hard-to-quantify risks. In some locations, such as the UK, but less so in the US, it is common practice to deliver a portion of non-variable deferred compensation in the form of long term incentives.

Many firms are considering or implementing “at-risk” deferrals for variable compensation, typically placing 50% to 100% of variable deferred compensation at risk if targets are not met. For example, some firms set a return on equity (RoE) target to be met either by the firm or the business unit. While no strong trend has been observed, the challenges posed by firms’ efforts to ensure consistent delineation of internal business boundaries through time could lead to the use of firm results as the primary target metric.

Eliminating multi-year guaranteed bonuses.
Multi-year guaranteed bonuses, unadjusted for risks, are being eliminated from industry practice and where they may be used to attract top talent, the structure of these bonuses is being changed. Prior to the financial crisis, multi-year guaranteed bonuses were commonly used, but already now it is extremely rare for bonuses to be guaranteed beyond one or two years. Bonus guarantees are losing favor because they amount to fixed payments that are unrelated to risk factors and are generally disliked by Boards and CEOs because of built-in rigidity, and by regulators because they tend to encourage excessive risk-taking.

Current bonus payments are typically linked to targets. Although this compensation feature has been highly publicized, most firms can count on one hand the number of employees receiving guaranteed bonuses beyond two years (usually in the context of older contracts), and many have committed to eliminating unconditional guarantees by 2010. As previously highlighted, global competition for talent among financial institutions is fierce; consistent global regulatory enforcement is required to protect first-movers and guard against unhealthy competition.
by providing a level playing field to all firms competing in the same market for talent.

**Constraining severance pay.**
Financial institutions have begun to reduce significantly levels of severance pay offered to top executives. Very few firms are offering executives so-called “golden parachutes” in new contracts, and many face constraints imposed by governments providing significant support, as in the case of TARP firms in the United States. It is difficult to know if these changes will hold in the long run. With Board members increasingly involved in approving employment contracts and setting executive pay, executives have less power to exact excessive severance pay provisions. This gradual shift in the balance of power within firms is likely to continue well into the future. Moreover, the reduction in severance arrangements reflects a similar trend in public companies that predated the financial crisis.

**Key payout structure challenges:**
- First-mover disadvantages – there have been cases of firms adopting best practices to move away from a heavy emphasis on short-term results only to encounter difficulties in retaining and attracting talent. It is becoming increasingly challenging for firms to maintain a voluntary, principles-based approach to compensation in a highly competitive talent market. Harmonized regulatory initiatives are, therefore, needed to protect “first-mover” firms that implement innovative and valuable compensation reforms and to discourage non-compliant behavior.
- Firms weakened by the crisis may be further disadvantaged if government curbs on pay are applicable to bailout firms only or, following FSB Implementation Standards, are required, in cases of capital impairment, to shift more of their revenue to capital increases at the expense of remuneration that is needed to attract talent to help grow earnings, and rebuild capital.
- Tax and accounting regulations are not always conducive to optimal deferral and clawback mechanisms.
- Firms also face challenges in communicating changes in compensation policies and must convince employees that new compensation approaches do not penalize them unfairly and will not become overly politicized within the firm. Effective risk alignment should help employees understand that their compensation does not depend on the realization of risks to which they did not contribute and over which they had little control.

**Payout Structure Recommendations:**

**New Recommendation T:** Firms should move to adapt risk-alignment concepts such as deferrals and clawbacks to their own business models in light of the prevailing regulatory and market environment.

**New Recommendation U:** We call on the FSB and national regulators to carry out a benchmarking exercise, especially with regard to deferrals and ratios of variable to fixed compensation, that could guide the development of industry practices toward harmonized approaches across jurisdictions.

**CONCLUSION**

The broad conclusion of this chapter is that considerable progress has been made in reforming firms’ compensation practices to guard against excessive risk-taking that could threaten the safety and soundness of the firm or contribute to overall financial instability. Undoubtedly, more work needs to be done in the weeks and months
ahead by individual firms as well as by regulators
to sustain the powerful momentum that has been
generated by the response to the crisis.

Firms across the industry have now
committed either internally or to their regulators
and shareholders to implement the compen-
sation principles that have met with a broad
international consensus, and most leading firms
are expected to meet the key requirements of
the emerging standards by the 2009 cycle (in
early 2010). The development of sound practices
on compensation, as on other issues, remains
an evolutionary process that will continue to
be subject to review and further refinements in
coming years, guided by regulatory principles,
by market developments, and by the firms’ own
experience.

Firms and regulators face significant
challenges, however. Firms are particularly
concerned about first-mover disadvantages and
the possibility of being in a jurisdiction with more
restrictive compensation policies. Given that
financial institutions have to compete for talent
across global markets, as well as with unregulated
entities such as hedge funds and private equity
firms, regulators are called upon to put in place
agreed global policies with sufficient consistency
across jurisdictions to ensure a level playing field
for all financial institutions operating in key
markets.

Financial services firms are fully committed
to rebuilding their capital bases as a top priority
to guard against future crises and to help a timely
return to growth. While meeting regulatory
capital standards will promote systemic safety
and soundness, industry efforts in pursuit of this
objective must not place weakened firms at a
disadvantage in setting aside adequate resources
to attract or retain needed talent to help grow
earnings and rebuild capital.

Individual firms and domestic industry
bodies need to do a better job of explaining to
policymakers, to shareholders, and to the public
at large the competing imperatives and the
tradeoffs in issues related to compensation. The
industry should make it clear to the public that it
is working together with regulators in good faith
to reform compensation, but that this reform will
require time and effort to help resolve complex
technical issues as well as to adapt to the new
regulatory environment. The IIF continues to
believe, however, that lasting changes to compen-
sation structures and corporate governance
are key to helping guard against the buildup of
systemic risk and therefore restore confidence and
build a more resilient financial system.

Finally, the reform of compensation practices,
as in the case of other market practices, is an
evolutionary process whereby new structures are
continuously reshaped by the evolving regulatory
environment and supervisory implementation,
by the changing financial landscapes, and by the
firms’ own experience in the marketplace. It is
hoped that the continuing interaction among
these forces will enrich the collective experience
of all parties concerned to build more robust
compensation market practices that mitigate
the build-up of systemic risk and help secure
financial stability and market resilience.
SECTION V

Restoring Confidence in the Securitization Market and the Ratings of Structured Products

INTRODUCTION

The financial crisis highlighted a number of problems in the origination, underwriting, ratings, and distribution of structured products, which were compounded by poor due diligence and reliance on ratings on the part of investors. The July 2008 CMBP Report examined the ratings of asset-backed structured products from origination to risk management and distribution of such products, the analysis and assignment of final ratings by the agencies, and the investment decisions by institutional investors. The Report concluded that to maintain the integrity of the end-to-end process, parties involved in each stage of the process needed to conduct their business with integrity and perform adequate due diligence. Accordingly, the IIF provided Recommendations for each of the three key groups:

1. Originators/sponsors, underwriters, and distributors;
2. Rating agencies; and
3. Investors.

With regard to credit underwriting activities, the IIF made several Recommendations that were designed to:

- Improve due diligence through the adoption of standards by originators/sponsors, underwriters, and distributors;
- Increase disclosure of relevant information in a timely manner; and
- Improve monitoring and disclosure of the performance of the underlying collateral.

To help restore market confidence in the credit ratings process for structured products, the IIF Recommendations focused on:

- Strengthening the ratings process through greater clarity regarding ratings definitions and methodologies;

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57 Originator means either of the following:
   1. An entity that, either itself or through related entities, directly or indirectly is involved in the original agreement that creates the obligations or potential obligations of the debtor or potential debtor giving rise to the exposure being securitized; or
   2. An entity that purchases a third party’s exposures, brings them on to its balance sheet, and then securitizes them.

58 Sponsor is an entity that establishes and manages an asset-backed commercial paper program or other securitization scheme that purchases exposures from third-party entities. Originators can be sponsors.

59 Underwriter is the entity that acts as an intermediary between the issuer of a security and the investing public.

60 Distributor is the entity that buys structured products directly from originators for the purpose of reselling to interested buyers.

Note: A financial institution can act in different capacities described above. For practical purposes, any reference to originators includes sponsors, and any reference to underwriters includes distributors in this Report.
• Increasing transparency of ratings assumptions and models;
• Having better internal governance, particularly with respect to compliance and surveillance functions; and
• Establishing external review of the ratings process.

Finally, with regard to investors, the IIF recommended that investors should:

• Have sufficient technical skills and resources to conduct internal due diligence;
• Develop robust in-house risk assessment processes and conduct thorough analysis before making an investment decision; and
• Monitor performance of structured products in their investment portfolios.

Efforts are being made by all parties to address weaknesses in order to bring investors back to the securitization market. In its review of ongoing reforms in this area, the IIF has reported on internal improvements in the risk management functions of financial institutions, which are part of the securitization market value chain (see “Section I. Risk Management”). We also have noted the work being done by other organizations such as the American Securitization Forum (ASF), Association for Financial Markets in Europe/European Securitisation Forum (AFME/ESF), International Swaps and Derivatives Association (ISDA), and Securities Industry and Financial Markets Association (SIFMA) to increase disclosure and transparency at the structured product level (see “Section VI. Transparency and Disclosure”).

While we briefly address improvements made by originators, underwriters, distributors, and investors, much of this section focuses on the ratings of structured products. Views expressed in this section represent the opinion of financial institutions, who use ratings in either issuing or investing activities.

IMPLEMENTATION OF CMBP REPORT RECOMMENDATIONS RELATED TO THE SECURITIZATION MARKET

Ernst & Young Survey found firms reducing reliance on ratings in the asset valuation process. The Ernst & Young Survey found that firms were reporting changes in their approach with increased focus on relying more heavily on underlying risk characteristics rather than ratings. Several banks felt that their approach to valuing structured products had been less than adequate and had relied heavily on the ratings of individual securities. Further, firms relied on the external credit ratings of a structured product to assess and report risk in the valuation process. As a result, potential concentration of risks was not transparent, and top managements were not aware of the sensitivity of risk measures to the assumptions being made.

To address these shortcomings, firms are strengthening their internal processes to reduce reliance on credit ratings. Banks noted a marked increase in the involvement of the CFO and CRO functions in assisting with valuation issues and in the control and validation of valuations. They have also added additional resources to develop teams, independent from the front office, to review valuations.

Reforms are occurring in origination, underwriting, and distribution practices. Project Restart, an industry initiative to restore investor confidence in securitization markets undertaken by the ASF, has done significant work to improve origination practices. As part of Phase 1 of the project, the ASF developed standardized loan data sets (that are sent to credit rating agencies) for residential mortgage-backed securities (RMBS) instruments. It also developed standard definitions for terms and expanded data items to be disclosed to rating agencies and third-party users of the data sets. Further, the ASF has engaged service providers to develop a program
that will give loans a unique tracking number. This would allow the industry to track individual loans and provide loan history. The organization is continuing to do more work in this area, and as part of Phase 2, it may develop underwriting standards for the industry.

In addition to improvements being made by the industry, significant change with regard to strengthening of origination and distribution practices are being mandated through regulatory reform.

Regulators believe that the “skin-in-the-game” proposals, which would require all firms that originate securitized loans to retain a percentage of the credit risk after they are sold, will have a positive influence on the behavior of originators and distributors of structured products. They believe that retaining part of the risk through the life of the assets incentivizes originators to improve their due diligence practices and construct products that are less complex and risky. Such “skin-in-the-game” proposals have been made in the European Union and the United States and, although some market participants remain skeptical of these proposals, they are now being viewed as likely to happen.

*Increased transparency and reduced reference to ratings in regulatory guidelines will encourage more investor due diligence.*

The financial crisis made it clear that many market participants relied too heavily on ratings when investing in structured products; some, in fact, simply did not have adequate resources to conduct the necessary due diligence themselves. As an association mainly of financial institutions, the IIF can play only a limited role in encouraging adoption of its investor-related Recommendations.

Moreover, owing to the diverse investor base, implementing change in this area has proved challenging even for regulators. Nevertheless, there is some anecdotal evidence that improvements at the investor level are dependent on the willingness of an investor or investment manager to address identified weaknesses and strengthen internal processes.

For banks, both the European Union and United States have developed proposals to require additional capital for their holding of securitization instruments if they fail to demonstrate that they have adequate diligence procedures independent of reliance on external ratings. While these proposals cover banks and, in the European Union, investment firms as investors, they may be mimicked in regulation for other investors, such as insurance companies and possibly pension funds. These proposals will, of course, create further demand for the enhanced data provision that industry associations are developing.

The official sector is trying to tackle this issue by requiring originators, distributors, and rating agencies to provide greater disclosure to investors. Further, regulators are considering ways to reduce investor reliance on ratings by trying to diminish references to credit ratings in regulatory guidelines (see “Market and Regulatory Dependence on Ratings” below).

Moreover, as part of their reform agenda, regulators are pushing for greater investor protection. For example, in the United States, the current Treasury proposal creates a new consumer financial agency that would have broad powers to set rules governing credit cards, mortgages, and other financial products to protect the average investor. While the *CMBP Report* did not call for such an agency, it did call for equal regulation of all underlying obligations, regardless of whether originated through a bank or non-bank entity, in order to achieve more assurances of quality of underlying obligations and thus avoiding some of the egregious quality problems seen with some of the undocumented or poorly documented assets (see Recommendation V.4 of the *CMBP Report*).

Several official-sector statements have recognized the problem of investor due diligence and the need to encourage investors to do more than just rely on ratings. However, there also is recognition that it is unrealistic to dispense with ratings and that small investors especially will need to
continue to use ratings at least as benchmarks for making investment decisions.

**Restoring confidence in credit ratings is seen as the second most important factor in restoring confidence in structured product markets.**

In December 2008, SIFMA published *Restoring Confidence in the Securitization Market*, a report based on a survey of more than 500 issuers, investors, and dealers in the European Union, United States, and Asia. The survey, conducted by McKinsey, found that restoring confidence in credit rating agencies was cited by respondents as the second most important factor essential to reviving the structured product market, preceded only by enhanced disclosure and standardization of information.

In its attempt to monitor the implementation of the 2008 Recommendations, the IIF has reviewed improvements made by rating agencies to internal practices since the release of the *CMBP Report* and surveyed new regulations that have been developed in the United States, European Union, and Japan. Finally, the Institute has tried to bring attention to some of the more difficult issues that have yet to be addressed by regulators, credit ratings agencies, and the users of credit ratings.

The remainder of this section is focused on improvements in the credit ratings industry.

### A. PROGRESS MADE TO DATE

**Credit rating agencies have made significant efforts to address market concerns by enhancing models and methodologies, strengthening internal governance, and increasing transparency and disclosure.**

In the aftermath of the financial crisis and the market criticism of credit ratings of structured products that followed, rating agencies made an effort to rebuild investor confidence by addressing many of the weaknesses inherent in their business models and ratings methodologies. Voluntary reforms undertaken by the agencies address many of the IIF Recommendations. Recommendations V.7 and V.8 in the *CMBP Report* calls on rating agencies to:

- Provide greater clarity regarding the target for a structured finance rating (e.g., by clearly setting the definition of default and probability of default),
- Give more focus to likely recovery (e.g., considering relevant factors such as triggers) for different securities,
- Provide clarity with regard to the factors that could lead to a downgrade, and
- Consider qualitative factors such as the lending standards of the originator and the amount of sampling of borrower documentation.

Rating agencies, most of which operate with issuer pay models, have worked hard to address concerns arising from perceived conflicts of interest in their revenue model by forbidding consultation on design and structure of assets. Ratings methodologies have been strengthened and some supplemental research has been provided or proposed to provide information on non-default risks, including recovery and volatility. Rating agencies also have made an effort to formalize processes and strengthen compliance with policies and are making efforts to better educate users about the meaning of their ratings.

**Further structural reform will be achieved through legislation, particularly with regard to transparency and governance, with regulators strengthening their oversight of credit rating agencies.**

After years of light regulation, regulators around the world, including in the United States, European Union, and Japan, have increased their oversight of credit rating agencies. Comparing new and proposed regulations in various jurisdictions against IIF Recommendations has found that proposed regulations address most of such recommendations by significantly strengthening
regulatory oversight of rating agencies while making the ratings process more transparent to investors.

For example, the European Union’s legislation on credit rating agencies\(^{61}\) requires those agencies to “use ratings methodologies that are rigorous, systematic, continuous, and subject to validation, including by appropriate historical experience and back-testing.”\(^{62}\) Further, rating agencies are now required to “disclose information to the public on methodologies, models, and key rating assumptions which they use in their credit rating activities.” Under the new rules, disclosure of information concerning models will give more information to the users of credit ratings so that they can perform their own due diligence when assessing whether or not to rely on those credit ratings.

In its final rules for nationally recognized statistical rating organizations (NRSROs),\(^{63}\) the SEC will require an NRSRO to disclose “definitions of the ratings (i.e., an explanation of each category and notch) and explanations of the performance measurement statistics, including the metrics used to derive the statistics.” This will enhance disclosure by requiring separate sets of default and transition statistics for different classes of credit ratings.

To enhance disclosure of ratings methodologies, the SEC will require NRSROs to “disclose whether and, if so how, information about verification performed on the assets is relied on in determining credit ratings for structured finance products.” It also requires the NRSRO to disclose “whether it considers qualitative assessments of the originators of assets underlying a structured finance product in the ratings process for such product.”

In addition, the SEC has tightened surveillance of published ratings by requiring NRSROs to disclose “the frequency of its surveillance efforts and how changes to its quantitative and qualitative ratings models are incorporated into the surveillance process.”

Regulators are also seeking to increase transparency of credit ratings of structured products and have proposed regulation that would require different symbols to be used to distinguish the risks of structured products as an indication of disparate risks.

**The effectiveness of changes by rating agencies and regulators to restore investor confidence remains to be seen.**

Despite the improvements mentioned above, investors continue to be agnostic about the value of credit ratings of structured products. Only time will tell if the improvements made by regulators and rating agencies are sufficient to restore investor confidence in credit ratings of structured products. However, recent reports that some debt issuers are selling bonds and complex structured products without credit ratings\(^{64}\) may be first indications that some issuers are beginning to bypass the formal ratings process and that investors are willing to buy unrated assets. It will be interesting to see if this practice is adopted more widely.

While strengthening regulation and supervision of credit rating agencies, in particular of their internal controls and processes, are needed and welcome, it remains to be seen if all the changes will be sufficient to restore confidence in the ratings of structured products. Specifically, these proposals do not address the IIF’s Recommendation V.13, which calls for the creation of an “external body that would develop standards and review rating agencies’ internal processes to assess adherence to such standards.”\(^{65}\)

If the proposed changes fail to convince investors, the IIF’s original Recommendation

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\(^{61}\) See *Regulation of the European Parliament and the Council on Credit Rating Agencies*.

\(^{62}\) While the EU regulation calls for validation through back-testing based on historical experience.

\(^{63}\) See *Amendments to Rules for NRSROs*.


should be seriously considered. The IIF believes that implementation of this Recommendation may help reinforce, at the industry level, the improvements made by individual rating agencies. This is in line with CESR’s original Recommendation of creating an international rating agencies’ standard-setting and monitoring body, which would monitor compliance with international standards. However, CESR's recommendation has not been adopted into the EU regulation on ratings or considered by any other regulator.

While tightening regulation in various ways, the official sector remains very wary of anything that might constitute review of ratings themselves or ratification of ratings processes, which could increase perceived moral hazard. Nevertheless, references to credit ratings in regulations have fostered reliance on ratings, which put responsibility on regulators to ensure adherence to minimum standards (see “Market and Regulatory Dependence on Ratings” below).

Effectiveness of proposed regulations hinges on the quality of oversight.

In its August 2009 report, the Inspector General of the SEC found that the agency had been slow to act in regulating credit rating agencies. It identified certain instances of non-compliance with the requirements of the Credit Rating Agency Reform Act of 2006 or SEC rules and called for enhancement of SEC oversight of rating agencies.

As mentioned above, in the United States, the Treasury, under its revised financial market regulatory architecture, calls for significant strengthening of the SEC’s abilities to oversee credit rating agencies through the establishment of a dedicated office for their supervision within the SEC. It also requires rating agencies to designate a compliance officer who will have direct responsibility over compliance with internal controls and processes and will submit to the SEC an annual report on compliance within the organization. These requirements, along with increased transparency and better surveillance by investors, should help strengthen oversight of issued credit ratings.

In contrast, while the European Union has adopted more stringent rules on internal governance structures of credit rating agencies, the general application and oversight process of rating agencies is likely to be complicated. Under the new law, authority and supervisory functions are to be shared among three entities:

1. CESR (to be succeeded by a new authority on securities regulation in accordance with current proposals on regulatory structure);
2. “Competent authorities” in EU Member States responsible for overseeing credit rating agencies; and
3. A college of regulators, with representatives from authorities in each Member State.

Thus, the effectiveness and quality of oversight would require coordination of at least three entities and more if the ratings are to be used in multiple jurisdictions (which would involve authorities in multiple Member States).

While much has been done to strengthen legislation regulating credit rating agencies, strong regulatory oversight is needed to bring confidence back into credit ratings. Hopefully, the EU coordination process will be strengthened through colleges for credit rating agencies that are to be established under the new rules. However, ultimately an integrated and consistent regulation and supervision process across the major jurisdictions, with mutual recognition among them and coordination on enforcement, seems a much more productive way to go.

Concerns about possible regulatory fragmentation exist, highlighting the need for global coordination of regulation.

As mentioned earlier, prior to the financial crisis, credit rating agencies were registered by the SEC in the United States but without a great deal of substantive intervention. European
regulators relied on their US counterparts and the International Organization of Securities Commissions (IOSCO) to oversee working of the rating agencies. IOSCO monitored the level of compliance of credit rating agencies’ code of conduct with the IOSCO Code of Conduct,66 which was strengthened in mid-2008 to address market concerns regarding the quality and integrity of the ratings process, mitigate conflicts of interest, and address rating agencies’ responsibilities to the investing public and issuers through increased disclosure and transparency. Many of these requirements have now been incorporated into US and EU legislation.

However, since the crisis, the European Union has been highly focused on issues of regulation of rating agencies. There is a common belief that the “outsourcing” of rating agency regulation to the SEC is no longer sufficient. Further, the SEC’s mission of protecting the interests of investors is not completely aligned with the European Union’s wider focus on protecting interests of stakeholders. As a result, the European Union has passed its own legislation regulating credit rating agencies within its jurisdiction.

The European Union and the United States have taken different approaches, with US regulation focusing on strengthening investor protection through increased transparency and encouraging more competition, and EU regulation focusing more on governance and mandating aspects of business models while also addressing similar transparency issues. While the proposals to date have substantial similarities and are based on the IOSCO code as far as it goes, concerns exist that the proposals now being legislated will have sufficient differences to cause real problems and conflicts and perhaps make it difficult to have globally consistent ratings from the same firms or worse, getting two ratings for the same exposures. On the other hand, global consistency of ratings and ratings regulation is clearly essential to the smooth functioning of global markets and the free flow of capital.

At the October 2009 IOSCO Technical Committee conference, both SEC and CESR officials expressed strong concern that the legislation in the United States, European Union, and Japan could result in fragmentation of regulatory requirements for rating agencies and possibly conflicting extraterritorial effects that would be hard to manage both for the agencies and regulators. Whether these problems could be solved by regulatory cooperation on “constructive interpretation” or whether a political agreement or treaty negotiated at the level of the G-20 to mandate consistent regulation would be required was a subject for debate. How serious these issues may be will depend to some extent on the processes of recognition of the “equivalency” of other jurisdictions’ regulatory regimes.

The extraterritorial effects of the EU regulation in particular will pose different problems for the major North American agencies, which have offices in the European Union that can take responsibility for ratings, and Japanese and other rating agencies, which do not have such offices.

As regulatory fragmentation is a major current concern of the Institute, it will continue to closely follow developments in this area.

Globally consistent regulation, with consistent interpretation and avoidance of conflicts of law or interpretation, is clearly essential to restoring an appropriate role of credit rating agencies in the global system. In the longer term, some form of mutual recognition will likely be needed to mitigate the problems and burdens of extraterritorial effects, even if regulatory cooperation on interpretation manages to smooth the potentially divergent effects of different bodies of legislation.

The IIF, therefore, recommends that global regulators develop a formal mechanism to coordinate regulation of credit rating agencies on an ongoing basis to prevent national fragmentation of ratings regulations. Further, regulators need to develop a system of mutual recognition,  

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which would help reduce the burden and cost of compliance for firms and encourage convergence of rules. This coordination might be organized through IOSCO or the independent body recommended by the IIF.

B. MARKET AND REGULATORY DEPENDENCE ON RATINGS

References to rating benchmarks in regulation further fosters market reliance on ratings . . . As noted above, a key lesson of the financial crisis was excessive investor reliance on credit ratings, mistakenly believed to reflect the entire risk in a structured product. While ratings were meant to indicate probabilities of default, some investors might have come to rely on ratings as indicators of value, disregarding liquidity and other risks that ratings did not purport to capture. Moreover, some institutional investors, particularly those with small investment teams, did not have adequate resources to conduct the due diligence required to assess the complexity and appropriateness of structured products prior to investment, resulting in over-reliance on credit ratings in their decision-making process.

While regulators and rating agencies have made significant efforts to increase transparency of ratings criteria to encourage better investor due diligence, there is some skepticism whether these will be enough to change investor behavior. Many investors agree that while imperfect, ratings will continue to play the vital role in financial markets of signaling credit risks associated with financial assets, and many in the regulatory community acknowledge this. Further, they help reduce costs of due diligence, especially for small investors. Investor reliance on credit ratings is further enhanced by reference to ratings for various purposes in financial regulation worldwide.

A June 2009 paper Stocktaking on the Use of Credit Ratings, released by the Basel Committee on Banking Supervision (BCBS), found that in general: [C]redit ratings were used predominately in Legislation, Regulation, and/or Supervisory Policies (LRSPs) in the banking and securities sectors, with more limited use in insurance sector LRSPs. Geographically, the North American LRSPs used references to credit ratings—specifically, to credit ratings issued by NRSROs—significantly more than in the LRSPs of the EU, Australia, and Japan.

The BCBS also found that credit ratings are used by LRSPs for five key purposes:

1. Determining capital requirements;
2. Identifying or classifying assets, usually in the context of eligible or permissible asset concentrations;
3. Providing a credible evaluation of the credit risk associated with assets purchased as part of a securitization offering or a covered bond offering;
4. Determining disclosure requirements; and
5. Determining prospectus eligibility.

Ratings also may be used to set duty-of-care standards for fiduciaries.

A prominent example is that the Basel Accord requires financial institutions to use credit ratings from certain approved rating agencies (called external credit assessment institutions, or ECAIs) when calculating their net capital requirements under the Standardized Approach and for certain other purposes. In the United States, the SEC permits investment banks and broker-dealers to use NRSRO-issued credit ratings for similar purposes. Regulators also have built dependence on the use of rating agency methodologies and models for internal rating purposes by requiring banks to follow published rating methodologies for generating an internal rating under the Internal Assessment Approach for unrated instruments.

The BCBS report found that while no authority had conducted a formal assessment of
the impact of the use of credit ratings in LRSPs on investor behavior, almost all authorities appeared to have considered the issue. Moreover, the United States, Canada, European Union, and Japan were considering proposals that may lead to various changes in the use of credit ratings in the LRSPs in those jurisdictions. For example, the US Treasury has announced several initiatives designed to identify ways to reduce regulatory reliance on credit ratings. This includes:

1. A review of regulatory use of ratings by the President’s Working Group on Financial Markets;
2. A request for public comment by the SEC on whether to remove references to ratings in money market mutual fund regulation; and
3. A study by the US Government Accountability Office on reducing reliance on ratings in federal and state regulations.

While the IIF agrees that it is important to reduce reliance on ratings, it is generally acknowledged that it would be impossible to eliminate references to ratings, particularly in investment mandates or guidelines for money managers. It is notable that the SEC issued but then withdrew proposals to remove references to ratings in regulations for money market mutual funds after public consultation revealed several serious difficulties that would result from doing so.

Nevertheless, more recently in November 2009, the SEC adopted two amendments that would remove references to ratings of NRSROs from Investment Company Act Rules 5b-3 and 10f-3. These amendments remove the exemption: i) from an accountant certification requirement that allows highly rated “refunded bonds” to be treated as government securities pledged to secure payment of those bonds, and ii) for purchase of highly rated municipal securities from the rule’s affiliated transaction prohibitions, replacing credit rating tests with subjective credit risk and liquidity standards. It has also proposed two other amendments, which if adopted would also replace minimum NRSRO credit ratings requirement with subjective credit risk and liquidity standards that are to be applied by a fund’s Board.

Moreover, a November 2009 decision by state insurance regulators in the United States to adopt a new methodology for sizing up risk in insurers’ holdings of residential mortgage bonds that eliminates the use of ratings from the major ratings firms is evidence that regulators are serious about reducing reliance and references to credit ratings in regulatory guidelines.

There appears to be some progress with educating the market as to the purposes and limitations of ratings, which may help prevent undue reliance in the future. In addition, some changes being made by the rating agencies themselves, such as focusing on ratings stability as an issue, will help clarify the proper use of ratings in the future.

The efficiencies brought by ratings need to be recognized, as does the fact that ratings have continued to perform reasonably well for many obligations other than structured products.

requiring regulators to provide stringent oversight by setting standards, reviewing internal processes, and assessing adherence to standards.

While some regulators are making efforts to reduce references to ratings in legislation and regulation, authorities continue to incorporate references to ratings in new requirements. One example is the Federal Reserve’s TALF Program, under which the Fed provides low-cost loans to investors to buy AAA-rated securities backed by automobile, credit card, equipment, education, and other kinds of loans. Such references continue to build reliance on ratings. As in other areas, such requirements may induce issuers to “shop” for credit ratings or seek the highest ratings with the lowest standards.

Until such time that regulators have reduced

or eliminated references to ratings in legislation and regulation, they need to provide sufficient oversight of credit ratings to ensure that their quality meets minimum standards.

The proposal made in the CMBP Report and summarized above for minimum industry standards on issues such as internal processes, rating methodologies, and so forth, which all rating agencies would be required to meet, would address part of the concerns raised with respect to regulatory and legislative “hard wiring” of ratings. Recognized standards, compliance with which would be subject to independent review, would build confidence in the quality of credit ratings of structured products.

CONCLUSION
Since the onset of the financial crisis, credit rating agencies have been the subject of significant criticism from investors for their part in the crisis. In response, they have worked hard to strengthen internal processes and clarify rating methodologies for structured products and disclose more information. For their part, regulators, through legislation, have increased their oversight of rating agencies and have adopted rules to mitigate conflicts of interest inherent in the issuer pay model. However, it remains to be seen if the changes, while much needed and welcome, will be sufficient to restore confidence in ratings of structured products.

Credit ratings are an important market mechanism that cannot be fully dispensed with. They are well integrated into today’s financial framework, and while ratings are not a substitute for investor due diligence, it is realistic to expect that investors will continue to rely on ratings in the future. If market confidence is to be restored in credit ratings of structured products, investors need to know that credit rating agencies adhere to minimum standards with regard to internal processes, including ensuring the robustness of rating methodologies and models. However, regulators are reluctant to prescribe such standards due to fear of moral hazard associated with government prescribed standards.

Investor confidence in credit ratings of structured products is a critical factor in reviving the securitization market. The effectiveness of improvement made by rating agencies and regulators to date will be evident in the coming year. If these improvements fail to restore investor confidence in credit ratings, the IIF Recommendation to establish an external body, which would include rating industry experts and would develop standards and review rating agencies’ internal processes and assess adherence to such standards, should be seriously considered. This body would not interfere with the ratings process and would not be designed to “second guess” credit ratings issued by rating agencies.

Finally, fragmentation of credit ratings–related regulation is a growing concern that must be addressed if a global market is to have globally consistent, comprehensible ratings and to avoid conflicts of sometimes extraterritorial laws.
INTRODUCTION

The CMBP Report recognized\(^{68}\) that restoration of confidence in the securitization and financial markets and institutions in general would require more accessible, timely, and useful information about products and transparency on the part of firms.

At the structured product level, IIF Recommendations included:\(^{69}\)

- The development of a short-form summary of the offer document that would highlight key characteristics of an offering and make it more simple for investors to understand the risks of products they are purchasing (i.e., standardized documents);
- Global harmonization of market definitions and structures to assist in the future development of the structured product market;
- Development of harmonized principles for transparency and disclosure of structured products across major markets; and
- Adoption of common platforms and technology, such as data portals, to improve access to information on structured products.

At the financial institution level, IIF Recommendations called on firms to ensure that:\(^{70}\)

- Their disclosure provide a sufficient overview of their current risk profiles and risk management processes, and highlight key changes (from previous periods) to their current risk profile, including their securitization activities;
- Disclosures include substantive quantitative and qualitative information about the valuation process to enhance further transparency;
- Firms actively participate in efforts with the official sector and standard setters to develop meaningful and comparable disclosures on valuation uncertainties and sensitivities, with a materiality threshold to limit information overload; and
- Firms appropriately disclose qualitative and quantitative information about their liquidity risk management practices and provide meaningful disclosure for material funding requirements for off-balance-sheet vehicles.

The Institute has found that the industry has made material improvements in transparency and disclosure, including those through Pillar 3 disclosures. Together with industry initiatives to reform securitization, firms are working toward more transparent, liquid, and standardized markets and also toward clarifying off-balance-sheet exposures. Details on specific industry initiatives follow.

\(^{68}\) See Chapter VI, Recommendations VI.1–VI.10.
\(^{69}\) See Recommendations VI.1–VI.4.
\(^{70}\) See Recommendations VI.5–VI.9.
A. IMPLEMENTATION OF CMBP REPORT RECOMMENDATIONS RELATED TO TRANSPARENCY AND DISCLOSURE

INDUSTRY EFFORTS TO IMPROVE TRANSPARENCY AND DISCLOSURE

Since the inception of the crisis, significant work has been undertaken by industry bodies and progress made in increasing transparency as recognized in item number 57 of the Progress Report on the Actions of the London and Washington G20 Summits released in September 2007. This progress is summarized below.

ASF, AFME/ESF and Commercial Mortgage Securities Association (CMSA) programs to establish disclosure standards are to be complied with by issuers of RMBS, CMBS, consumer ABS, and ABCP securities. These programs are designed to ensure that investors, rating agencies, and others have the necessary initial information in an appropriately standardized form on the underlying loans and underwriting standards to develop informed and effective opinions as to the riskiness of securities. The AFME/ESF makes clear that “issuers which have endorsed these Principles will state in any Prospectuses that they intend to comply with these principles.”

ASF and AFME/ESF programs to establish reporting standards are to be complied with by the servicers of the loans underlying RMBS and other consumer, real estate, and corporate ABS. These programs are designed to ensure that investors, rating agencies, and others have the necessary ongoing information, in an appropriately standardized form, on the underlying loans and underwriting standards to develop informed opinions as to the value and riskiness of the securities.

Quarterly reports by industry associations on “securitization data” are consolidating relevant aggregated US and European data about the securitization markets. The quarterly report is produced “in order to provide further transparency to market participants and assist policymakers in their monitoring and assessing of trends in the securitization market.” The report covers asset-backed securities (ABS), commercial mortgage-backed securities (CMBS), residential mortgage-backed securities (RMBS), collateralized debt obligations (CDOs), and asset-backed commercial paper (ABCP).

Principles for managing the distributor–individual investor relationship were developed by the Joint Associations Committee. In July 2008, the Joint Associations Committee, comprised of five industry associations—ISDA, SIFMA, International Capital Markets Association (ICMA), London Investment Banking Association (LIBA), and AFME/ESF—produced its second set of principles related to structured products. These global, non-binding Principles for Managing the Provider–Distributor Relationship address a

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72 First published March 31, 2008.
73 Commercial Mortgage Securities Association; European Association of Co-operative Banks; European Association of Public Banks and Funding Agencies; European Banking Federation; European Savings Banks Group; European Securitisation Forum; International Capital Market Association; London Investment Banking Association; and the Securities Industry and Financial Markets Association, Ten Industry Initiatives to Increase Transparency in the European Securitisation Markets, 2 July 2008.
wide range of issues affecting the distribution of retail structured products to individual investors, including the provision of information. These principles complement the JAC’s 2007 Principles for Managing the Provider-Distributor Relationship.

**Code for Financial Reporting Disclosure was developed by the British Bankers’ Association.**

Most recently, the British Bankers’ Association (BBA) released its Code for Financial Reporting Disclosure in October 2009 to correspond with the UK FSA publication of Discussion Paper 09/5, Enhancing Financial Reporting Disclosures by UK Credit Institutions.

This code commits BBA members to a “regular dialogue on financial statement disclosures” with their supervisors to “enhance comparability and understanding” and to combine quantitative disclosures with “sufficient qualitative narrative to meaningfully explain [their] significance.” This report is an encouraging sign that the industry and supervisors can work together to build a meaningful disclosure regime. The BBA is working with the FSA to ensure acceptance of the code approach, which would better allow firms to communicate the specifics of their unique businesses to the market and thereby improve market confidence.

**Improvements in liquidity disclosure are based on IIF Recommendations and Basel Committee’s Principles for Sound Liquidity Risk Management and Supervision.**

The Institute’s perception is that firms have substantially improved their liquidity disclosures along the lines of Recommendation VI.10 of the CMBP Report, which refers to liquidity disclosures, and the Basel Committee’s Principles for Sound Liquidity Risk Management and Supervision.

At this writing, the industry is awaiting new international liquidity principles from the Basel Committee, which may include disclosure issues. While the Institute has supported further liquidity disclosures, it remains concerned that it is essential to distinguish the purposes of disclosure both to avoid overload and to avoid disclosure of sensitive information properly kept confidential between firms and supervisors. Keeping the purposes of disclosure in focus will help contain the serious problem of information overload. Too much information can be and has been as much a source of opacity as too little. Thus, disclosures should be kept “relevant and useful” for their intended purposes and users.

**MEASURES BY THE OFFICIAL SECTOR TO IMPROVE TRANSPARENCY AND DISCLOSURE**

Regulatory reforms also are developing transparency requirements and guidelines on product transparency and disclosure. While these reforms are not yet complete, among the official requirements, industry guidance, market demand, and evolving practice there can be no doubt that the overall sweep of product transparency and firm disclosures will be dramatically different a year from now compared with that before 2007. The following discussion touches on only a few of the many significant official-sector developments.

The IOSCO has prepared a set of proposed disclosure principles to apply to “listings and public offerings of asset-backed securities.”

Asset-backed securities (ABS) are defined for this purpose as those securities that are primarily

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76 Financial Services Authority DP09/05, Enhancing Financial Reporting Disclosures by UK Credit Institutions, October 2009.
serviced by the cash flows of a discrete pool of receivables or other financial assets that by their terms convert into cash within a finite period of time.\textsuperscript{79} Industry associations are commenting on these principles, which raise several specific issues. However, overall they show the \textbf{substantial changes being made in product disclosure}.

In June 2009, the CEBS released an assessment of banks’ Pillar 3 disclosures,\textsuperscript{80} which found that “banks have made a huge effort to provide market participants with information, allowing a better assessment of their risk profile and their capital adequacy.” Further, the report found that banks had heightened the level of quantitative and qualitative disclosure on their credit risk and securitization activities. However, it identified the following areas for further enhancement: (1) composition and characteristics of own funds, (2) back-testing information for credit risk and market risk, (3) quantitative information on credit risk mitigations and counterparty credit risk, and (4) granularity of information on securitization.

The IIF organized a meeting with the IBFed in London at which public- and private-sector views were exchanged, CEBS also has engaged in a dialogue with the final users of Pillar 3 disclosures to assess whether this information fits their needs.

In October 2009, CEBS released a consultation paper, \textit{Disclosure Guidelines: Lessons Learnt From the Financial Crisis}, which serves as a guide to financial institutions in providing adequate public disclosure. The guidelines take the form of high-level principles and address both the form and content of disclosures while also providing guidance on presentational aspects. The Institute agrees with CEBS’s contention that “generic disclosures which simply add quantity rather than quality of disclosure and fail to convey meaningful information should be avoided” and believes that comprehensive but not overwhelmingly detailed or complex disclosures are an essential aspect of any new financial regulatory framework.

While discussions with the official sector will inevitably raise specific technical questions and balancing issues that need debate, the clear trend is toward more meaningful, effective disclosures that will reinforce market discipline and prove useful for regulators, investors, and the general public.

\textbf{IMPRESSING MARKET INFRASTRUCTURE}

\textit{Major progress continues to be made in improving the operation of the OTC derivatives market, including CDS.}

Since 2005, the industry, through the Operations Management Group,\textsuperscript{81} has been closely engaged with supervisors in a range of initiatives to improve risk management, processing, transparency, and the systems and procedures for carrying out OTC derivatives business. Over the recent period, this effort has continued at an increased pace.

Transparency in these markets results from contracts being either cleared by a central counterparty or recorded in a trade repository.

In June 2009, members of the industry entered into several further commitments concerning the operation of these markets. These included commitments with respect to recording in trade repositories of transactions (including CDS and other OTC derivatives) not cleared through a CCP, to be achieved over identified

\textsuperscript{80} CEBS, \textit{Assessment of Banks’ Pillar 3 Disclosures}, June 2009.

\textsuperscript{81} Established in December 2007, the Operations Management Group is a senior-level, strategic group whose general mission is to examine and effect fundamental change in current front-to-back processes for all OTC derivative products. It includes representatives from the buy-side and certain trade associations, including the ISDA, the Managed Funds Association (MFA), and the SIFMA.
time periods. The IIF fully supports their commitments.

Also, the industry is working on developing a new and independent utility to facilitate hedging of unsecured OTC derivative counterparty credit risk. This is intended to mitigate complex OTC derivative risks to make them more efficiently cleared and distributed through the professional market or a CCP. This is related to the ongoing work of ISDA on standardization of documentation and procedures and will include relevant valuation and disclosure features. While this work is in progress, the Institute is encouraged by the depth and extent of the undertaking thus far.

Enhanced transparency and disclosure is needed for reliable price discovery mechanisms. Transparency is key for robust, smoothly functioning markets providing reliable price discovery mechanisms. Recommendations VI.6–VI.9 of the CMBP Report and Section 5.2 of the Restoring Confidence Report support increased market transparency and disclosure of OTC derivatives through transaction reporting via regulated transaction repositories to the relevant regulatory authorities. This will augment regulatory oversight to prevent market abuse and help firms manage concentration risk.

Transaction reporting is already well under way in CDS via the Depository Trust and Clearing Corporation’s (DTCC) Trade Information Warehouse. The industry is committed to providing transaction reporting to a trade repository of all credit derivative trades that are not subject to CCP clearing.

A further indication of progress toward enhanced levels of transaction reporting for other derivative transactions is the initiatives agreed in the industry letter of June 2, 2009, to the President of the Federal Reserve Bank of New York. These initiatives are fully supported by the Institute.

As pointed out in the ISDA response to the Turner Review of June 18, 2009, however, note should be taken of the confidential nature of transactions between buyer and seller and the likely detrimental effect on liquidity provisions before considering publication of information regarding individual transactions (i.e., trade reporting) to a wider audience.

A variety of pre-trade price discovery mechanisms for OTC markets already exist, with dealers providing price information for flow products to clients during trading hours, including live posting of dealable prices. The industry will continue to support the provision of such services going forward, with increased pricing availability via electronic systems and greater aggregation of market prices across dealers via electronic multi-dealer trading platforms and making use of data consolidators such as Markit or other providers. Availability of market prices is therefore not dependent on a shift of all OTC trading business to an established exchange, as some have proposed.

In September 2009, IOSCO published a consultation report on Transparency of Structured Finance Products, which provides guidance to market authorities on enhancing post-trade transparency of structured finance products in their jurisdictions. This report usefully recognizes the range of considerations and needs that must be met in devising appropriate disclosure regimes for different markets, which have different types of participation and liquidity characteristics and hence different disclosure needs.

While IOSCO encourages members to consider enhancing post-trade transparency in their jurisdictions, it also recognizes the sensitive

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interaction among pre-trade information, post-trade disclosures, and market liquidity. They make clear that post-trade transparency should be provided in the manner most suited to the specifics of each market and with sensitivity to the needs of market makers, as well as other market participants, for the maintenance of liquidity. Moreover, it concludes that in cases in which it is appropriate to introduce post-trade transparency, this should be done in a step-by-step or phased-in manner in some jurisdictions.

This brief review is not intended to take a substantive position on any of these matters, only to illustrate the basic point, too often forgotten, that widespread and very basic changes in transparency and disclosure have been taking place. Although the process is not complete, the direction of development is clear: while there will no doubt be a period of adjustment and readjustment to get the mix right, the new market that emerges from the crisis will benefit from substantially enhanced transparency and disclosure, and the goals of the IIF’s 2008 Recommendations on this point are expected to be substantially achieved.

B. THE NEXT PHASE: TRANSPARENCY AND SYSTEMIC RISK

The interconnectedness of the global financial system suggests a need for greater systemic exposure and product transparency to help mitigate systemic risk.

In October 2008, the IIF established a Sounding Board of senior market participants, with the assistance of McKinsey & Co., to study the issue of interconnectedness as a central feature of the global financial system. The results stressed the benefits of the current interconnected financial system but also further development of safeguards that would help preserve and enhance those benefits to the greatest extent possible while mitigating sources of risk.

The interconnectedness of the market can be a powerful tool for generating finance for the real economy, but the nature of the connections across markets, clearing systems, and products will require ongoing attention to the availability of information to firm managements; market participants; and systemic, conduct of business, and prudential regulators.

Many of the issues so raised are being addressed by the initiatives discussed above. However, ongoing analysis and experience gained through the new macroprudential oversight processes at the international and national levels are likely to require focus for the near future on the following:

- **Systemic transparency:** sufficient transparency concerning the exposures created, risks undertaken, macroeconomic underpinnings of the market, and interconnections among market participants for the authorities charged with systemic stability oversight to have a clear view of the overall levels and distribution of risks in the area and thus to be sufficiently informed to make sound judgments concerning the need for and type of intervention;

- **Exposure transparency:** sufficient transparency so that general market participants (e.g., investors and creditors) either know the extent to which a particular entity has exposures in particular markets or to certain product types or counterparties or that such exposures are protected against loss in the case of default of another participant (e.g., by CCP structures)—in other words, transparency that is sufficient to avoid a crisis arising from fear of unknown exposures among key participants; and
**Product transparency**: a degree of transparency such that every participant in the market is able to reach a sufficiently well-informed judgment as to the risks of the product.

Based on the Sounding Board’s initial findings, the IIF established the Interconnectedness Oversight Group (IOG), which is composed of a few very senior executives who will consider emerging needs for further work on broad questions arising from interconnectedness of financial markets. As part of its mandate, the IOG also will investigate the need for greater transparency (among other criteria) to mitigate systemic risk in global financial markets over the course of the next year. Issues identified will be referred to the appropriate specialized IIF working groups or perhaps to other entities.

As a related matter, the Institute’s Market Monitoring Group is charged with making regular assessments of emerging vulnerabilities in the market and raising them with the public-sector bodies focused on macrofinancial stability as appropriate. Where information, transparency, or disclosure issues are seen as creating vulnerabilities, they will be referred for further work to the appropriate IIF committees or highlighted to public-sector bodies.

**CONCLUSION**

As the preceding brief survey suggests, much has been done and much continues to be developed under the rubrics of transparency and disclosure. Because of the breadth and depth of this work, the IIF did not think an additional work stream was needed at the present time to develop further Recommendations. There also was a sense that the sum and substance of the 2008 Recommendations were being addressed adequately by multiple industry and regulatory initiatives.

However, the transparency needs of the new global marketplace, with its heightened prudential and conduct-of-business regulation and its new macroprudential and systemic oversight, will continue to evolve. As discussed, the Institute will continue to review developments and, if further needs are developed, it will pursue them, making comments as appropriate. Attention will always be needed to balance the volume and specificity of mandated disclosures with what will be truly meaningful. Further, of course, the product and national associations will comment diligently on proposals from policymakers and regulators, particularly on trade reporting (where the very real trade-offs between post-trade transparency and liquidity in many markets need to be kept in mind), which continue to evolve.
SECTION VII

Industry’s Commitments: Restoring Confidence, Creating Resilient Financial Markets

The crisis that developed two years ago revealed widespread weaknesses in many financial firms’ business practices, as well as notable deficiencies in market operations, which are being addressed as discussed in detail in this Report. At the same time, the crisis exposed misalignments and gaps in regulatory and macroeconomic policies. Much progress has been made by the official sector in developing a strengthened regulatory framework—one geared more toward containing systemic risk. But much remains to be done, and there is a significant open question whether the global regulatory convergence, consistency, and cooperation envisioned by the G-20 and sought by the FSB will in fact be achieved.

In July 2009, the IIF, through its Special Committee on Effective Regulation, published the Restoring Confidence Report, which provides a private-sector perspective on the evolution of the international markets and the reforms being developed under the broad auspices of the G-20 and the FSB. It addresses measures needed to attain greater financial stability in a manner that will support sustainable international growth.

Whereas the present Report is intended to document and advance progress by firms in line with the 2008 Recommendations, the Restoring Confidence Report aims to elucidate the industry’s responsibilities in interaction with the official sector as international regulatory reform goes forward.

The Restoring Confidence Report stresses that financial regulatory reforms must better align incentives for sound risk management, improve transparency, and enhance resilience over the business cycle. It notes the overarching need to build a strong international financial system in which regulation should work with the market, investors, and creditors to bring market discipline to bear and be framed with the costs and benefits of regulatory measures very much in mind.

The Restoring Confidence Report makes several recommendations to the official sector intended to suggest ways to frame regulatory reforms to reinforce changes being made in the industry. It recognizes that lasting stability depends on the interaction of well-designed regulation with effectively functioning international markets and well-managed firms. Effective market discipline will compel the industry to make sure that the progress already evident is carried forward, current challenges are overcome, and future vulnerabilities recognized and mitigated. Because effective and lasting reform needs to be built on an integrated view of markets and regulation, progress will necessarily be a shared endeavor between the public and private sectors.

Therefore, the Restoring Confidence Report includes a series of Commitments by the industry that are complementary to its Recommendations to the official sector, both being aimed at increasing resilience, meaningful market discipline, and the effective and efficient achievement of stability goals. A list of the industry Commitments may be found in Box 1 on pages 91–93; to see these Commitments in the context of the related Recommendations to the official sector and a full discussion of each point summarized in a Commitment, see the Restoring Confidence Report.
Among the most important Commitments of the *Restoring Confidence Report* are Commitments II and III that stress that firms will put high priority on living up to the Principles and raising market practices to the high standard of the Recommendations of the *CMBP Report*. The present *Report* documents that firms have already devoted substantial resources and effort to living up to those Principles and Recommendations. It is further intended to provide additional impetus to the Commitments in the *Restoring Confidence Report* by discussing what has been done and where challenges remain and by providing the additional analyses contained in Sections I–VI. The Commitments by the IIF membership made in the *Restoring Confidence Report*, however, also address an additional dimension: the need for constructive, positive interaction with regulatory and supervisory intervention to ensure the effectiveness of the far-reaching regulatory reforms that are being put in place by the G-20, FSB, Basel Committee, IOSCO, International Association of Insurance Supervisors (IAIS), and national authorities and to work with those authorities in designing more robust and appropriate capital, liquidity, leverage, and other requirements.

For example, Commitment I reflects the desire of firms to devote the necessary resources to making the colleges of supervisors mandated by the FSB effective; Commitment V commits firms to working to make successful the outcomes-focused, more judgmental supervision (called for by the IIF in its 2006 *Proposal for a Strategic Dialogue on Effective Regulation*) that has clearly been made necessary by the crisis. Importantly, Commitments VI–IX and XIX focus on the Institute’s and members’ commitment to work with the public sector to achieve new capital and leverage regulation that will in fact make possible a more resilient global financial system that can still generate the credit needed by a globalized real economy.

Similarly, Commitments XIV–XVII provide for engagement with the official sector in the challenging but essential tasks of developing meaningful macroprudential oversight and dealing with the perception that some firms are “too big to fail,” including by appropriate attention to analysis and planning for the risks posed by a specific firm so that it could exit the market in an orderly manner, should that become necessary (Commitment XVII), and by improving market infrastructure to mitigate the risks of interconnectedness (Commitments XX–XXII). Certain other Commitments, for example with respect to liquidity and compensation, are discussed in relevant sections of this *Report*.

Of course, under some of the topics covered by the Commitments, there remain divergences of views within the regulatory community and between regulators and the industry. For example, with respect to Commitment IX on leverage, the Institute agrees that leverage got out of hand in the pre-crisis period but feels strongly, for reasons developed at some length in the *Restoring Confidence Report*, that new measures to prevent excesses in the future should be channeled through rigorous Pillar 2 supervisory review processes, where the facts and circumstances applicable to each firm can be considered rather than a hardwired Pillar 1 leverage ratio.

This *Report* is intended as a further development of the industry’s commitment to continue to improve practices to build a more resilient global financial market.
Box 1. Commitments of the 2009 IIF Report Restoring Confidence, Creating Resilience

Importance of Coordination in an International Market

**Commitment I:** The IIF membership will dedicate the necessary resources and engage with their colleges of supervisors on a high-priority, fully committed basis.

A Shared Responsibility to Achieve Resilience

**Commitment II:** The IIF membership will as a matter of first-order priority continue the good progress to bring their risk management and other business practices into alignment with the recommendations of the Market Best Practices Report.

**Commitment III:** The standards set out in the Market Best Practices Report have become a benchmark for large, internationally active firms. The industry welcomes the use of this and other reports, such as the Senior Supervisors Group Report of March 6, 2008, in the supervisory assessment of the quality of risk management of such firms.

**Commitment IV:** The industry is committed to continue to implement reforms in compensation practices so as to align these practices with the IIF Principles and recommended leading practices, as well as with the FSB Principles. In this regard, the IIF intends to monitor developments in industry practices and to provide an informal assessment in the forthcoming report of the IIF Steering Committee on Implementation in November 2009 and to conduct a survey of industry practices in 2010.

**Commitment V:** The IIF membership will undertake the efforts and investment necessary to promote the success of more outcomes-focused, judgment-based supervision. This will include developing standards and norms of behavior to underpin a better quality of relationship with supervisors.

Achieving Resilience Through the Cycle With Prudential and Accounting Standards

**Capital**

**Commitment VI:** Levels of capital in many parts of the system were insufficient. The IIF agrees that overall levels need to be increased, within the framework of the Basel II risk-based approach, as compared to pre-crisis levels. The IIF membership stands ready to work with the regulatory community on objective analysis of the cumulative net impact of proposed regulatory changes.

**Commitment VII:** The IIF supports measures to counter cyclicality by building resources in good times that can be drawn down in bad times.

**Commitment VIII:** The IIF agrees that the quality of capital required needs to be reviewed. The IIF membership is ready to work closely with the official sector to achieve an outcome that reflects the lessons learned from the recent period.

Controlling Leverage

**Commitment IX:** The IIF agrees leverage was too high and needs to be appropriately controlled in the future.
Reform in the Financial Services Industry: Strengthening Practices for a More Stable System

Liquidity

Commitment X: IIF members have already enhanced their liquidity risk management and, subject to difficult market conditions, have been building liquidity buffers and working toward compliance with the IIF and Basel liquidity principles. In addition, they continue to manage their liquidity to ensure that local liquidity needs can be met. IIF Members will continue the ongoing enhancement of their approach to liquidity management.

Commitment XI: Good liquidity risk management should take into account local market needs. In addition, the IIF is committed to exploring ways in which firms could organize their cross-border business to reduce the concerns of authorities that individual jurisdictions would suffer disproportionate loss in the event of an insolvency. This should take place in the context of the ongoing dialogue between large firms and the authorities concerning the information necessary to plan for the orderly exit of the firm should that prove necessary as discussed in Section 4. Such an approach would take into account the legal structure of the group and differences in insolvency laws across jurisdictions. The IIF stands ready to work with the official sector to reduce the real dilemmas that the tensions between global and local goals for good liquidity management present.

Commitment XII: It is necessary to hold liquidity buffers against liquidity risk. This is an important part of a robust overall approach to liquidity risk management.

Commitment XIII: The IIF agrees that a significant component of funding should be comprised of stable elements, as part of well-understood overall funding plans.

Financial Stability Through Macroprudential Oversight

Commitment XIV: The IIF’s recently established Market Monitoring Group is committed to identifying and assessing systemic vulnerabilities and issues emerging in the markets. It stands ready to discuss such developments with the official sector.

Commitment XV: The IIF agrees that authorities will require access to all relevant and material information to carry out effective financial stability oversight. The industry will work with regulators to identify and provide such information.

Commitment XVI: The IIF agrees that the degree of systemic relevance of a firm may require more intensive supervision. Members are committed to working with supervisors to make such an approach effective.

Commitment XVII: The IIF agrees that the supervisory review process applied to firms should be founded on a risk-based approach. Accordingly in determining what if any supervisory measures should be taken, supervisors should incorporate analysis of the nature and degree of a firm’s impact on the system should that firm fail. Members are committed to working with supervisors to make such an approach effective.
Commitment XVIII: Consistent with the principle that no firm should be designated too big to fail, large or highly interconnected firms should examine with the authorities the risks that their role in markets and products create, to help the authorities assess what would happen in event of their failure. The ongoing dialogue between such firms and their authorities should include consideration of all the information necessary to plan for the orderly exit of the firm should that prove necessary.

Commitment XIX: Riskier activities should be subject to appropriately risk-weighted capital requirements. Such capital requirements should be calibrated so as to reflect the risk of those activities, and consideration should also be given to relevant cost of funding issues.

Improving Market Infrastructure and Mitigating Risks of Interconnectedness

Commitment XX: In line with the commitments already made by industry participants, and reiterated in the industry letter of June 2, 2009, to the President of the Federal Reserve Bank of New York, and building on ongoing progress, industry is committed to CCP clearing of eligible standardized CDS contracts and OTC transactions.

Commitment XXI: In line with the continuing work of ISDA, standardization of CDS and other OTC contracts should be pursued to an appropriate degree.

Commitment XXII: In line with the industry letter of June 2, 2009, to the President of the Federal Reserve Bank of New York, to the extent that CDS contracts, OTC interest rate derivative trades, and OTC equity derivative trades are not subject to CCP clearing, they will be recorded in a trade repository to ensure appropriate transparency of the market.
Risk governance – agenda for change
Survey of the implementation of the IIF’s Best Practice Recommendations

December 2009
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Executive summary

In July 2008, the Institute of International Finance (IIF) published the final report of the Committee on Market Best Practices, which set out principles of conduct and best practice recommendations for banks in the light of the financial crisis. This was part of the industry’s response to the causes of the crisis and recognised the need to strengthen governance and risk management going forward. Other recommendations were produced by the Counterparty Risk Management Policy Group and by the official sector — the Senior Supervisors Group and Basel Committee.

In March 2009, as part of the review of implementation of the recommendations in the Market Best Practices report (which was led by the Steering Committee on Implementation), the IIF asked Ernst & Young to conduct a survey of banking executives to gauge the gaps against the recommendations, and identify what they are doing to bridge them. (For the survey questions, please see the appendix).

The strong message from the banks surveyed was that the industry had indeed moved quickly to carry out assessments against the recommendations, particularly in the countries most affected by the crisis. Most banks in these countries had identified a substantial number of gaps and had instituted programmes of work to address them. Another core message was that these programmes would be ongoing for several years or more. Whereas some governance issues could be achieved quickly by changing roles and responsibilities and reporting lines, other changes involved major IT re-development, the creation of new risk assessment measures and, in some banks, cultural change which would take longer.

Although the message was that resourcing of the necessary projects had been given a high priority, banks have been wrestling with competing resourcing demands caused by the need to manage the organization through the crisis, as well as initiate the large number of projects needed to strengthen risk management going forward.

Another challenge that several banks mentioned was the uncertainty over the path of regulation. The regulatory environment is changing fast in the light of the crisis and this makes planning the right infrastructure for the next 10 to 15 years significantly harder.

The important highlights of the survey:

► Key areas on the agenda for change are governance and risk appetite, the role of the risk function, stress testing and risk transparency. Liquidity risk is also high on the agenda of a number of banks. However, in some countries banks were looking for greater certainty regarding the regulatory landscape before embarking on widespread systems change.

► Most banks reported that they have carried out a gap analysis against the IIF recommendations as well as, in most cases, the G20 report and the Senior Supervisors’ recommendations. For a number of banks, the gap analysis would become an ongoing regular assessment.

► Most banks said there was significant board and senior management involvement in sponsoring the review and following up on areas for improvement. In some countries, reports on gaps had to be presented to supervisors.

► The answers regarding the degree of change needed in response to the crisis and different industry and official sector recommendations varied widely depending on several factors:

► Banks severely affected by the crisis and which had experienced the largest losses were, as would be expected, planning the most radical changes (one referred to a risk revolution).
Other banks in those G10 markets, which had been significantly impacted, were also planning substantial changes.

In markets which had been far less affected by the crisis, banks were learning from the problems elsewhere and were reviewing controls and making some changes.

Some non-G10 banks were still in the throws of implementing Basel II and in particular, the bank-wide risk assessment and capital planning required under Pillar II.

One striking finding is that banking systems, which had been affected by a significant crisis in the previous 15 or so years, seemed to be less drawn into structured products and were far less impacted by this crisis. A number of banks said that the earlier crisis had led to substantive reviews of risk governance and risk appetite which left them less exposed to some of the higher risk products in this crisis. Some also mentioned that regulatory restrictions, introduced after the past problems, had left them less exposed to structured products.

The time scales for dealing with gaps vary — most banks report that they have acted immediately on some aspects, while other remedial action could take 12 to 24 months or even longer to complete. The greatest impediments to swift action are data and systems and in some cases, cultural change. All banks are currently facing major pressures on particular types of resource. The current remediation activity has been given the highest priority, but banks are relying on few skilled resources.

Overall this is a journey which will take time to complete.
Summary of results

The most important areas of focus for the surveyed banks are shown below. The results show the whole sample and also various sub-samples of firms. The sub samples are G10, non G10 and then the markets covered by the survey which were most affected by the crisis – UK, US, Switzerland, the Netherlands and Germany.

Top issues across all banks

Top issues across G10 banks

Top issues amongst the UK, US, Swiss, The Netherlands and German banks

Top issues across non-G10 banks
Survey approach and scope

The survey was conducted through interviews with CEOs, CROs and CFOs (the CEOs were not involved in all of the interviews). The survey covered 38 of the largest banks in over 20 countries across all the major geographic regions. In addition to the banks surveyed, a further 10 banks contributed views in discussions on the changes being made and impediments being faced. Some banks provided detailed documents covering the self assessment process and the results, as well as remediation being undertaken, to support the interviews.

The range of banks and countries covered is set out below.
Identifying gaps against recommendations

In almost all cases, banks reported that CEOs and boards sponsored an exercise to assess the extent to which the recommended best practices are being met. Amongst the G10 banks this exercise was typically combined with an assessment against a range of other comparable recommendations (Senior Supervisors Group (SSG), Counterparty Risk Management Policy Group (CRMPG III), Basel Committee on Banking Supervision (BCBS)). Generally in the G10, the gap analysis was given a high priority.

Many banks (in particular those most affected by losses) had not waited for ‘best practice’ guidance to become publicly available before starting to review their processes, but even so, the recommendations had provided a comprehensive check list of areas to review. Also, for a number, the highest priority had been dealing with the crisis itself which had pushed back the starting point of reviews so that they coincided with the recommendations being released. For many non-G10 banks the recommendations provided access to key messages from the experience of banks more affected by the crisis. There was universal respect for the IIF recommendations even though not all the guidance was appropriate for every bank sampled.

The majority of banks took a top-down, firm-wide approach, to identifying the gaps. Sponsorship from the board and senior management was instrumental in driving the process forward to maintain momentum. It also meant that actions to deal with gaps took priority when resource decisions were made. In many banks, the activity was orchestrated by the group risk function which was responsible for translating the guidelines into a set of requirements, which were appropriate to the bank’s business. A typical approach was that, having prepared the list of requirements (normally in a spreadsheet), these were then distributed to the various business units for each unit to complete their own self assessment. The American and Japanese banks adopted a more formal approach to carrying out the gap analysis, to meet local regulatory requirements.

Progress on the gap analysis was driven forward by the chief risk officer (CRO), who was often expected to provide regular updates to the board on the progress of the analysis and, more latterly, the progress on closing the gaps identified. In some instances, the risk committee was involved to provide general oversight to the process.

In some cases, banks had set up small audit teams to review practices against all recommendations across all functions and business lines. Gaps were turned into comprehensive action plans with accountable owners and with access to the appropriate resources. In others, a higher level, more qualitative view was taken.

In practical terms, banks would usually classify any gaps into the following two categories according to the degree of urgency and materiality:

1. The findings which needed to be addressed immediately/or could be handled in a short period.
2. The findings which should be addressed and reaffirmed over the medium term.

With the exception of a couple of banks, which were completing the gap analysis in mid 2009, the majority said they had completed the analysis by the end of 2008 and, by that time, had also developed plans to remediate the key areas. Once the gap analysis had been completed and communicated to the board, remediation projects had been mobilized very quickly.

A number of those banks, which have suffered the largest losses over the last two years, typically feel that they are at least half way through their change programme. In general, banks reported that the highest priority for remedial activity was the need to deal with particular gaps identified by investigation into the causes of loss. However, the publication of ‘best practice’ guidance and recommendations had also re-affirmed the priority areas.
A number of banks said that the review against the recommendations was not regarded as a one-off exercise. A number of large international banks have added it to the on-going scope of internal audit reviews. Internal audit will periodically update the review of the business process against the IIF recommendations going forward.

Some banks had been under pressure from regulators to conduct a gap analysis and others cited pressure from a range of other stakeholders. One bank mentioned ratings agencies, significant depositors, analysts and shareholders. Several banks referred to regulatory pressure having led to a more formalized process and enabled more spending on remediation.

**Board and CEO involvement**

Many respondents reported that boards had shown a keen interest with respect to the measures needed to enhance risk controls and governance in light of the financial crisis, and therefore wanted updates on gap assessments and remedial action. In most cases, periodic reports were being made to either the full board or a board-level risk committee. With only a couple of exceptions, the CRO community are expecting to report regularly, quarterly if not monthly, to the board on the progress being made to close identified gaps.

In those banks where internal audit was involved in the gap analysis process, the boards expected a quarterly progress report from internal audit. Going forward, where internal audit was tasked with regularly updating the assessment, reports would also be presented to the board.

All respondents reported that their boards had shown a marked increase in the level of interest in risk management, particularly with respect to stress testing. In many cases, governance changes were explicitly increasing the role of the board in these areas or making their role clearer. For example, in terms of setting an explicit risk appetite, which management would then set controls to deliver. There are, however, challenges in delivering this as well as ongoing effective assessment of the strategy and risk by the board.

**Differences across geographic areas**

The financial crisis has not hit all countries equally hard — the US, Switzerland, UK, the Netherlands, Ireland and Germany have seen the greatest write-downs in balance sheets. Other countries have been less affected. One general pattern to emerge from the survey is that banks in a number of countries, which had been significantly affected by earlier stress periods, felt that they had revised their risk governance and risk appetite earlier leaving them less exposed to this crisis. In part, this had been reinforced by local regulatory action. This is particularly true of banks in Sweden (affected badly in the early 1990s), Canadian banks (which re-trenched after 2002), Japanese banks (the 1990s), Egyptian banks (9/11) and Australian banks (early 1990s). This is also true of the Latin American banks. Brazilian banks had, for example, faced more prescriptive prudential banking regulations as a result of efforts to stabilise the economy in the 1990s. Structured investment vehicles (SIVs) had not been permitted and real estate lending had been restricted.

These banks were, in many cases, reviewing processes again in the light of the experience of banks in other countries, but felt they had fewer gaps because of the earlier action taken. Many banks attributed their limited involvement in structured products (and therefore exposure to the fundamental causes of this crisis) to the earlier action taken to rein back risk appetite and increase risk governance. One leading Canadian bank had, for example, exited the structured product market in 2005. The Canadian banks had also put limits on the percentage of earnings contributed by capital market businesses. Canadian and Australian banks had been particularly cautious regarding loan-to-value (LTV) ratios on mortgage business. Some Scandinavian banks cited the importance of having long-standing board members, who remembered the earlier crisis, which had made the bank more cautious in this boom.
All banks, even in the affected countries, found that there were a large number of areas where they were already fully compliant with many of the applicable recommendations. Also, in many cases, not all recommendations were applicable because of the nature or range of business.

The most extensive change programs were in the banks which had made substantial losses – many making root and branch changes to governance and risk controls as well as culture.

**Challenges and impediments**

Dealing with the crisis led to severe pressure on key individuals and this impacted banks’ capacity to start reviews and take remedial action in some cases. Also a number of bank mergers have been triggered by the crisis and this is absorbing considerable amounts of management time, as well as IT and data management resource.

Against this backdrop, taking on a major wide-ranging remedial program looking at governance, risk controls and remuneration has been a challenge. But it is clear from the survey that this is regarded as a priority and, for a number of banks, the highest priority.

Even so, some changes will take time to complete. The most frequent impediment highlighted was data and systems. Banks have a number of legacy systems that make aggregation (or at least quick aggregation) of data difficult. Some of the new approaches being adopted to group-wide stress testing or risk transparency and improved management information will rely on the development of better systems and data and this will take time. Integration programs, where different banks or banks and investment banks have merged, will be drawing on the same resources. One bank referred to IT as having been a major area of under-investment, particularly in investment and corporate banking and the full implications were still to be understood. There were also references to the industry having become used to tactical systems with less awareness of what “good” looks like. This would undoubtedly make change in the risk management area slower and more difficult.

Some banks highlighted the need for cultural change and a number said this would take time. Many banks referred to the need for a risk control culture to be embedded across the business. Others referred to the desire to reverse a “sales driven” culture and make it more risk sensitive but generally struggled with understanding how best to achieve this. Some banks have accelerated cultural change by replacing key individuals across the organization. In some cases, banks said that mergers have given scope to achieve cultural change across the organization by taking the best controls of each while closing down some of the most risk-taking businesses.

In almost every area bar one, the banks were confident that change could be achieved. The area that stood out as having the greatest impediments was remuneration. Again and again, firms said that they were revising the remuneration structure and wanted to make it more risk-based, and were exploring a longer horizon in terms of bonus payouts; but they were not confident that changes would be workable or would last in the face of pressure from the market. Several banks made the point that it would only take one or two large firms to break ranks internationally and to start poaching teams, by offering higher bonuses or less delayed bonuses, for the changes to start to unravel. Several banks said that, without some kind of international regulatory pressure, the changes would not last into the next boom.

In some other areas too, questions remain as to how long-lasting all the changes might be in the face of another boom. Several banks reported severe stress testing as now acceptable whereas, prior to the crisis, there had been much less receptiveness — severe stress tests being regarded as implausible.

Regulatory uncertainty is cited by several banks as slowing action on various fronts. Given the radical, and far-reaching nature of the changes being proposed, as well as the size of the programs involved, there is a concern about embarking upon expensive and potentially disruptive projects without fully knowing the requirements going forward.
Governance and risk appetite

81% – percentage of banks interviewed who treat as a top issue

91% – percentage of G10 banks who treat as a top issue

Banks which are changing their approach

The governance of risk and the development of clearer risk appetite were most frequently cited as being an immediate priority. Most felt that this area was pivotal. This was not just the case in the most affected banks; other banks were also learning from the crisis by focusing on the experience of banks that had been more severely affected. As part of this, the banks were in many cases reviewing policies and procedures and terms of reference for committees, as well as developing an explicit risk appetite. In some cases, on-going review procedures have been put in place. One bank, for example, had implemented a risk management enhancement program to review risk management structures regularly. Many banks were tightening controls around the markets where other banks were experiencing major losses. For example, enhancement of risk management of securitisation products was seen as important.

For many banks, enhancement of stress testing is seen as central to achieving improved risk governance. Likewise, improvements in risk monitoring are seen as key. Some banks cited the need to improve risk-return management as capital resources become tighter. To reinforce this, they are improving their economic capital allocation framework. A number of banks from regions that had experienced severe crises or pressures in the past 15 or so years had reviewed their governance structures, but felt that earlier changes had dealt with most of the recommendations. Indeed they felt that the changes they had made had meant they were less exposed to the products that had caused the crisis.

For banks from the more severely affected markets, changes were generally much more substantial, including significant re-working of risk governance. For some banks, this was a root and branch revision to governance and procedures, while others felt they had the fundamental governance structures in place but had to make them effective. One way to do this is to increase the voice and weight of the risk function and to achieve this, a change in...
culture and “tone from the top” is needed. Some referred to a “sales driven” culture which had predominated during the boom making it difficult for the voice of the risk function to be heard. The objective was to move to an environment where risks were owned by the organization as a whole, with a change in the culture.

Banks found there were gaps in the formalized risk control framework. A number of banks cited the fact that the risk function had not been involved in all key decisions. The role had been limited with regard to major strategic decisions and even the development of new products. In one bank, internal audit had been tasked with producing a report on the process of new product approval and the approach was going to change with greater focus on reputation risk, not just contractual risk. But this would take time to embed in the organization. In some banks, the group risk function had not had a role vis-à-vis some business areas and this was changing.

In a number of banks, moves have been made to enhance the stature of the CRO, in some cases changing reporting lines so that the CRO reports directly to the CEO and in others by appointing a more senior individual to the role — several US banks cited changes of this kind as important. Within the large US and UK banks, a general trend is that group risk has been given a greater influence in the development of the corporate strategy.

Many banks are enhancing risk reporting to the board or board-level committees. The aim is to provide reports that will facilitate decision-making by the board, with a focus on the type and style of information provided. One core way, for most firms, to improve governance from the top is the establishment of a clear risk appetite approved by the board. The goal is to make this sufficiently explicit that control structures and limit structures could be put in place by the executive to deliver it. This is not, however, proving straightforward to define for several banks and so is still work-in-progress. Likewise, discussions with board members in other forums indicate that greater involvement of the board in challenging strategy and risk is also posing issues for many board members — in particular how to be sufficiently aware of the risks in the bank to be able to pose an effective challenge to the executive.

The internationally active banks also expect to continue to work further to embed their risk appetite across business units. A common weakness highlighted is that the risk appetite developed and articulated at group level is seldom distilled into a version applicable for specific business lines. In one case, embedding the risk appetite was being accomplished with the establishment of firm-wide risk committees and functional risk committees (operational, credit, and market). These new firm-wide committees are now more empowered to make decisions and are more action-orientated. Two institutions quoted this as being the most significant of the changes they had implemented so far.

Other banks are trying to make the risk appetite a more effective tool by including more quantitative measures. For example, one UK bank, which now includes quantitative measures in its risk appetite, has rolled these out to each legal entity and linked the measures to six monthly operating plans. Senior management is now focusing on whether the measures are being met; issues are not sitting at the lower levels without senior management attention/escalation.

One major bank made the point that an explicit risk appetite is necessary to de-risk the business, decide on asset disposals and streamline the balance sheet. An important focus over the next 18 months will be the re-shaping of the business, with the sale of assets and business units to reduce risk. Also, major banking and insurance will be run as separate businesses to reduce the complexity of the organization.

Changes in policies and procedures have been effected by many banks already — they were seen by some banks as “low hanging fruit” which could be dealt with quickly. Many large G10 banks started making changes to their committee structures and terms of reference last year. There were no significant obstacles for firms making changes in this area — although, some cited a silo mentality between risk and finance functions and a general resistance to change as impediments. However, to really operationalize a change in the risk control environment,
other fundamental changes to stress testing and enterprise risk measurement and transparency were seen as essential since these pose greater systems and data challenges.
Liquidity risk

61% – percentage of banks interviewed who treat as a top issue

73% – percentage of G10 banks who treat as a top issue

Banks which are changing their approach

As was expected, the strengthening of liquidity risk management was mentioned in most interviews, but the priority and actions vary across the different banks sampled. For those banks which did not report liquidity as a key area, this was because they had already tightened procedures or were waiting to see what regulatory requirements might be needed. A number of banks involved in the Asian crisis said they had already tightened liquidity approaches. Likewise, banks which had in the recent past (pre-crisis) come under idiosyncratic pressure due to a sharp ratings downgrade, for example, had already changed operating procedures (although even these banks are re-looking at stress testing and contingency planning).

Several banks had used the IIF’s report, “Principles of Liquidity Risk Management” issued in March 2007, as a benchmark for gap analysis work and had already made improvements to deal with the recommendations. A few banks had already faced substantial tightening in liquidity regulation which pre-dated the crisis — banks in Egypt, for example, were already holding very large liquidity buffers.

A number of banks are changing their governance of liquidity risk or have already done so. Many are enhancing board reporting and board approval of the high-level liquidity risk appetite/contingency planning.

Banks are setting much more explicit limits on liquidity risk. Explicit risk tolerance levels are being established which take into account strategy, financial conditions, funding capability and risk appetite.
A number of banks are changing governance structures to give group risk a greater involvement in liquidity risk. Liquidity risk has traditionally been covered by treasury (reporting to Asset/Liability Management Committee (ALCO)) with group risk having no involvement — group risk’s sphere of operations was credit, market and operational risk. Going forward, CROs in a number of banks are now expected to have a greater role in monitoring and considering liquidity risk. The risk function will be involved in the modelling of liquidity risks (challenging assumptions/reviewing modelling approaches) and reviewing stress testing — both firm specific and market wide. In addition, some risk functions had little involvement in the selection of assets held as liquidity buffers in treasury — with reliance being placed on ratings to distinguish acceptable from unacceptable. This is changing in a number of banks. In particular, the North American banks have taken steps to integrate liquidity risk management into the risk governance process with the CRO now having a much greater oversight of the risk within the treasury compared with two years ago.

Many banks are enhancing their assessment of the magnitude of liquidity risk. The most affected banks have focused a great deal of effort on modelling liquidity under different scenarios, which has been a challenge. These improved risk assessments are being used to drive larger liquidity buffers.

Going forward, improvements in modelling and monitoring will require better data than is currently available in many banks. An outstanding area noted for continued investment was the need for good, detailed information about contingent commitments and liabilities. Better consolidated data and better management information are also areas of focus.

Several banks say they are changing the way that liquidity is charged internally. Banks are introducing mechanisms to develop inter-company charging processes for all aspects of liquidity. One bank is, for example, introducing a foreign currency transfer pricing framework; funding costs will be allocated to each business unit reflecting its business features. Most banks recognized that prior to the financial crisis they had not charged the business units appropriately for liquidity risk. The focus had been on, for example, average cost of funding, rather than the risk of an increase in funding demand.

Several banks said they are changing their business models to reduce liquidity risk, for example, by reducing reliance on wholesale funding. To achieve this, one bank is increasing internal charging for wholesale funding to encourage a move to a more balanced position.

Some banks are finding that the move to a more rigorous charging structure for liquidity is posing cultural challenges. There had previously been a lack of awareness of liquidity risk when considering growth strategies and this will need to change.

Banks are also considering improving disclosure of liquidity risk in some markets. This seems to be driven by regulatory requirements and Basel recommendations.
Culture and compensation

58% – percentage of banks interviewed who treat as a top issue

64% – percentage of G10 banks who treat as a top issue

Banks which are changing their approach

Culture, and supporting compensation structures, are seen as essential areas for change by the banks from the badly affected markets, but are much less of a priority for banks from other markets. Most of the former banks are already working to achieve fundamental changes in these areas.

In terms of culture, a number of banks mentioned the need to move away from a "sales driven" culture and this had been achieved by a number of changes: replacement of key individuals; the strengthened role for risk; as well as more focus on an explicit risk appetite and controlling to that appetite. There is also, for some banks, a clear focus from the top on de-risking the organization. At a time of severe global recession, the voice of those individuals who did not support the shift to a new culture was muted or they left. However, a number of banks said that there were pockets where there was still resistance to changing the culture.

Some felt that the sales-driven culture had, in part, been driven by the high returns on equity which the equity market had expected. Some banks pointed out how criticism had been levied against more conservative, less fast-growing, organizations by the market. For some interviewees this did beg a question of what would happen to the culture when the next boom occurs. This means that embedding new risk metrics and more intensive stress testing is extremely important.

On the other hand, banks which had suffered badly in past crises did say that this had led to a change in risk tolerance which had helped to protect them from the current crisis.

Most banks from markets which had been severely affected by the current crisis thought that compensation had reinforced the sales culture and it was an area that most of these banks wished to address in the near term. Some banks from less affected markets thought their schemes were more compliant with the IIF principles, although others were making changes.
For some it was a question of adjusting their approach rather than a fundamental change — for example, creating broader pools based on profit rather than revenue, increasing the focus on group results rather than individual businesses and using risk adjusted return on capital (RAROC) as a variable.

For those banks trying to achieve a fundamental change, there was a focus on some of the difficulties in measurement and approach; for example, the computation of long-term profits rather than revenues and implementing claw backs. In Scandinavia, there were also concerns over prohibitively difficult tax implications when spreading bonus payments over several years.

Many banks had made substantial changes already in terms of reducing the percentage of income from bonuses or spreading bonus payments across several years. This had led to some disquiet in trading areas but, at a time when staff numbers were being reduced and the whole industry was under pressure, few had voted with their feet.
Stress testing

56% – percentage of banks interviewed who treat as a top issue

59% – percentage of G10 banks who treat as a top issue

Banks which are changing their approach

Improving stress testing is a core focus for over half of the banks surveyed. The view across the industry is that stress testing has not been sufficiently severe and the scenarios have been too simplistic. One point made in several of the interviews was that the risk community had often suggested more severe tests but these had been rejected as implausible by other management. At a time of global recession, it is easier to gain support for more extreme testing. Indeed, one major bank spoke of now asking the question “what does it take to bankrupt the bank?”

US banks almost universally referred to the need to move away from ad hoc stress testing to a more systematic approach which is embedded in on-going risk management. An important element of this is linking stress testing to the risk appetite and integration of liquidity management into this process.

Some banks made the point that stress testing for market risk had been in place for some time but credit stress testing was newer and less well developed; their focus is to improve this.

Many other banks said that, although they were already performing stress testing, improvements are being implemented to achieve an integrated and comprehensive company-wide approach across all risk categories. Other banks referred to a continual review of their stress testing to assess appropriateness and ensure capital was adequate. Also, improved reporting of results and analytics are important, in order to embed the stress testing.

Several banks referred to the need to develop an approach to interactive scenario setting across the organization involving front office units. Other banks had adopted a more top-down approach and are focusing on building a framework to define scenarios quickly and run the tests in a short time frame. But a common theme is that model-based stress testing is not sufficient — more judgement is needed in defining and applying scenarios.
Some banks also referred to the need to build in the effects of own-rating downgrades more explicitly and to develop early warning tools for management. But there is also a much greater focus on system-wide stresses, not just the bank alone.

Banks are already implementing more severe stress testing. In several markets, banks had had to deal with official sector requests for cross-industry or firm-specific stress tests. However, a consistent message is that improving integrated stress testing that met the IIF principles and Basel Committee guidance will take time. Almost universally, stress testing is referred to as work-in-progress. The exceptions usually related to banks that had suffered from other severe crises and felt they had already made improvements to their frameworks.

The ability to quickly extract and aggregate risk information from a number of systems is recognized as a limiting factor. A key obstacle is the number of legacy systems used to store the source data for all risk categories and the length of time often taken to roll out system enhancements. Aggregating data across groups is also very difficult. One bank recognized the need to improve the aggregation of exposure information. They had had a project running for five years to improve aggregation of information, but the focus had been on monthly reporting cycles. They could aggregate data for any counterparty, but it relied on a significant amount of manual intervention and would still take a few days, even at times of crisis, to pull the necessary information together for a specific counterparty.

Embedding stress testing is seen as time consuming. One major bank said that the challenge was to define a robust scenario framework to support actual decision-making. Scenarios could have conflicting effects on the accounts, the rating, regulatory capital and the share price.
Improving valuation techniques, particularly valuation of structured products, is an important issue for the sample of banks from affected countries (and many had taken early action to try to deal with issues). This is unsurprising given that the degree to which banking markets were severely affected depended, to a significant extent, on their involvement in securitisations and their holdings of structured products. A number of banks felt that their approach to valuing these products had been less than adequate and had relied too heavily on the rating for the individual securities. Going forward they wanted to develop an infrastructure to support the valuation of complex products relying more heavily on their risk characteristics. Some banks from less affected markets had still been drawn into securitised products as investors (even if the holdings were less substantial) and they too were trying to resolve valuation issues.

Some banks found that, for structured products, a price discovery process based on observable market prices had become too difficult to operate. The extreme illiquidity of the products made prices difficult to interpret, forcing them to develop other valuation techniques. Developing a clearer policy on valuation of illiquid products was also regarded as essential. Price verification was important, particularly for illiquid assets. One bank cited the following as key issues: expanding secondary sources and better understanding the nature and properties of pricing models as well as vendor models. Another bank stressed the need to develop more sensitivity analysis around valuations and also the use of collateral and repo information for valuations.

Reliance on external ratings to assess and report risk, had also disguised the potential concentration of risks. This had meant that top management had not been aware of the sensitivity of risks to the assumptions being made.

The American banks noted a marked increase in the involvement of the CFO and risk functions in assisting with fair value valuation issues and in the control and validation of
valuations. Additional resources are required to develop teams which are independent from the front office to review valuations. In some banks, internal audit are already required to review the policies and procedures of these independent units. For one bank, the valuation function reports to the CRO whereas the P&L monitoring function reports to the CFO, so both are kept informed of any valuation issues. The involvement of risk in assessing valuation approaches for complex products is seen as important by a number of firms. Those firms not trading complex products will learn from the problems elsewhere but are not planning on making significant changes.

Overall, for many of the banks the focus is a mix of the valuation approach, framework and governance and no significant obstacles were cited other than resources.
Risk transparency/quality of information

44% – percentage of banks interviewed who treat as a top issue

55% – percentage of G10 banks who treat as a top issue

Banks which are changing their approach

The sample is sharply divided in terms of the importance of enhancing the quality of risk information. For banks which had been badly affected by losses, this is almost universally one of the top changes.

One very important theme is that the measures used before the crisis had not enabled top management to see the size and riskiness of some exposures in particular business units. The core problem is that the measures that had been developed during the 1990s to give top management an aggregate view of risk (value at risk (VaR) and economic capital) themselves helped to disguise the size of individual positions. This is because exposures were netted and reduced by hedges and further reduction was achieved using correlations to allow for diversification benefits. It meant that the sheer size of some exposures was not visible to management and the potential risk, if hedging/netting or diversification assumptions did not hold, was also not visible. Reliance on ratings to assess risk and report it, had also disguised potential risks. This meant that top management were not aware of the sensitivity of risks to the assumptions being made but had relied on the model output and rather simplistic stress testing.

Another area highlighted is that measurement of the size of off-balance-sheet risks had not been sufficiently robust. Some banks spoke of the need for automated systems to gather data on indirect exposures.

In the most affected banks, the development of better metrics to identify the scale of exposures is reported as an urgent priority. This meant rethinking how risk information was transmitted through the organization. It also meant working much more closely with front offices to consider how to identify the scale and size of the possible risk more effectively. This would take time to achieve. Issues of data quality, more timely identification and reporting of risk and improved aggregation of information were all cited as necessary by some banks.
Data and systems are a limiting factor with regard to the speed with which management information could be enhanced. Risk systems tended to be siloed which did not help and there were both data quality and aggregation issues. In the largest firms, the complexity of the legacy systems is not to be underestimated. They have typically grown complex as a result of growth by acquisition and some of the systems in use were developed some time ago on platforms that required specialist knowledge, which is often limited. The complexity of the information systems prevents quick changes being rolled out.

Many firms, at considerable cost and effort, have been working towards end-of-day mark-to-market (MTM) exposures for some time, but the ability to aggregate counterparty exposure across different business lines remains an important area for investment. The goal is to move towards an automated approach compared with the manual intervention currently required. A common perspective was that the underlying data was available, but it could not be pulled together and aggregated within realistic timescales without manual adjustments.

Some banks are reassessing the whole lifecycle of risk information to improve the underlying data quality; including its governance, data acquisition, analytics and reporting infrastructure. However, the sheer complexity and the number of systems involved means that this is a significant task.

Another goal mentioned by a number of firms is to streamline risk reports and make the information simpler. This is both for senior management and the boards.

Another core focus for improvement is the models themselves. Whereas risk transparency and management information are more of an issue for significantly affected banks, improving the risk models is a much wider area of focus. Economic capital models had under-read the degree of risk partly because the assumptions about correlation had been far too optimistic. Some banks were now simply aggregating risks across risk types rather than allowing correlations to reduce risk through diversification benefits. There is greater recognition that in turbulent times correlations become much more extreme, moving closer to one. Economic capital models had also ignored some risk types that had proved to be at the center of some of the pressures during the crisis. One bank cited the need to deal with reputation risk, rather than relying on contractual arrangements to determine whether there was an exposure. To this end, where there was the likelihood that reputation risk could mean that they would have to take the exposure, it was treated as on balance sheet for economic capital purposes.

VaR models are also being enhanced. Some banks expressed concern that they were not responsive enough to changes in volatility while others were concerned about the opposite — that they had under-read the actual risk in the low volatile period.

Several banks said that model improvements had already been made in a number of areas or were far advanced, with some having re-developed approaches 18 months ago.

The new measures and metrics do need to be embedded in the business going forward and this creates cultural issues. Some banks have spent time building a consensus on how metrics should be used. Several banks mentioned that there had initially been push-back from the heads of businesses and trading.

Overall, the story is one of clear focus on enhancing modelling and risk assessment, but it is work-in-progress in a number of banks. One bank mentioned a greater focus on qualitative issues, not just quantitative, and greater reliance on seasoned staff to make the assessments.
Conclusion

The financial crisis has triggered a major self assessment by the banking industry of both the fundamental causes of the problems and, in light of these, the processes which need to be strengthened going forward. The IIF Best Practice Recommendations are one part of the industry response.

The extent of the changes banks are either planning or putting in place varies across banks and jurisdictions. Some banks refer to the changes being radical while in others they are less far reaching. The overwhelming area of proposed change is governance and risk appetite. The goal is a much greater involvement from boards in risk governance and setting risk appetite, as well as a much more holistic role for the risk function. There are, however, challenges in providing the right information to enable board members to probe effectively. The more nebulous area of culture is also being addressed by many banks, with particular focus on remuneration structures. To achieve this transformation the risk management ‘tool kit’ must change and models are being redeveloped with new metrics to make risks more transparent. Banks are aware that changes in culture may come under pressure in the next boom, making embedding of the new approach to risk management now critical.

Change of this kind will not be quick and will require substantial investment; but banks reported that this has support from the board and management - with the remediation program a priority. Several banks reported that some aspects of the remediation program were complete, but many had plans that will take a number of years to conclude. One reason why progress will be slow in some areas is the need for major systems change to achieve the required risk measurement and control improvements. Liquidity is an area where this is most evident, as data needs to be brought together quickly and completely across a wide range of entities.

The banks making the most radical changes are those severely affected by losses in the crisis but it is also clear that, even in banking systems somewhat insulated from the worst of the events, banks and their boards are still seeking to learn from this experience.
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Appendix - Survey questions

CEO
1. How is the industry responding to the questions and possible deficiencies regarding risk control effectiveness highlighted by the credit crunch and the IIF report?

2. How much regulatory/government pressure is there for assessments of gaps to be made quickly and changes made?

3. How are priorities being balanced given the wider pressures on the industry but also the need to make improvements in response to the crisis?

4. How much involvement has the CEO and board had in considering the IIF recommendations and deciding on the bank’s approach to implementing them?

5. How is the board following up progress going forward?

CRO/CFO

Process to identify gaps
1. What approach has been adopted to identify gaps with the recommendations in the IIF report and what is the timing and governance process?

2. What have been the main obstacles to overcome both in terms of getting the process going and implementing any changes?

Results
1. What are the main areas where need for improvement has been identified in relation to risk management, valuation issues, investment decisions and liquidity risk?

2. What are the broad areas where changes will be implemented over the next 18 months and how have the areas been prioritised for implementation?

3. Have other issues arisen that were not in the original recommendations?

Each area of change individually
1. What is the nature of the change?

2. What is the overall timescale for implementation?

3. Effects/impediments?
   a. How wide reaching are the likely effects on the business in terms of, for example, changing the way that business is done or changing internal organization?

   b. How resource intensive is the change and are there data and systems implications and cultural issues?

   c. What are the impediments to change?
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In considering the implementation and impact of the IIF’s CMBP Report, the Steering Committee on Implementation (SCI) determined that greater clarity around the concept of risk appetite would contribute to the discourse within firms on how to improve their overall approach to risk.

While the firms that suffered the consequences of the crisis have made great strides to improve their risk management, the dialogue on that subject will continue at many levels for some time. This dialogue is an essential part of responding to the G-20 mandate to the supervisory authorities to foster improvement in firms’ risk management. It also is critical to discussions within firms as Boards come to terms with the new expectations of them and face difficult resource allocation problems in what are likely to be straightened, lower profitability conditions for the future. Finally, emerging-market firms and firms in regions that feel at a distance from the problems that created the crisis will need to deal with more globally driven regulatory and investor demands on risk management and governance.

For these and other reasons, greater discussion of the sometimes elusive but critical concept of risk appetite seemed important to the Committee, for the benefit of the most sophisticated firms as well as those just coming to grips with the risk management expectations of the new supervisory architecture the G-20 has mandated.

To put it another way, both the CMBP Report and numerous official-sector statements have put definition of risk appetite at the center of each firm’s governance and risk management, but what that implies in concrete terms has not always been clear.

This paper builds on the CMBP Report but broadens the discussion of the concept of risk appetite in ways that all sorts of firms may find useful as they decide how to define their own risk appetites, as they educate their Boards, and as they respond to their supervisors. The thoughts expressed here were developed by the Risk Management Working Group with reference to some of the literature available on the topic but, more importantly, to firms’ experiences, particularly over the past months of crisis.

Italicized Recommendations referred to herein are from the CMBP Report; bold face in these Recommendations indicates modifications proposed in this discussion. Readers are urged to refer to that report, especially Part I, which has a much fuller discussion of risk management governance and practices. The present discussion focuses on amplifying what was said in that report on risk appetite as such, but the Committee considers the remainder of the discussion still to be valid and an important point of reference for any firm trying to improve its risk management.

The CMBP Report contains extensive discussion of the governance aspects of definition and implementation of risk appetite. As the Committee considers that discussion substantially complete, we will not focus on it here. Governance is, however, critical to the process, and defining risk appetite is one of the critical tools of governance of a firm from the top down in a risk-controlled way. 85

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85 This role is also discussed in Section 6 of the UK Treasury Walker Review of Corporate Governance of UK Banking Industry, July 2009.
CONCEPT OF RISK APPETITE

Recommendations I.9–I.14 of the CMBP Report and the related discussion remain a useful starting point for thinking about risk appetite as a component of a firm’s risk management.

Recognizing that financial institutions are in the business of assuming risk, it is essential that each firm’s unique business model balance the assumption of risk with the opportunity to pursue profitable business—the firm’s risk appetite.

This paper explores the definition of risk appetite and gives suggestions for each firm’s process of defining its own risk appetite. Critically, risk appetite is not an externally mandated norm; instead, each firm must respond to the mandate to define it in ways that make sense for its unique business model.

Risk appetite definitions can vary depending on the entity using them and its goals.86 The firm itself must take a survey of its varied business lines and operations and decide the best way to allocate its acceptable amount of risk. The CMBP Report defines risk appetite as “a firm’s view of how strategic risk-taking can help achieve business objectives while respecting constraints to which the organization is subject.”87

Amplifying from an operational viewpoint, risk appetite is the amount and type of risk that a company is able and willing to accept in pursuit of its business objectives. In doing so, the statement of risk appetite balances the needs of all stakeholders by acting as both a governor of risk and a driver of current and future business activity. It is expressed in both quantifiable and qualitative terms and covers all risks.

For some firms before recent events, risk appetite was a vague notion, expressed in very general statements regarding a target credit rating or earnings volatility. In many cases, this vagueness contributed to allowing individual business lines to take on substantial risks in excess of what the firm as a whole would have authorized with more critical review. In the post-crisis environment, it is essential to have clarity in advance about the nature and degree of risks that can be taken, in a way that reflects an aggregate firm view and is applicable with clarity to individual businesses. The Ernst & Young Report shows that firms now recognize the need for an “explicit” risk appetite and are working to further embed risk appetite across business units so that it has a greater influence on lending and trading activity.

It is important to note that risk appetite is not static and needs to be continuously monitored. Business environments change as do business models, and periodic reassessment of risk appetite is essential. Because of its propensity to change and shift, the direction of evolution of the firm’s risk appetite and of its actual risk profile also is significant.

RISK CAPACITY

Risk appetite must be considered in relation to risk capacity, which is a basic concept of the maximum amount of risk a firm is able to or could reasonably assume it is able to take on given its capital base, liquidity, borrowing capacity, and regulatory constraints.

The goal of setting a risk appetite is not to use up all risk capacity. It can be said that in the crisis, management at certain firms did not recognize that risk appetite had been set too close to risk capacity—indeed, a lesson of the crisis is that there should be some spare risk capacity available when conditions turn adverse. Thus, as part of the process of defining risk appetite, a firm must decide how much of a buffer must exist between its risk capacity and risk appetite—how much

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86 Importantly, there might be differences in how the concept is applied by banking and insurance firms. Some insurance firms opt to use the term “risk strategy,” although such concept essentially covers the same elements as the “risk appetite” definition proposed here.

87 See CMBP Report, p. 33.
maximum risk it is able to assume versus how much risk it would be comfortable assuming in pursuit of its business objectives.

Risk appetite and risk capacity should be determined at least in part with reference to assumptions of market stress. As discussed further below, whether risk appetite is determined on a stressed basis or a “normal case,” risk appetite is stressed to assess the effects of adversity that can be determined by the firm. The main point is to make it clear to all that risk appetite is not a statement of the maximum amount of risk the firm could take but instead a reasonable guide to prudent risk-taking. It should be kept in mind that the buffer between appetite and capacity makes some allowance for modeling error as well as the danger of severely adverse and perhaps unanticipated market conditions.

**RISK APPETITE AND REWARD**

Another perspective on the same concept is that “risk appetite combines anticipations in risk and profitability with management preferences to control capital and resource allocation, as well as the distribution of exposure across activities and portfolios.”

An important amplification of the CMBP Report is to stress that a firm’s risk appetite is more than just an aggregation of its risks and resulting limitations within its risk capacity; it is the firm’s view of how much risk can or must be accepted to exploit current opportunities in a controlled way, having made an assessment of risk capacity as discussed above. Having a grasp of what risks the firm is facing or will face under adverse conditions is an important component of risk appetite, but the goals associated with those risks must be a part of the considerations. In this way, risk appetite is a driver of risk-taking and a definition of risks the firm is willing to take, along with a tally of risk limits.

Those goals may be defined in terms of such things as return on equity (ROE), ratings targets, or market share, and the related tolerances can be defined in terms of how much loss the firm is willing to sustain in the pursuit thereof. As an example, the firm might say that it could accept putting at risk the equivalent of one quarter’s earnings over a particular period to enter a given business and achieve a stated ROE in that business, but not more. Another approach might be to consider the expected loss associated with the return for specific portfolios (based on history of charge-offs and yields or peer group information). In other words, such a risk appetite is as much a driver of risk as a limit but also dictates the statement of limits along with statement of the goal.

Once a firm has determined how much risk it is able to take, strategic decisions are made regarding how much risk it will take on to meet business goals; this is the risk appetite.

**VIEWING RISK APPETITE FROM MULTIPLE PERSPECTIVES**

A firm’s risk appetite must satisfy its stakeholders who are most affected by risk-taking. Stakeholders are defined legally by jurisdiction, but this discussion will focus on those stakeholders who stand to gain or lose by the firm’s success in getting its risk–return balance right, that is, the firm’s management and Board, as representative of its equity holders.

Shareholders must decide how much risk they are willing to take, given their capital at risk, to earn a suitable return. The decision to invest in a financial institution with a given rating and history is the start, but shareholders can push for more and more returns, implicitly demanding an increase of risk, or they can demonstrate risk aversion and preference for predictable performance. The Board of Directors represents shareholders in the more specific decision-making process within investor or market expectations broadly understood, which is why it is important.
that the Board play a central role in approving and updating the risk appetite.89

However, many other actors will scrutinize a firm’s risk appetite, and they must be considered in setting risk appetite. Bondholders and depositors supply essential funding. They are not direct stakeholders in the risk appetite discussion in the same sense as are the Board and equity investors, but their demands and expectations must be seriously considered when setting risk appetite. Debt investors will have expectations that can be summed up in a firm’s rating and credit default swap (CDS) spreads. If a firm is seen as taking on too much risk, the cost of borrowing will increase. If ratings agencies are dissatisfied with how a firm manages its risk, they can downgrade the firm’s rating, causing issues with everything from debt covenants to margin requirements. On the depositor side, clients will not keep accounts at firms if holdings face excessive risk, subject to mitigation thereof by deposit guarantees. In all cases, a poorly planned risk appetite can handicap the ability of a firm to raise funding and expand its business.

Employees also are important evaluators of the clarity and credibility of the firm’s articulated risk appetite. Perception of a company’s stability is an important factor for attracting and retaining talent, and a well-defined risk appetite can convey to potential and current employees a firm’s level of stability. As financial institutions move toward longer term, more risk-adjusted compensation, workers will actively seek out firms that have a strong understanding of the risks they face and seem to offer stable protection of contingent-compensation rewards.90

To ensure that all stakeholder interests are balanced and that the needs and ambitions of the various businesses are addressed, a top-down review of risk appetite (even if in some respects determined by bottom-up methods) is required. It is only at the Board and senior executive level that this enterprise-wide perspective can be brought to bear.

**RISK APPETITE AT THE FIRM LEVEL**

The discussion in the CMBP Report also stresses that any effort to establish industry norms for each firm’s definition of its risk appetite must be nuanced and directional; guidance must be presented as points for consideration rather than prescriptively mandated practices. Recommendations I.10 and I.13 focus on the process of defining risk appetite. Recommendation I.13 has been modified to make clearer that liquidity and funding need to be considered more fully in the process of setting risk appetite; Recommendation I.10 has not been changed and is presented here for context.

**Recommendation I.10:** When defining its risk appetite, the firm should be able to demonstrate consideration of all relevant risks, including non-contractual, contingent, and off-balance-sheet risks; reputational risks; counterparty risks; and other risks arising from the firm’s relationship to off-balance-sheet vehicles (see “Conduits and Liquidity” section in the CMBP Report).

**Revised Recommendation I.13:** The firm’s risk appetite should be connected to its overall business strategy (including assessment of business opportunities), **liquidity and funding plan,** and capital plan. It should dynamically consider the firm’s current capital position, earnings plan, **liquidity risks,** and ability to handle the range of results that may occur in an uncertain economic environment. It is fundamental, therefore, that the risk appetite be grounded in the firm’s financials and **liquidity profile.** The appropriateness of the risk appetite should be monitored and evaluated by the firm on an ongoing basis.

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89 The role of Board of Directors in regard to risk appetite might vary, based on legal factors, across different jurisdictions.
90 The IIF has produced extensive analysis of and recommendations on this subject; see Section II of the CMBP Final Report and the Compensation in Financial Services Report of March 2009.
Risk appetite is built on estimations and assumptions and is influenced by the economic environment surrounding the firm as well as the particular specialization and focus of each individual firm. Because every firm has an individual mix of business lines, and every firm will have separate competitive advantages in each of those business lines, the variance in risk appetite among financial firms is expected to be quite wide. As well, a firm’s culture of risk-taking or relative weighting of stakeholders are very rarely exactly the same as its competitors. In a competitive system, different firms’ approaches to risk appetite will be critical to competitive differentiation, success, and diversification of product supply to the economy. Because of the wide variety of inputs, the exact definition of risk appetite will be unique to each firm; there is no one formula that will apply to everyone.

The purpose of stating a risk appetite is not to minimize risk. Risk minimization can restrict the flexibility of business lines, preventing them from pursuing opportunities as they arise. Financial services businesses necessarily involve taking risks. As the CMBP Report said, stating a risk appetite as part of setting the firm’s strategic goals for risk-taking can help the firm attain its business objectives while respecting and planning for the constraints to which it is subject. This sort of approach is affirmed in the Ernst & Young/CFO Report, in which a major financial firm details how risk appetite is now worked into the budgeting process and revenue forecast projections.91

**RISK APPETITE AND STRESS**

Unless the risk appetite is directly defined in stressed terms, firms may find it useful to express risk appetite along multiple dimensions. For instance, one expression might be in terms of the losses the firm would be willing to take over a range of “normal” business conditions, including economic downturns similar to those observed over some relevant period. Another expression could involve more extraordinary scenarios. The latter might include risks that are systemic and unavoidably linked to the firm’s strategy, external risks that may affect the entire banking system but that do not arise from the firm’s core strategy or conditions not represented in recent history, or behavior of markets and institutions in extreme circumstances. Economic capital analysis might, in addition, reveal the level of tail risk associated with a given portfolio, identifying in some cases the danger of occasional loss spikes in normally low-risk portfolios. This facet of risk appetite analysis also might involve the firm’s tolerance for losses or other outcomes that result in it no longer being viable or being forced to take actions that it would otherwise be unwilling to take, such as seriously diluting ownership by recapitalizing in a distressed market.

Thus, risk appetite requires the setting of limits and tolerances with reference to both normal and stressed environments in order to understand risk across several conditions and keep risk acceptance within bounds. As the CMBP Report discusses in more detail, managing the firm to its stated risk appetite implies setting a structure of limits and tolerances that flows through the firm’s businesses and entities. This aspect is also discussed in the next section.92

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91 See Ernst & Young/CFO Report, p. 11.

92 There are two possible processes, the first top-down and the second bottom-up, to link a firm’s risk appetite and strategic management. The top-down approach can be described as using capital constraints and target rating directly to assess the risk profile of each business line through capital used and profitability. Capital allocation to the business lines then corresponds to the search for the optimal risk-adjusted return, taking the firm’s development objectives into account. Risk can be mechanically tied to revenues, closely linking the risk and business development issues. The bottom-up approach sets baselines on metrics such as risk tolerance and liquidity constraints, then uses these baselines as the limits under which a bank defines its development model as well as tools for risk monitoring.
Small changes have been made in Recommendation I.13 above to emphasize the need to consider the firm’s liquidity profile in defining risk appetite. Because of the integral role liquidity plays in financial firms’ operations, it must factor into any discussion or definition of risk appetite. The unique nature of liquidity risk is explored further in the “Quantitative and Qualitative Components” section below and in the relevant parts of the CMBP Report.

QUANTITATIVE AND QUALITATIVE COMPONENTS

Recommendation I.11, which addresses qualitative and quantitative elements of risk appetite, has been modified slightly to stress the clarity of understanding of methodologies and assumptions on the part of management that is an essential part of setting risk appetite.

Revised Recommendation I.11: A firm’s risk appetite will contain both qualitative and quantitative elements. Its quantitative elements should be precisely identified, including methodologies, assumptions, and other critically important information required to understand risk appetite. Clearly defined qualitative elements should help the Board and senior management assess the firm's current risk level relative to risk appetite as adopted. Further, by expressing various elements of the risk appetite quantitatively, the Board can assess whether the firm has performed in line with its stated risk appetite.

Risk appetite has many components that sum up not only the risks but also the goals of the firm, as discussed in the previous section. However, the defensive measures that risk appetite drives are as important as the goals. Limits and thresholds define how much risk can be taken, but the firm also must consider the effects of pursuing its goals on key business metrics such as earnings, volatility, ratings, and capital.

Quantitative factors are important for setting a baseline of acceptable risk from which to determine the risk appetite. Techniques to this end include economic capital; regulatory capital requirements; earnings volatility tolerance; assessment of liquidity risks, credit risks, and market risks; and so forth. Firms that can clearly define the quantitative aspects of risk, in line with Recommendation I.11 above, will be better situated to measure their performance and levels of actual risk in relation to the risk appetite and hence to attain their goals without transgressing broad risk limits.

Risk appetite, as a guiding concept, however, also factors in qualitative, non-quantifiable aspects of risks to be managed. A robust risk appetite will acknowledge and discuss these risks as thoroughly as quantitative ones.

To some extent it is artificial to divide quantitative and qualitative aspects of risk appetite, as it is to attempt to divide the quantitative and judgmental aspects of risk management. Rigorous quantitative analysis is important and extremely helpful for lessening the subjective element of the risk dialogue within the firm within its risk appetite, but relying too much on either the quantitative or the qualitative can lead to trouble, and the risk appetite statement of the firm should recognize that its implementation and enforcement will always require judgment. Quantitative expressions are only tools that support decision making. Quantitative expressions of risk and risk appetite are by definition based on simplifying assumptions; interpretation of results and determination of what to do are always qualitative.

In fact, a truly comprehensive risk appetite considers both qualitative and quantitative risk measures in tandem. Management must supplement direct quantitative analysis with judgments about whether the risk measures capture all risks present in a business activity. Firms need to be aware of the limitations of their ability to understand the risks they are undertaking, and a strong definition of risk appetite will
reinforce the necessity of thoughtful judgment in assessing quantified risks. The ability of a firm to recognize what it does not know through quantitative analysis is a critically important dimension to the risk management puzzle.

The new product process, already discussed at some length in Recommendations I.20–22 of the CMBP Report, demonstrates how judgment and evaluation of business circumstances must go into the process of defining risk appetite. Some firms in the recent crisis chose not to become involved in apparently attractive business lines; management judgment steered such firms away from the shoals because of a sense that an opportunity did not fit within the firm’s risk appetite. In some cases, attempts to analyze and quantify the risks of products such as collateralized debt obligations (CDOs) or CDO-squareds led a firm to conclude that they could not evaluate the risks sufficiently to get comfortable within a generally conservative risk appetite. In such cases, quantitative analysis was the basis of judgment calls that relied as much on the qualitative feel of the situation as on quantification. In others, more qualitative judgments were decisive. For example, a firm might have decided to avoid option adjustable-rate mortgages (ARMs) (either as an originator or an investor) because doubts about the product at the consumer level could flow through as risks to lenders or investors in a downturn.

In targeting opportunities, the firm’s risk appetite may target or welcome new products, but the risk limitation side of setting risk appetite needs to make allowances for the additional risk dimensions that a new product or business line or geographical expansion may imply. Thus, the risk appetite process that allows pursuit of such new opportunities should, on the risk side, include a requirement to challenge whether the firm has invested enough in the new competences to be comfortable that it can handle business planned on top of the usual quantitative analysis. This may include human resources issues, qualitative analysis of legal issues, review of new compliance requirements, or necessary information technology (IT) investments.

Zero-Tolerance Risks

It is recognized that firms are in the business of assuming risk. That said, some firms define regulatory, legal, compliance, or reputational risks as zero-tolerance risks. While zero tolerance can be a useful way to make an emphatic cultural statement to the firm, and while some firms may in fact have much less tolerance than others for seeing their names in the media associated with a violation or scandal, such risks cannot obviously be eliminated altogether.

Despite the nature of such statements, parts of the overall risk management apparatus need to be geared to respond to such risks, even if the firm’s risk appetite is for zero risk in such areas. Risk management preparations for such risks, which by definition include many unknowns and ambiguities, should not be understood to undermine a values-driven statement of zero risk appetite but need to be seen as necessary for dealing with undesired but possible eventualities. In this way, the use of the term zero-tolerance risks is generally more aspirational than an actual explicit business goal. Moreover, even in an area such as legal risk, for example, one firm might be willing to defend a position that it believes to be correct but containing some litigation risk, whereas another might forego that risk.

On the other hand, there will be some situations in which the firm will, in fact, reduce risk to zero by not engaging in a certain business line at all. A firm that sees securitization pipeline risk as unacceptable will not start a CDO or collateralized loan obligation (CLO) business, or a firm that does not feel it has an adequate understanding of the risks in consumer credit might avoid running a credit card group. Only by avoiding all exposure to specific business lines—in effect, deciding that the business is not worth the risk or investing in managing the risk—can a financial firm bring risk exposure to zero.


**Liquidity Risks**

Liquidity risk is different in kind from credit or market risks that the firm deliberately undertakes in pursuit of gain. Thus, liquidity risk may be thought of more in terms of tolerances (and the goals for liquidity may be set in terms of development of liquidity buffers to ensure availability of liquidity for businesses as needed, internal transfer pricing for liquidity resources, or liquidity-management procedures to contain risk). Yet even where deliberate risk-taking is less evident, tolerances and limits need to be balanced against the overall goals of the firm and the limitations that liquidity risk management—particularly after a major liquidity crisis—may put on them. Defining the risk appetite in such areas is no less critical because it is needed to drive the allocation of liquidity resource within the firm.

Even in light of the grim lessons learned about liquidity risk since July 2007, zero liquidity risk appetite will not be possible even for a firm with an overall conservative strategy and risk appetite. Nor would it be in the interest of the system if every firm set the most conservative conceivable liquidity risk tolerances for its own business: to do so could accelerate the next systemic liquidity crisis. 93

The IIF’s *Liquidity Report* and the *CMBP Report* both emphasize repeatedly in Recommendations the importance of setting risk appetite and tolerance when it comes to liquidity funding risk and creating a framework of limits, targets, and triggers to ensure firm-wide adherence to the guidelines and appropriate internal transfer pricing of liquidity. This, of course, is a major regulatory issue since the publication of the Basel *Principles of Sound Liquidity Risk Management and Supervision*.

Section III of the *CMBP Report* discusses liquidity risk management, including its intersections with risk appetite, in considerable detail.

Section II of this Report contains a brief discussion of liquidity risk developments since publication of the *CMBP Report*.

**REVIEWING AND CHANGING RISK APPETITE**

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**Revised Recommendation I.9:** The Board should review and periodically affirm, based on updates to risk metrics and similar guidance and information, the firm’s risk appetite as proposed by senior management at least once a year. In so doing, the Board should assure itself that management has comprehensively considered the firm’s risks and has applied appropriate processes and resources to manage those risks.

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Risk appetite is both organic and dynamic. It should be reviewed and altered so that it always reflects the current business environment. While updating weekly, monthly, or quarterly to track market movements would render it useless, a firm should generally review its risk appetite at least once a year to ensure that it still applies to the firm’s business model. Because risk appetite is a forward-looking model used to determine how to exploit opportunities, a fundamental change in the business environment may require a rethinking of risk appetite to stay ahead of the curve. Changes in regulatory requirements (e.g., new capital or liquidity requirements) that fundamentally change a firm’s risk capacity should be reflected in a revision of the risk appetite as well.
A firm also must review its performance against its risk appetite to make sure that the appetite accurately reflects the firm’s business model. Business performance must be constantly monitored and compared to risk appetite to ensure the firm is staying within its desired bounds, and a substantial deviation requires urgent attention. On a more micro level, frequent excesses to established limits should provoke dialogue as to what is behind the exceptions and the need for either reinforcement or review of risk appetite as stated. It may well be imprudent for a Board not to amend its risk appetite when faced with unexpected losses or breakdowns in risk controls or risk measurement. Stress tests and scenario analyses conducted within the firm’s regular risk management program—or ordered ad hoc if conditions warrant—also can offer views of how a firm’s risk appetite reflects the actual or potential business environment.

Firms must understand that risk appetite will in most cases tend to be cyclical. During economic expansion, assets will have higher value and less volatility, and stakeholders will demand a higher rate of return. Whereas risk capacity, as discussed above, is more a measure of how much risk a firm can take on, risk appetite focuses on what can reasonably be expected to be achieved in the current environment. Therefore, firms need to be aware of any fundamental shifts in the function of markets and the greater economy and incorporate those shifts into the risk appetite, or they will be left taking on too much or too little risk.

Over the past two years the financial industry has experienced events that caused market fundamentals to shift dramatically over a short period of time. In cases like these, firms must be ready to quickly update their risk appetite to reflect the new environment. Senior management and the Board should recognize any drastic change in the business environment and immediately review how risks to various business lines and the overall business model have shifted. A one-year periodic affirmation of risk appetite is not sufficient in these situations, as firms will be left taking risks based on metrics and fundamentals not aligned with reality.

Because the complexion of markets can change considerably in a short time, this ad hoc review of risk appetite must make sure that the assumptions on which a firm establishes its risk appetite still hold. Comparative advantages in business lines may lessen or disappear, risks may be greater than previously modeled, and having a healthy capital or liquidity position may trump short-term performance considerations. A firm that is agile but also aware in shifting the types and amount of risk it takes on depending on a marked swing in market fundamentals or the greater economic environment will be in a much better position to endure downturns and thrive in upswings.

**MANAGING RISK APPETITE AND RISK PROFILE**

A firm must have in place processes that ensure that risk-taking is commensurate with the risk appetite set by senior management and the Board. Not only must delegation of tasks be clearly delineated so that it is apparent who communicates the limits and risk policies to different business lines, but the senior management and the Board of Directors also must have a way to assess the firm’s risk profile.

A firm’s risk profile is a point-in-time assessment comparing actual exposure or current position to established limits and tolerances. The measures that compose the risk profile will be similar to the original quantitative measures that were mentioned earlier in this paper as forming the risk appetite of the firm. These measures can be collected to offer a clear presentation as to where the organization sits at any particular point in time relative to its desired risk appetite. The Board and senior management can then review the profile to ascertain whether certain business lines need further monitoring or new guidance regarding risk-taking. When metrics or measures
change, these decision makers can then decide how to respond to bring the firm back within its desired risk levels.

COMMUNICATION AND DISCLOSURE OF RISK APPETITE

Clear and comprehensive communication of risk appetite on an enterprise-wide basis is essential. In this regard, policy can be instrumental in the dissemination of a firm’s view beyond those directly involved in the setting of limits and tolerances. The degree of formality of a firm’s statement of its risk appetite will depend on many things, including management style. What is important is that risk appetite be translated from the top of the firm to front-line business units in a way that is clear and useful to managers making day-to-day or transaction-by-transaction decisions, as suggested in Recommendation I.12.

Risk appetite is an important metric used not only within firms but also by external actors. A firm that communicates its risk appetite effectively can attract capital more easily, recruit higher quality employees, and gain the trust of regulatory bodies. However, a firm cannot be expected to make such detailed public disclosures of its risk appetite as to reveal its detailed business strategy. The industry should, however, acknowledge that a more comprehensive rendering of risk appetite determination processes will be beneficial to all parties: investors, ratings agencies, suppliers, regulators, and so forth.

Such disclosure is already required by some countries on the basis of Pillar 3. Related Pillar 3 disclosures are explanations by firms of how they define their risk appetites: what metrics they use, their level of tolerance, the decision-making process, and so forth. Some firms have voluntarily disclosed such information for some time in their management discussion and analysis or equivalent.

These disclosures display to stakeholders, analysts, and creditors—in short, to the market—how rigorous and robust the risk management framework is at an individual firm. Such materials are in the spirit of Basel’s Pillar 3 principle of market discipline through public disclosure. This Report further explores the benefits of disclosure and the steps being taken by the industry to improve disclosure practices in Section VI.

Communication of risk appetite to the market also is critical in the “new normal” of the global financial framework. Board members and shareholders must understand that profit and risk are invariably lined and that any demand for return on equity must be seen in the context of how much risk a firm is taking on. By showing how the firm calibrates the amount of risk it is willing to take and how it communicates and enforces that limit throughout its business units, management can make shareholders confident in their decision-making and performance targets.

The 2009 SSG Report also recognizes that “intense market interest in financial institutions’ risk profiles since the onset of the crisis underscore[s] the need for firms to apply multiple measures of risk appetite, to develop a range of perspectives, and to consider a broad distribution of possible outcomes.95

SUPERVISORS AND RISK APPETITE

Regulators and supervisors can be considered as indirect stakeholders or rather as highly interested parties in whose views the direct stakeholders must take a keen interest in defining risk appetite. Although they do not—and in ordinary circumstances should not—have a direct voice in business decision making, regulators will have an interest in a firm’s risk appetite as it pertains to the actions of the firm and the health of the overall financial system. Regulators act in the interest of taxpayers, who may be at risk in the event of the firm’s failure but who also benefit from an effective financial system that is reasonably stable and yet capable of sustaining the risk-taking required to finance the real economy;

95 See 2009 SSG Report, p. 23.
therefore, they must monitor the extent of a firm’s risk-taking and understand its risk appetite.

As well, regulators will increasingly play a large if indirect role in risk appetite formation through enforcement of microprudential limits on inputs such as capital ratios.96

Beyond the traditional microprudential supervision of firms, the post-crisis period is likely to see regulators attempting to monitor “macrofinancial” developments and perhaps impose “macroprudential” constraints as a consequence. This raises the question of how they should look at risk appetite in that connection.

Regulators already play a pivotal role in limiting risk capacity and therefore how banks formulate their risk appetites. Capital and liquidity constraints are necessary inputs to the risk appetite definition process. Mandatory capital buffers will constrain the amount of risk a firm can take in an economic expansion, thus restraining a firm’s risk appetite during a perceived period of increasing systemic risk.

Risk appetite is quintessentially the firm’s business, but the macroprudential perspective will have a legitimate interest in gathering information on the risk appetites of firms within and across jurisdictions. Supervisors will have an increasing interest in attempting to aggregate the implications of firms’ risk appetites (and of their success in managing to those risk appetite statements).

In fact, market supervisors must determine their own risk appetite in a similar fashion to individual firms. Regulators need to assemble their own risk appetite as an aggregate of the amount of risk acceptable in the regulated financial system as a whole.

The risk management and risk evaluation processes that feed into definition of a firm’s risk appetite must, of course, consider systemic risks and cyclical, as all other material risks. To that extent, the firm will have a keen interest in its own and industry macroeconomic and macrofinancial analysis, and it will need to consider macro-prudential information provided by the official sector.

However, while macro-analysis of systemic and cyclical issues will probably have increasing influence on the input side of setting risk appetite, the process will remain resolutely “micro” in the sense that setting the risk appetite is the expression of the firm’s goals and its evaluation of its environment. It must be allowed to pursue its micro goals without aiming at specifically cyclical or macroprudential goals beyond its own interests on the output side. If it were required to do so, it would not only be thrown off the maximization of returns within reasonable risk but would also likely act to the detriment of overall welfare because the individual firm is not well placed to define macro goals or even to pursue them, and to some extent this is as it should be as well as inevitable.97

Finally, it is important to stress that, although references to risk appetite are now being incorporated in official-sector requirements,98 risk appetite must remain completely firm-driven. It is legitimate for macroprudential regulation to gather information on firms’ risk appetites, and it is legitimate for supervisors to challenge the

97 See discussion of this issue in Andrew Haldane’s speech given at the Marcus–Evans Conference on Stress Testing, Why Banks Failed the Stress Test (9 February 2009), as well as the related section on “Systemic v. Idiosyncratic Risk” in the Turner Review (p. 44).
98 See Council of European Bank Supervisors CP24 High-Level Principles for Risk Management (April 2009) and the Basel Committee’s Proposed Enhancements to the Basel II Frameworks (January 2009), Section I.C.14.
firm’s risk appetite if they think it is unreasonably imprudent or does not take regulatory requirements sufficiently into account. But, unless the official sector is going to get into direct credit allocation, firms should generally be able to define their own risk appetites with the interests of what they consider to be their direct stakeholders in mind, without external mandates.

Reference to risk appetite in supervision, which is entirely correct and necessary, should not be allowed to slide into dictation of risk appetite by the regulators. The market and ultimately society will not be well served if every firm ends up with the same evaluation of risk and opportunity, which is to say the same risk appetite.

CONCLUSION

The market, prudential supervisors, and perhaps market supervisors as well will demand an increase in the transparency of risk practices within financial institutions. The industry recognizes the need for appropriate risk appetite disclosure within general limits to protect legitimately confidential specifics of business strategy.

As regulators and the markets put more emphasis on review and discussion of risk appetite, it will be increasingly important to keep in mind that risk appetite is a microprudential measure of one firm’s risk–reward perception and goals and not a tool of regulation to be used to restrict risk appetite as such.

Thus, while it is entirely appropriate for supervisors to examine a firm’s risk appetite and consider in the Pillar 2 process its foundations and the analysis behind it, there may be a risk of supervisors’ pushing firms to converge on a given approach to risk appetite or to impose standardized metrics that may diverge from internal metrics that are appropriate to the basic business decision making of the firm. Any temptation to convert review of an internal process into a directly regulatory process should be avoided. Regulators are already creating frameworks for more data collection from firms as part of a more effective market monitoring system; this should be sufficient for regulators to monitor firms’ actions without having to constrain the risk-taking inherent in the financial system. Setting risk appetite should remain an integral part of each firm’s business management. This is essential to maintenance of a competitive and creative market.
Schedule 2A. Questions for Executive Committees and Boards to Consider in Defining Risk Appetite

Some firms may be unclear as to the kind of detailed questions they need to ask themselves to articulate an effective risk appetite. Below are suggestions that some firms have found useful in guiding their process. However, as is discussed above, each firm has a unique risk appetite and should tailor its approach to its own business model and should not rely without close examination on this or any other template.

Risk tolerance, Capital, and Limits

- For each risk, how much of this risk do we choose to take and manage (i.e., risk appetite)?
- Specifically, what is our tolerance for aggregate total losses over 1 year, with varying probabilities:
  - Across the entire group (e.g., “We can accept a 1 in 10 chance of losing $X in a year, a 1 in 20 chance of losing $Y, and a 1% chance of losing $Z.”)?
  - In each geographic location or business line? For a single transaction?
- Does this tolerance vary depending on the location of the losses (e.g., home markets vs. offshore markets)?
- Are these risk tolerances consistent with our performance (e.g., profit, return on equity) and growth targets and our capital, funding, and liquidity position? What are the implications of actually sustaining losses of this size? What would we do?
- What is the minimum level of capital that we must preserve after sustaining large losses, after considering our earnings capacity? What fraction does this represent of our current total capital and Tier 1 common equity? What does this imply about our aggregate total loss tolerance?
- What kinds of limit frameworks are needed to make these various risk tolerances clear to employees internally?
- Are the current limits consistent with these tolerances for loss?

Business Model/Competitive Advantage

- What is our overall growth strategy? Examples include: core businesses and markets, preference for organic vs. inorganic, growth vs. joint ventures, and so forth; target credit rating.
- Which risks are core to our overall strategy?
- Which risks do we understand and manage well? Which risks can we avoid or transfer?
- Which risks do we have a competitive advantage in assuming? Which risks are we paid excess returns for assuming?
- Which risks will we seek to minimize and control, and which cannot be avoided completely (e.g., regulatory, legal, operational, compliance, reputational)?
- Which risks do we not understand well enough? Where do we need to build capability and understanding, either because these risks are core to our business strategy or because we may be unacceptably exposed?

99 Source: Mark Lawrence Group.
Risk Culture

Many discussions of the crisis have explored how firms’ varying risk cultures have strongly affected their response to the building up of risk before the onset of market turmoil, or to the strains of coping with the crisis, or both. The CMBP Report recognized the importance of risk culture throughout the risk management discussion in Part I. The CMBP Report’s first Principle of Conduct is

**Principle I.i: A robust and pervasive risk culture throughout the firm is essential. This risk culture should be embedded in the way the firm operates and cover all areas and activities, with particular care not to limit risk management to specific business areas or to restrict its mandate only to internal control.**

However, the fact that public-sector and private-sector comments have stressed the importance of risk culture subsequently suggests that it is necessary to take a more specific look at ways to enhance risk culture as a means to improving the overall robustness of firms. The present discussion goes to the underlying substructure on which each firm’s risk management is built, elaborating points that were to some extent assumed in the original Report but which could benefit from additional discussion and analysis.

Both firms and supervisors are now focused on culture as crucial to whether risk is handled appropriately or not. In many cases, the true issues were more matters of culture than of the specific deficiencies of models or systems, although those existed as well. This discussion attempts to show how firms can think about risk culture and deal with those issues. Most importantly, Boards and managements should realize that culture is not a given and can be changed; that fact, which is clear from many firms’ experiences, implies opportunity and also responsibility to do better at fostering a productive yet risk-sensitive and disciplined culture. Management will need to focus on it and governance processes will have to be designed to work against erosion of risk management standards and a risk-sensitive culture, especially as the next booms emerge either in product areas or generally. Supervisors will rightly look critically at whether firms are developing and sustaining positive risk cultures taking into account the lessons of the crisis. Risk culture will always be a work in progress.

A robust risk culture is a substantial determinant of whether a firm is able successfully to execute its chosen strategy within its defined risk appetite (a discussion on defining risk appetite is found in Appendix II). The risk appetite determined by the firm will be only as effective as the formal and informal network in which such appetite is disseminated as well as the way in which it shapes employees’ decision making.

Having in place set processes and controls is not enough to give Boards and executives confidence that the risk appetite they set will be adhered to; they must ensure that all employees be aware of what risks they are taking, make the right decisions, and raise objections when necessary—the key attributes of a strong risk culture.
In considering risk culture, some have tended to assume that it is too “soft” a concept for Boards and risk managers to work with affirmatively or, conversely, that it is too engrained in the nature and history of a given firm to be in any way malleable. A review of firms’ experiences and of the literature showed clearly that both of these “fatalistic” responses to risk culture issues were erroneous, and a firm can change or develop its risk culture if it is sufficiently clear-eyed about the need to do so.

Importantly, it should be understood that senior management is responsible for the quality, strengths, and weaknesses of the firm’s risk culture and must take action accordingly. This implies that risk culture requires active investment and efforts and that there is not just one lever (such as compensation) to affect a firm’s culture. Employees down the chain of command will look to senior management to see how seriously the firm adheres to its stated culture. Leadership from the top is therefore essential for a firm to be able to mold and adhere to a robust risk culture.

DEFINITION OF RISK CULTURE

Although references to risk culture are commonly found on business literature, there does not seem to be a sharp, accepted definition of the concept. In fact, it may be that the “I know it when I see it” approach has tended to contribute to the fatalistic response to risk culture issues. Therefore, a generic definition may be useful for firms that need to address risk culture deficiencies:

**New Recommendation A:** Risk culture can be defined as the norms and traditions of behavior of individuals and of groups within an organization that determine the way in which they identify, understand, discuss, and act on the risks the organization confronts and the risks it takes.

Based on this definition, risk culture influences decisions at all levels in an organization and, through such decisions, expresses the firm’s values. Regardless of how risk culture is defined formally—and the acknowledgment of culture as an element of risk management is more important than agreement on a single, universal definition—it is a component of the firm’s choices in the face of opportunity and risk; it informs the way it determines its risk appetite; and it influences, perhaps more than any actual directives of management, how the firm lives within its risk appetite and manages its risks.

Risk culture is especially important when managers, traders, salespeople, risk managers, and others are not consciously weighing the risks and benefits of a course of action in a formal way but simply “doing what we do” in the ordinary course of business. Risk culture is powerful regardless of whether it is addressed directly or not. Part of the management challenge of creating and sustaining a strong risk culture is to make explicit what is going on tacitly, to correct the negative aspects, and to enhance and entrench the strong aspects already in place.

Risk culture is closely aligned with a firm’s general risk awareness and the willingness of employees to challenge even what appear to be winning strategies. This can be particularly important when a firm enters a new market or business line or has business areas growing with unusual rapidity and producing better-than-expected returns. It also can be important in avoiding the emergence of self-interested fiefdoms or groups within the organization.

There is clearly a spectrum between good and bad, more effective and less effective, and constructive and dysfunctional risk cultures. Thinking analytically about a firm’s culture will be useful in determining what does or does not contribute to achieving the firm’s business and risk goals.
RISK CULTURE NOT A GIVEN

New Recommendation B: Management should take an active interest in the quality of the firm’s risk culture. Risk culture should be actively tested and objectively challenged in a spirit of fostering greater resilience and encouraging continuous improvement, reflecting the strategic aims of the organization.

Risk culture may develop organically over a firm’s history, influenced by strong personalities at the top, significant problems that have been overcome, mergers and acquisitions, the role assumed by the Board of Directors, regulation, “shared wisdom” repeated by employees to each other, and many environmental factors. However, one salient perception of the review of recent historical examples is that risk culture need not be a given and need not be inevitable. Good management can address cultural deficiencies—and identify and nurture strengths.

Risk culture has been most acutely thought about and most specifically addressed in response to dramatic events that have caused supervisors and Boards of Directors to ask fundamental questions about how a firm operates. Several of these cases are in the public record. Examples arise not just in financial services but in all industries, and include response to a disaster at an industrial plant, and can encompass public-sector as well as private-sector enterprises (e.g., the NASA Columbia Shuttle explosion). In the financial services sector, several firms have faced dramatic problems that have been documented in public reports initiated by companies or mandated by regulators. In all such cases, cultural issues have been more or less central.

In one important case, the regulator explicitly focused on cultural issues and explicitly imposed targets for improvements of the corporate culture, enforced by capital surcharges removable on the regulator’s conclusion that cultural problems had been addressed satisfactorily. Cultural transformation was one of the three main requirements of the regulator’s program, along with governance and risk process changes.

Although this document does not review these cases in detail, the reports cited are highly interesting and extremely useful for firms facing their own issues; however, some conclusions can be drawn.

Firms that have set out to change their risk culture, either because of a management perception of need or under regulatory imperative, have developed techniques that have been effective and can be emulated. A broad survey of the employee population, if carefully designed, can elicit highly useful information about the complex of attitudes, aspirations, fears, and values that employees bring to risk culture, as well as specific behavioral issues. To put a different prism on the same issues, firms have found that a “deep-interview” process with a reasonable sample of employees who are likely to have encountered risk issues is highly effective. Such processes are commonly conducted by specialists at consulting and law firms and necessarily require some investment, but there is no a priori reason why a firm’s human resources department could not undertake such a process given appropriate resources.

Once information is developed by these processes, a concerted effort can be successful in turning around negative attributes and fostering positive ones. Some indications are given in this discussion, but each firm undertaking such a transformation will have to study the available guidance drawn on.

100 This references the 2005 Texas City Refinery Incident, in which an explosion at a BP-owned refinery killed 15 and injured more than 170; the safety lapses leading up to the explosion are explored in the Baker Panel Report, January 2007.


102 This discussion draws on several of the public reports available on firms’ responses to severe problems and on analytical work done by McKinsey & Co.
and case studies, as well as its own needs, to come up with a viable strategy.

Because risk culture depends on many anthropological factors that do not respond mechanically, but rather organically, to influences, any change needs time to develop. A strong risk culture implies continuity; where change is needed; however, the natural continuity of culture implies that change will require time and sustained commitment for it to develop.

COMMON ISSUES

Review of the literature and recent history of firms suggest that risk culture failings within organizations (disregarding issues specifically linked to tone at the top) tend to fall into some relatively predictable categories:

- **Disregard for risk:** Officers can sometimes make conscious decisions to disregard the firm’s risk appetite or its stated norms and values if there are substantial apparent rewards for doing so and also insubstantial obstacles to disregarding limits. To some extent, this may be a principal-agent problem within the firm.
  - Over-confidence is a common failing in rising markets; the danger arises when a sense of superiority leads to a sense of immunity to risk.
  - Business units may become so apparently successful as to be able to evade or distort the firm’s means of risk management. At its worst, this can include evading checks to perpetuate a fraud, but an arrogant business unit that finds ways to impose its own risk appetite in lieu of the firm’s can be almost as dangerous.
  - If officers are successful at beating the system so long as things do not go too wrong, risk management throughout the organization will suffer, and the culture may be seriously damaged—until a major loss or other disaster calls attention to the failing.
- **Sweeping problems under the carpet:** The culture may or may not induce people to face up to problems as they develop.
  - One major problem of a dysfunctional risk culture is that people do not challenge one another’s assumptions, attitudes, or actions; this may be the result of forceful leadership at one or another level, of power accreting to a successful desk, or simply of a perception that challenge or questioning will only cause problems for the questioner and thus not contribute constructively to the firm’s direction.
  - Blind spots are the result of lack of challenge or excessive comfort.
  - Fear of bad news or a “shoot-the-messenger” mentality can be powerful cultural attributes preventing people from raising issues forcefully.
  - Siloed risk management functions can lead to issues being neglected or weakness of controls owing to issues falling between silos.
- **Passivity:** Inevitably, most people have jobs to do focusing on specific tasks; they may not react to signals of developing risk in their own areas unless focused on risk issues or to react to signals in related areas.
  - One harmful manifestation of passivity is not sharing warning signals of internal or external risks within the firm.
  - Another face of passivity is indifference, a lack of sense of engagement in the firm’s fate or prospects that leads to reluctance to react to situations; in retrospect, this may appear to be incompetence, but indifference is at root a cultural response to signals in the environment.
  - Denial is a familiar face of passivity; if things are not going the firm’s way or innovation requires investment or
unwelcome expenditures, it is too easy to deny the need until too late.

- Passivity may be the result of an excessively hierarchical organization that does not value opinions at lower levels.
- Similarly, it may result from a “tribal” culture, in which business units look out for their own and both feel no responsibility for other units and resist strongly either formal oversight or horizontal interest in their units.
- Passivity can result from bullying by successful people going unchecked by senior management.

**Ignorance:** Several major financial institutions have had problems because of a lack of understanding of risk or risk management issues or because of a rote approach that did not induce critical responses.

- Communication of the firm’s risk appetite can be faulty and, if unclear, can lead to imprecise or elastic tolerances.
- Failure to be clear about who is in charge of risk issues also can lead to laxness or failures to respond.
- Ignorance can reflect lack of insight about the risk environment or about responsibilities of non-specialists for risk.
- Another version of ignorance is a smugness that “our culture is fine,” something that happened to several firms before the crisis; again, the root cause is lack of challenge and critical thinking.

**Failure to correct bad behavior:** People living within a culture are highly sensitive to signals arising from how it reacts to bad behavior.

- Frequent breaches of procedure, ignoring of limits, failures to complete reports, or disregard of compliance requirements, if not corrected, lead to the rapid spread of the issues identified above.
- Excusing the behavior of those who are generating high revenue volumes can be highly destructive, especially if combined with tolerance of bullying.
- Firms need to challenge the reality of high revenue volumes, especially if generated by groups that take a cavalier attitude to risk and control.
- It is not just a matter of correcting breaches of good conduct such as evading controls; it also is an issue of how the organization as a whole responds to “near misses.” Correcting breaches is important, but (as discussed further below), responding in a positive, learning fashion is also important.
- What is critical is that the organization responds to the situation in deliberate and assertive ways that send the right signals not only about correction of particular problems but also about how the organization expects to conduct itself in the future.

**ELE ME NT S OF A N EFFECTIV E R ISK CULTURE**

Extensive research by the working group has identified some central elements of an effective risk culture:

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103 This is another reason why the independence of the risk management department, as discussed in the CMBP Report, is so important; however, the issue cannot be corrected just by good “policing” by that department. It must be a priority for senior management not to tolerate bad behavior that will be demoralizing or damaging to the risk culture of the overall organization. The 2009 SSG Report has recognized the steps taken by firms in this regard: “boards of directors and senior managers have given their risk management functions greater resources, independence, authority, and influence” (p. 23).

104 Drawn from the committee’s discussions and review of literature, including analytical work done by McKinsey & Co. and from the Towers Perrin Roundtable: Building a Risk Culture and Organization, March 2008.
• Committed leadership;
• Horizontal information sharing;
• Vertical escalation of threats or fears;
• Continuous and constructive challenging of the organization’s actions and preconceptions;
• Active learning from mistakes;
• Incentives that reward thinking about the whole organization; and
• An effective governance structure;\textsuperscript{105}
  \begin{itemize}
    \item Access to authority,
    \item A Chief Risk Officer (CRO) with extensive influence,
    \item Communication of risk tolerance to the organization and external parties, and
    \item Evidence of management objectives linked to risk management objectives.
  \end{itemize}

The balance of this discussion document elaborates on how to respond to the failures in risk culture some firms face and how a firm can tell if they have a robust risk culture.

**RISK CULTURE ANALYSIS**

How a firm responds to its risk environment depends on many factors. The firm’s thinking about risk is, of course, a critical element of its risk culture. We will therefore address some behavioral issues that go beyond those raised by monetary and non-monetary incentives.\textsuperscript{106}

**Tone at the Top**

A necessary (but not sufficient) condition for influencing risk culture in a positive direction is tone and leadership from the top. The attitudes communicated by the Board and senior management are clearly critical; over time they will be emulated for better or worse by the rest of the organization. Statements of ethical values and a strong attitude toward risk management are important but do not in themselves constitute “tone at the top.” Rather, the firm is likely to respond to decisions or actions that reflect actual risk culture rather than admonitions about risk culture.

There inevitably is a degree of skepticism from rank-and-file employees about management proclamations. That can be overcome only through positive experience and developing a perception of the firm’s true expectations of its employees.

Boards and managements need to be vigilant because risk culture, whether within a given office or business line or in the firm as a whole, is negatively malleable as well. A constructive risk culture can be destroyed by one or two forceful and willful people in powerful positions much more readily and quickly than it can be established (although strong personalities can contribute mightily on the upside).

This is one reason why creating and reinforcing the stature of the risk management function is so critical. (See Recommendations I.15–I.25 in the CMBP Report. The point also is made in several of the official-sector reports on the crisis.) It is particularly important that senior management do everything possible to reinforce the importance of the risk and other control departments in the organization and to reinforce their stature. Any sense that these departments are not backed up or valued by management will rapidly be picked up by the organization, negating much of the value invested in such departments. The *Ernst & Young Report* shows that firms are

\textsuperscript{105} Governance issues are covered extensively in the original *CMBP Report* and therefore will generally not be discussed here except to point out essentials.

\textsuperscript{106} Clearly an essential element of any analysis of a firm’s risk culture is a clear assessment of the risks the organization faces. As much of this is covered in the *CMBP Report*, we will not enter into detail on this here. However, it is important that a meaningful analysis of a risk culture include the steps of identifying and understanding the firm’s risks, establishing what risks are natural to the firm’s lines of business, determining the firm’s capacity and appetite for risk (see the separate discussion on risk appetite), establishing good risk management and making sure risk analysis is embedded in decision-making processes, and developing good risk governance.
already aware of the importance of tone at the top to increasing the voice of the risk function and are changing practices to improve how risk management is regarded in the firm.

The actions of the Board and senior management also are the ultimate determinant of whether or not a robust risk culture can be sustained during periods of market euphoria or booms in particular products. When market conditions create an apparent low-risk, high-return environment, it is up to management to be sure that the proper controls and processes are being thoroughly followed and that risk management is not being overpowered by revenue generators. Employees will look to the example set by senior management when new products are being developed and new business lines are proposed. Senior management also will have to address shareholders’ concerns regarding competitors taking risks and making profits where their own firm is not. If those at the top of the firm hold fast on how risk is examined and controlled and ensure that those with concerns about the level of risk being taken on are genuinely listened to, then that attitude will permeate throughout the firm.

**Strategy and Budget**

Whether a firm succeeds over time in carrying out its strategy within its risk appetite depends in large part on how resilient and functional its risk culture is. Communication of the risk appetite is a basic expression of tone by senior management and a critical way of setting expectations.

The firm’s budget and financial targets are equally critical components of how culture is communicated down through the firm. This is in part a matter of incentives, as discussed further below, but the budget will send clear signals over and above direct incentives: Are the risk and control departments adequately funded? Are revenue targets reasonably achievable within the firm’s risk appetite, or are there contradictions? Are information technology and human resources investments being made in a manner that is consistent with a strong risk culture and the nature of the business?

**Transparency and Accountability**

A necessary element, as mentioned already, is tone at the top. But even if senior management is determined to give the right signals, more is still required. The organization needs both formal and informal channels to communicate risk information.

*Formal channels* have several important functions; procedural requirements induce attention to issues. Regular, structured discussions including risk managers but cutting across functions and structures can be very valuable. Many firms that have weathered the storm more successfully than others have found that formalized risk committees can make a big difference, especially at the senior management level but also at the business level. Other types of risk-focused committees, such as model review committees, are similarly essential to making sure that a sound process of managing risk is in place. Of course, much depends on the attitudes of participants in these committees, which is something that a risk culture review process can address.

Dialogue about risk must include senior management; risk; compliance; treasury and financial functions; legal; and, as relevant, sales, regions, and business units.

While experience shows that there can be dangers to excessive reliance on specific stress tests or specific model outputs, it also should not be overlooked that quantification of risk in a formal process can help the dialogue between the risk and business units. While judgment is always required, and while the dialogue needs both objective and subjective elements, quantification to avoid unnecessary reliance on “gut feeling” also will facilitate the risk management process.

Formal channels should include means to raise or escalate issues quickly and should not
just be dependent on fixed, periodic reports or meetings.

Informal channels operate where formal channels are insufficient. There is a danger that formal procedures will become ossified or that people will review formalized risk reports or stereotyped stress tests in a mechanical way that create false comfort that “all the boxes have been checked.” People may focus too much on process and not enough on substance. Formal channels may lose credibility if senior people delegate too much or otherwise signal disinterest.

A successful organization normally includes accepted but informal channels for information flow to the risk organization and to senior management. Cultivating the feeling that people can call the risk department or senior management or send an email or have an impromptu conversation about emerging concerns is one of the most intangible yet most crucial elements of a strong risk culture. The existence of such an environment is the converse of the passivity problem that has caused problems in some of the spectacular failures of the past, and its existence will attest to the success of management in preventing bullying or beat-the-system attitudes.

Informal channels also may be essential to rapid response time, uncovering emerging risks or issues as they begin to become apparent rather than, in effect, waiting for them to come to full flower as serious problems.

Robust informal channels also will enable management and risk managers to avoid the problems of filtering and sanitization that may afflict formal reporting in a hierarchical organization where a full comfort to challenge assumptions and received ideas is not yet developed.

Without such channels, senior management risks missing nuance and color, as well as rapidly developing issues, even if the formal channels work well. In firms that have had serious problems, there often has been a “bad news doesn’t travel” phenomenon. This is a serious risk in itself, and management should be very concerned if there are indications of this trait in the firm’s culture.

Accountability of personnel also must be reinforced. One change made at a major bank in response to their lapse in risk management was to write new job descriptions including risk responsibilities for all relevant personnel. While this in itself would clearly not constitute a cultural change, it did help underscore the importance of risk awareness and marked a change from a prior culture where risk issues were too easily dismissed by successful business people, or risk as a concern was too easily relegated to relatively low-status risk, compliance, and control functions.

New Recommendation C: Firms should ensure that relevant personnel have their formal responsibilities for risk clearly elaborated in their job descriptions and are evaluated for their fulfillment of these responsibilities as part of firms’ periodic performance reviews.

Formal accountability for risk issues can be highly important (this intersects with the question of incentives, discussed further below). The organization, and hence each layer of management, needs to be clear that specific risk issues do have a particular set of employees responsible for them. People, especially managers, need to feel responsible for understanding the risks in their part of the business and keeping the business within the boundaries of the agreed risk appetite. Thus, to take a recent example, valuations of positions are the responsibility of the specific desk, but if responsibility for control of that desk’s valuations is not clearly upward within the management hierarchy and also within the risk organization, there is the danger of a problem being overlooked. In addition, the management and control functions may not pay as close attention as they should or assume that “it’s someone else’s problem” if direct responsibilities are not clear.
However, formal accountability is not sufficient, no matter how important it is that ambiguities regarding responsibility be minimized. As argued in the CMBP Report, all employees should feel responsible for risk issues in their own areas and in the firm as a whole; the fact that there is something called the “risk management department” does not exonerate others from worrying about risk. Financial firms are naturally in the business of risk; as such, employees should be aware of the consequences of those risks, regardless of whether they hold a risk management position. Every employee should feel comfortable acting appropriately to risks that he or she sees developing and for keeping the organization within bounds of its risk appetite. This would mean raising and, as need be, escalating any issues without allowing excuses that the risk in question is not exactly within the employee’s purview.

At a more general level, firms can give cultural signals that attach importance to “doing the right thing.” Paying close attention to either mandatory licensing requirements or optional professional credentials can help underscore values, care, and a sense of competence that are important to a positive culture. At times of cultural change, firms may want to think about credentials not entirely for their own intrinsic value but also for creating a culture in which professionalism per se is valued, which will usually include a sense of duties and obligations beyond the discharge of specific tasks.

**ROLE OF INCENTIVES**

The CMBP Report includes an entire chapter on the importance of compensation as an aspect of risk management, a discussion that was recently augmented by the Institute’s publication with Oliver Wyman of the Compensation Report and is explored further in Section IV of this Report.

We need not repeat the points made in those discussions, but it is clear that incentives in general, and perhaps the compensation structure within a firm in particular, can reinforce or undermine a positive risk culture. An important new observation made by the working group was that risk culture embraces the broad set of incentives in a firm, so that any review of a risk culture must not be confined to compensation.

That said, it seems evident that a strong “eat what you kill” compensation regime, where compensation is tied formulaically to the production of a given individual or desk, at the very least will undermine the enterprise-wide view that the CMBP Report and further analysis have identified as important. It also appears likely that firms where there was a sense of working for oneself, as opposed to working for the firm, were more likely to fall into combinations of the negative cultural patterns identified under the previously mentioned “Common Issues” above.

Perhaps somewhat more subtly, some firms in the run-up to the crisis paid lip service to risk and control issues, but the true signals of their compensation policies negated the positive design features of their systems. An example that comes up in the experience of consultants and some managers is what might be called the “unbalanced scorecard.” The official compensation system ostensibly took into account risk and compliance issues, but it quickly became apparent to the organization that it was only the revenue number that counted. This is obviously not an easy issue to overcome, as revenue is certainly vital and solid revenues deserve commensurate rewards; however, management needs to correct for the revenue bias and not reinforce the tendency to assume that risk and control issues are only pro-forma boxes to be ticked.

It is apparent that a compensation system that meaningfully takes into account an employee’s risk sensitivity, compliance with risk appetite limits, and conformity to other legal and compliance requirements can make a huge difference to the creation of a positive culture, and this point is very explicitly discussed in the reports on troubled firms mentioned above.
Similarly, compensation as well as less-tangible incentives can contribute to a sense that questioning of assumptions, received ideas, and decisions is valued and rewarded, or penalized. Important non-financial incentives including intangibles, such as the esteem of seniors or recognition of exceptional response to risk or control issues, also make a difference.

As already developed in our other compensation reports, appropriate compensation for the risk and control departments to ensure their independence and their status in the firm also is essential and needs to be factored into any new compensation regime.

**CULTURE OF CHALLENGE AND QUESTIONING**

It will be apparent that much depends on the willingness and ability of employees to ask the right questions and their sense of freedom to challenge things that may be going the wrong way. To overcome some of the negativity and passivity that can build up in an organization, it may be useful to think in terms of whether there is a “learning culture.” In a learning culture, pointing out issues is accepted and encouraged and eventually is rewarded. Lessons learned are valued. Errors may be those of judgment, from which something can be learned, but not defects of people. This is an issue that must be worked at but that can be cultivated if there is sufficient commitment and communication down into the firm, as well as the right incentives.

People need to feel not just that they can ask questions but that they are expected to ask questions and challenge things that are not understood or appear contrary to the firm’s stated risk appetite. The aim should be to make an environment where risks are owned by the whole organization, which is a focus of firms’ efforts in the wake of the crisis according to the *Ernst & Young Survey*.

Many firms find it useful to have an anonymous channel for escalation of concerns to senior management and the risk department. This requires that recipients do a good deal of triage of both significant and frivolous issues, but many have found the procedure worthwhile. It also may give comfort to the Board that channels are open, especially where cultural issues exist, even if they are being otherwise addressed. Such “whistle-blower” options are not a substitute for developing a true challenge culture but often are useful and are in any case a good safety valve in case bullying situations or similar problems have developed undetected.

As recommended in the *CMBP Report*, openness to transferring qualified personnel in and out of the risk management function can be very important to cross-fertilization and to avoiding creating a stigma on risk functions. In some firms, a passage through risk is an essential element of advancement in the firm, and this seems to contribute to both a healthy integration of risk as a function into the firm and propagation of both thinking about risk and receptivity to challenge on the basis of risk concerns.\(^\text{107}\)

**Subcultures**

Inevitably, different business units within the firm, the risk and control departments, senior management, and the Board will all have their own subcultures, which should be acknowledged and which can be positive or negative as they affect the overall soundness of the firm’s risk culture. To some extent, these will reflect the needs and demands of a business; for example, banking is different from insurance; retail lending

\(^{107}\) The point is discussed in Recommendations I.23–I.25 of the *CMBP Report* and so need not be developed at length here, but in firms with a weak risk culture, risk management and other control functions often are seen as second class, lacking respect and therefore disadvantaged in the risk dialogue with businesses and other areas of the firm. As the *CMBP Report, 2009 SSG Report*, and other commentaries on the crisis have stressed, the independence and authority of the risk department are critical to good risk management.
engenders different sensitivities and concerns from investment banking, and so forth.

It is important that the existence of these subcultures be recognized; it is equally important that these subcultures be integrated into the enterprise-wide view. This does not mean the erasure of the subcultures but rather that each unit should be expected to adapt and nurture directional patterns and values that contribute to, rather than pull against, the kind of culture the firm is trying to create. A sense of responsibility on the part of unit heads is clearly essential. This is especially important for very successful units and charismatic unit heads, who may be tempted to see themselves as special or immune to challenge or control because of their contribution to the firm. In such cases, unit heads have a very personal duty to the firm as a whole to integrate culturally with the firm, recognizing special talents but also the dangers of blindness that may come from success when accompanied by arrogance.

**National Cultures**

Firms’ risk cultures exist, of course, in a context of national culture. The cultures of international firms must interact with and will be informed by the national cultures in which they operate. Again, there is nothing inevitable about those interactions. While the national cultures of China and the Netherlands, Switzerland and Australia, Ireland and Poland have very real differences that affect the way people interact within the firm (both with persons of their own nationalities and with other nationalities), the firm culture also can have a strong pull and a strong definitional role for the firm, cutting across those differences, although influenced by them.

Whether a firm is at a point where it needs to change its culture, or if it is attempting to nurture and maintain a positive culture, it needs to adapt its cultural strategy to national strategies. It may be much easier for persons from some cultures to challenge received ideas than others, for example. But the fundamental goal of creating a strong risk culture should not change for that.108

**SPECIAL ISSUES ARISING FROM Mergers and Acquisitions**

**New Recommendation D**: Any material merger or acquisition should be the occasion of a serious analysis of the risk culture in the new organization; the opportunity to take action to correct problems and foster a positive risk culture should not be overlooked.

When a firm acquires another business or merges with another firm, several harmonization issues are likely to come up.109 At such times, it is especially important to be clear-eyed about cultural questions and to set clear goals as to what the risk culture of the group in its new form is to be. The post-deal period is necessarily a time of disruption and change, which creates problems but also opportunities.

A firm with a strong and positive culture may not recognize before a deal is completed the issues existing within an acquired business or merger partner. Examples can be given where a firm with a well-balanced risk culture acquired a firm with an excessively aggressive sales culture not offset by a robust risk culture but took time to recognize the risks thus created. Such issues may be compounded where a firm makes an acquisition in a new business line or market. In

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108 It may be that, at least at particular times and places, national cultures may have a strong risk culture element, and national cultures may fall prey to some of the same problems that firms may encounter when their risk cultures go off track. This is argued to have happened to Iceland in the period prior to 2008. See Michael Lewis’s “Wall Street on the Tundra.” *Vanity Fair*, April 2009.

109 A similar situation might occur between headquarters and subsidiaries in firms organized under a “federal” model.
such cases, management may make assumptions that the functionality of the risk culture in the new business is comparable to what it has been historically or to competitors or miss risk issues because of dependence on acquired management.

Of course, a major deal may uncover issues in the culture of the acquiring firm or create issues in the surviving organization. The acquiring firm may find that its new colleagues have a more robust consciousness of risk issues, better systems for risk management, or a stronger culture of challenge.

For these reasons, a self-conscious examination of the risk culture of the new organization, with an eye to identifying strengths and weaknesses and defining a strategy to overcome the latter while fostering the former, is highly advisable. Failure to have such a strategy may expose the firms to unpleasant surprises or, at the least, missed opportunities.
Since the onset of the recent global financial crisis, statistical models used for the purpose of measuring risk in banks and other financial institutions have been severely criticized, both in terms of their apparent failure to predict the extent of problems experienced by different financial institutions and in terms of their lack of transparency.

These criticisms can and have been leveled at many types of statistical models used, including:

- **Credit risk models**, which typically address probability of default, exposure at default, and loss given default considerations to support bank capital and loss provisioning calculations, but have struggled to produce meaningful risk measures for collateralized debt obligations (CDOs), synthetic CDOs, and CDO-squared transactions, given challenges associated with correlation parameters;

- **Asset and liability management (ALM) models** (focused on earnings-at-risk [EaR] estimates in the balance sheet), which for many institutions have not adequately addressed “put-back” risks of securitized vehicles or have not adequately addressed systemic liquidity risk considerations;

- **Operational risk models**, which attempt to statistically quantify operational risk based on scaled internal and external historical loss data; and

- **Market risk models**, used to quantify risks in trading books and value risk positions and to underpin the associated regulatory capital, which have been severely criticized for their apparent failure to reasonably predict and quantify the massive trading book losses experienced at many institutions during the global financial crisis.

Note: Value at risk (VaR) models have some additional and unique attributes that warrant special discussion which, for purposes of this paper, we have separated into Schedule 4.A.

Given the importance of risk models in the day-to-day management of institutions, it is a priority to examine closely industry practice on risk modeling, to provide some perspective on the effective use of models in risk management, to clarify potential misconceptions about models and their applications, to examine deficiencies in current practice, and to formulate recommendations as to how to address such deficiencies.

**STATISTICAL MODEL LIMITATIONS**

The events of the recent past have highlighted the deficiencies and limitations of statistical measures of risk. Model implementation presents significant operational challenges; and best practices in model choice are still developing.

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110 This list is not all inclusive. There are many other important models used in risk management, including, for example, Behavioral Scoring Models, Economic Capital Models, and all of the pricing models used for trading and valuation.
This will be the focus of the discussion to follow, all of which derives from the conclusion that mathematical models, properly used (with inputs to management from several sources as to methodology, model choice, and so forth) are an important part of a risk management framework. Approaches to change therefore should be evolutionary rather than revolutionary.

Among the most-cited limitations are the following:

- Statistical models are by their very nature “backward looking.” Inherently, they all use analysis of historical data as a basis for trying to describe “what might happen” tomorrow or at some specified point in the future with a specified degree of confidence.

- To the extent historical data used for statistical modeling are drawn from benign periods of history, the models will underestimate the risk and, more importantly, will not fully capture the potential for severe shocks. The inverse also is true: data drawn from highly agitated periods of history will potentially overstate risk. This has been noted as one factor that contributes to the procyclicality of bank capital.

- Some common statistical models typically ignore, or insufficiently address, liquidity and funding risks. In the design of many of these models, liquidity is usually presumed to be infinite. For VaR models, in particular, this is usually reflected in assumptions of short holding periods for trading assets, as is access to inexpensive or “normal” funding.

- As a corollary to this liquidity risk consideration, models do not typically consider position size relative to “normal market parcels” or monitor significant biases in the collective books of the major market participants in given products. When an institution is the dominant market maker in a given product or has taken a strategic decision to become very large in a particular risk category, it may effectively “become the market,” and its ability to close out positions in a market downdraft disappears.

- Some common statistical models do not handle options and structured or complex products effectively, particularly where a mark-to-model valuation is required or extensive use of historical proxies are substituted in cases in which no meaningful history exists.

- Statistical models tend to be built with a heavy focus on the statistical and analytical aspects of the process, often with less attention given to operational quality control processes to ensure accuracy of positions, accuracy of static data, and accuracy of historical market data. In some well-known cases of large losses experienced by specific institutions, poorly implemented risk models often receive the initial blame; however, detailed post mortems have found the real problem arose from poor data quality not the actual model itself.

- Statistical models sometimes struggle with issues of aggregation and the volatility of correlations. In some institutions, major simplifying assumptions were made, such as simply adding results to overcome aggregation challenges or assuming that correlations are constant to bypass correlation modeling challenges, with little visibility or transparency given to such assumptions.

- Some common statistical models are very difficult to debug. When the outputs look strange or counterintuitive, it can be extremely difficult to track down the source of the error or discrepancy. Thus, it can be challenging to build the confidence of a variety of stakeholders in the robustness of the models and their outputs.

In reviewing the above, it is important to distinguish between model limitations and inadequate management practices surrounding their use. Many of the issues raised because of the crisis have revealed inadequate senior management
focus on or understanding of models, the assumptions embedded within models, and model limitations. In particular, the crisis has exposed serious management shortcomings in understanding the liquidity implications embedded in models and that some models are effective only in modeling liquid markets. These shortcomings have been disclosed and examined at many firms and are being overcome, although embedding a memory of these shortcomings will be a challenge for the future.

To address the issues raised and to appropriately move forward, the following Recommendations are made. It should be noted that these Recommendations may be implied in the Recommendations in the CMBP Report, are enshrined in current regulations, or are already embodied in the expectations of regulators as part of model accreditation processes. Nonetheless, we believe it worthwhile to reiterate these in the context of this analysis.

**New Recommendation E:** No risk model should be used in isolation. Different models used in risk management draw out different perspectives on “risks.” A holistic perspective on an organization’s risk profile is best achieved through the use of several models and multiple measures of risk, each drawing out different aspects of the institution’s risk profile in a given area.

**New Recommendation F:** All model assumptions should be explicitly documented, understood in terms of their materiality and implications, and subjected to an appropriate review and approval regime. Documentation and analysis also should include assumptions around the use of proxies (e.g., as data sets) in models. All assumptions should be periodically reassessed, as assumptions deemed immaterial in one market environment may evolve into critical assumptions in a different market environment (e.g., where a “crowded” market has evolved).

Naturally, the frequency and depth of such reviews should be based on the materiality of the model to the organization. Smaller institutions that do not have sufficient critical mass to warrant maintaining an independent group or regional function capable of conducting such reviews should consider the use of expert third-party resources. Even large global organizations, which may have an independent and competently skilled internal model review team, may benefit from the fresh perspective provided by engagement of an external third-party review every few years.

**PUTTING STATISTICAL MODELS INTO CONTEXT**

The above-mentioned criticisms, in essence, focus on the limitations of statistical models as a risk tool, particularly during times of high volatility or as a measure of risk for structured, illiquid, or complex products. While it is important to recognize and call management and Board attention to these limitations, it also is important to understand what statistical models do and how they add value when correctly used. Not building on the technical risk management advances of the past 20 years and the experience of the past 2 years would be as much an error as relying blindly on a few model outputs as a sole basis for risk management.

Statistical models have been used since the 17th century, when academics such as Blaise Pascal and Pierre de Fermat first established the mathematical foundations of probability theory. In certain
physical sciences and in engineering, statistics can be used with high degrees of precision in predicting outcomes that are repeatable and consistent. The actuarial profession also has a well-established track record in using statistics to model demographic dynamics (e.g., mortality rates) as a basis for pricing insurance products and quantifying the risk, again, in a predictably consistent manner, with changes evolving slowly over time (in conjunction with lifestyle changes and medical advances).

In some sciences (e.g., oceanography, astronomy, meteorology, quantum physics), the challenges associated with gathering data, along with the complexity of interactions between multiple factors, reduces the accuracy of statistical estimates. While these sciences still rely heavily on the use of statistics, there is significant attention given to error factors and understanding the limitations of the results.

The use of statistics in risk modeling in financial services is similar. The mass of data on different economic influences can seem overwhelming, and the complex relationships (correlations) between different market drivers can be very difficult to understand and quantify:

- In modeling credit risk, the challenge is more manageable, because changes in default probabilities tend to move more slowly and within a somewhat predictable cycle (possibly not too far removed from actuarial analysis of demographics). That said, in areas such as packaging credit risk (e.g., CDOs) or packaging packages of credit risk (e.g., CDO-squared), the credit modeling becomes very difficult, not because of the models themselves but because there is simply not enough data available on the volatility of correlations between different credit pools to provide input into the models.
- In modeling trading book risk, rates of change can be much higher, and hence, more challenging to analyze. However, in normal markets (discussed below), the statistics can be reasonably accurate and quite useful to stakeholders. Where they break down is during periods of extreme market volatility, where all the normal relationships between variables change.

- For operational risk, the statistics are most challenging, not because of volatility or complexity but more because outcomes are very deterministic, a function of specific management decisions and the quite amorphous impact of “risk culture” versus being truly stochastic in nature.

Recognizing the challenges of using statistical models in financial services, it is generally agreed that the statistical measures of risk provide an organization and its external stakeholders with a sense of likelihood that a loss greater than a certain amount would be realized over a given time frame.

Statistical measures usually express risk as a single number, with some supplemental information on the extent of “tail risk” associated with the single risk number. As such, it can be used to apprise senior management and external stakeholders (e.g., investors, regulators) of the financial risks run by the institution in relatively non-technical and user-friendly terms.

These statistical measures of risk also can be used to calculate the economic and regulatory capital that a firm needs to underpin its risks, within the requirements of the Basel Accord. They allow for consistency of capital across a wide range of organizations and drive toward a framework that two different organizations running similar risks should hold similar levels of capital.

By imposing a structured methodology for critically thinking about risk, firms that go through the process of statistically computing their risks are forced to assess their exposures across several dimensions. In effect, the process of getting to a statistically based capital number can be extremely valuable in its own right.

There are strong voices suggesting that all use of statistical models for capital purposes should cease immediately and be replaced by
capital requirements based on “common-sense” measures. The use of common sense in setting capital requirements for banks and other financial institutions is clearly logical and appropriate. However, without statistical models sitting as a core input underpinning capital requirements, it is impossible to see how capital requirements could be imposed in such a way that they are consistently applied and appropriately related to the levels of risk.  

Both industry and the regulators have long understood that statistical measures of risk are not perfect and that they should be constantly evolving. Incorporation of some common-sense adjustments has always been required. For example, in some cases, the mandated capital for organizations is some multiple of the calculated risk (e.g., the original market risk capital requires a multiplier of the VaR number by at least 3 and then scaled up to represent risk over a 10-day holding period) and other cases in which mandated minimums in the statistics are required (e.g., minimum probability of default factors for mortgage loans). These arbitrary variations to pure statistical measures are imposed by regulators for purposes of adding conservatism. Recognizing that different participants have different views as to what constitutes common sense, this debate process, in and of itself, is healthy and constructive.

NORMAL MARKETS AND LIQUIDITY

A critical fact that users of statistical risk models must understand, as well as a common refrain from the critics of the models, is that they primarily work in normal markets. Once normal market conditions break down, then so do the models, as correlations between securities diverge from historical norms. But what are these normal markets?

One way to define a normal market is when market participants are merely respondents to a set of outside price processes, and their own actions have no effect on the market. Once this condition is broken, the models become considerably less useful. The key to this definition holding is the availability of liquidity. For every asset, a firm must ask two questions: How will the market react to an asset sale? and How fast can an asset be sold?

The second question is a function of the first question. If a firm has a large holding of illiquid assets, then it will be difficult, if not impossible, for it to sell these assets into the market all at once without affecting the price. Instead, the firm will have to sell the positions over time in order to not influence the overall complexion of the market. When market conditions turn and banks are forced to sell assets to meet capital requirements or margin calls, they may have to sell into markets that cannot handle the volume of securities. This will in turn break the normal-markets definition given above as prices drop due to the abnormal supply of securities in the market.

A second facet of liquidity is that it is not realistic to assume that differently sized positions in the same security experience the same potential market shocks over the same holding period. Either the firm needs a way to assess the market impact of trying to liquidate a given position quickly or acknowledge that, to avoid such a market impact, it would need to sell a larger position over a longer time frame.

In fact, this situation often is where contagion comes from. An institution (or more than one) takes losses in one market, is forced to raise cash to meet margin or something similar, raises cash by selling in a seemingly unrelated market, and this other market gets hit. Firms need to identify such “crowded-trade” situations, and the relation-
ships they are likely to produce, as a complement to the history-based forecast of risk that statistical models produce. At a higher level, the FSB and any “systemic risk regulator” will have to do this for entire markets. Importantly, efforts should be focused on determining the current state of the market and the types of shocks that are plausible rather than just replicating shocks from prior periods, which often is how stress tests are conducted. While this is extremely challenging, it is vital to address it with eyes open.

New Recommendation H: Liquidity should be considered in all areas where models are used. Liquidity is not only relevant to asset and liability management processes; it can also be an important risk dimension hidden within model assumptions. Institutions should take time to understand to what extent models make inherent presumptions about liquidity, draw out such assumptions to make them explicit, and subject such assumptions to an appropriate review and approval regime.

THE WAY FORWARD
As statistical models have evolved into key components of how risk in financial institutions is quantified and how regulatory capital is calculated, the use of statistical concepts has evolved into general use and acceptance by a wide universe of bankers and bank executives with little formal training in statistics. Hence, expressions of risk in statistical terms, that a statistician would immediately understand to have some degree of associated uncertainty, have become too easily accepted by others as hard factual numbers, with far too much complacency around the robustness of the statistics. In this context, it appears that statistical measures of risk have become too dominant in Board rooms and at the Executive Committee level within organizations, with inadequate inclusion of stress-test analysis, along with broader contextual discussions around the firm’s risk profile in the market.

It also seems that in some organizations, there is insufficient dialogue around the key assumptions embedded into statistical models, the impact these assumptions have on the results, and management’s comfort with the assumptions made. It is important that Boards and executive managers broaden their understanding of statistical concepts, thoroughly explore the nature of all key assumptions embedded in the analysis, and ensure that their focus on risk does not treat statistical estimates expressed as a single number as some form of “truth.”

Many financial organizations need to take proactive measures to address some of the issues outlined above under “Statistical Model Limitations,” particularly in cases in which there has been inadequate focus on operational support issues and the inability to drill down into analysis to get at the underlying drivers of the risk calculation.

New Recommendation I: Senior management should understand how key models work, what assumptions have been made and the acceptability of these assumptions, the decisions around the degree of complexity chosen during model development, the adequacy of operational support behind the models, and the extent and frequency of independent review of the models. They should ensure that appropriate investments have been made in systems and qualified staff.

New Recommendation J: Senior management should ensure that the models are effectively used by management, the risk department, and key staff as “tools” for managing risk, not allowing models to substitute for the “thinking” processes required of managers. Robust and regular dialogue on the risks as seen by managers versus model outputs should be occurring; any evidence of “tick-box” dynamics should be treated as a cultural red flag.
Notwithstanding this, as the situation is evolving, some leading institutions have moved toward integrating different risk systems to provide a more holistic perspective on the nature of risk the organization faces. The underlying principle is that while risks can be mitigated, the process of mitigating risk in and of itself gives rise to new risks in different classes that need to be understood and managed contextually.

For example, an energy trading desk may hedge or act to mitigate its exposure to future energy price risk by actively trading in the markets and using a markets VaR-based model to track its overall market exposure:

• However, in this process, it undertakes significant volumes of derivatives transactions that give rise to counterparty risk, tracked using a credit VaR model, which is interfaced to the same database underlying the markets VaR model and uses the same valuation functions and markets rate inputs.

• Because of limited creditworthiness of some of its counterparties (and possibly weakness with its own name), many of the derivatives transactions are subject to collateralization arrangements (as a credit risk mitigation tool), where the collateralization system is interfaced to both the database underlying the credit VaR system for affected positions and the markets rates database underlying the markets VaR model.

• However, wide swings of the “in the money-ness” of positions can give rise to large collateralization flows each day, both in cash and eligible securities, with information on these flows (both today and projected) interfaced into the ALM system of the organization.

• The ALM team uses this information as a key input in managing the cash position of the organization and works with the trading desk to ensure an appropriate volume of securities is held to support expected collateralization requirements.

With lucid reporting, approaching the use of risk management models integrated in this way can help senior management understand the linkage between risks as they work their way through the organization and help ensure a degree of consistency between the different models used across the organization. There may be statistics underlying analysis at each step in the cycle, but the statistics exist to support and not dominate the risk discussion.

In response to the rapid and continuous evolution of financial markets and products, mathematical models have over the years become increasingly complex and, until the crisis, there was a tendency to become increasingly complacent as to their limitations.

At times we can lose sight of the ultimate purpose of the models when their mathematics become too interesting. The mathematics of financial models can be applied precisely, but the models are not at all precise in their application to the complex real world. Their accuracy as a useful approximation of that world varies significantly across time and place. The models should be applied in practice only tentatively, with careful assessment of their limitations in each application.112

With this in mind, to move forward in a fashion much improved from the past, we must remember that models are but one tool in the measurement and management of risk. They need to be regularly assessed as to their being “fit for purpose,” and assumptions need to be tested as to liquidity and normal market performance. Model output should always be supplemented with other measures, including stress-testing. With this in mind, it is important to reiterate the following Recommendations.

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Markets and financial products will continue to evolve, and managing the risk inherent in this evolution necessitates our continued use of complex mathematical models. In this regard, analysis and challenges identified as a result of the global financial crisis is both warranted and healthy, but it is important that we do not over-react. Models and statistical measures of risk are very important to ensure rigor and consistency across risks within organizations. It is essential that we learn from the past and diligently apply the lessons learned and direction provided herein. It is as important that we continue to look for better ways to manage risk.
Schedule 4A. Special Considerations for VaR Models

There are factors that are quite unique to VaR, which can lead to deficient model predictions of risk in certain circumstances. These issues must be addressed in a comprehensive way:

- Most VaR models calculate risk once per day based on an institutionally defined “end-of-day” position, typically based on the time zone where the Head Office is located, irrespective of the time zone in which the bulk of trading activity occurs. However, trading positions at firms that are active market makers usually change dramatically throughout the day, both directionally and in terms of the portfolio mix and mass. For such firms, modeling risk based on one instantaneous position snapshot at a single point in time during the day will not accurately reflect the level of risk being taken by the traders.
- To the extent an institution defines its end-of-day to align with where the bulk of trading activity occurs (e.g., a London end-of-day close), the positions being captured may actually represent the “low point” of risk-taking by the traders, given the tendency of traders to close out positions before the day ends. Therefore, the risk results may not fully represent the actual levels of risk being taken.
- There also are issues regarding the criteria applied when introducing new products into market risk VaR models. As made evident by the crisis, products that are not actively traded in the market or do not have clear and demonstrable correlations with actively traded products cannot easily be included within a robust VaR portfolio modeling environment, because there is little meaningful basis for describing how they will behave in a portfolio context.

- Most implementations of VaR models do not incorporate standing “stop-loss” orders related to the positions being analyzed, nor do they incorporate outstanding customer orders which, if filled, can either mitigate risk in the book or amplify the risk. This common dynamic effectively means that most institutions are quantifying risk based on an incomplete portfolio position. Whether this is material or not varies between institutions, depending on the size of their customer order books and the nature of risk-taking.

Putting VaR Into Context

The above-mentioned criticisms, in essence, focus on VaR’s limitations as a risk tool during times of high volatility and as a measure of risk for structured, illiquid products. In other words, they focus on what VaR does not do. A more useful approach perhaps is to focus on what VaR does do, and its correct use.

As with statistical models generally, VaR is a measure of risk that provides an organization and its external stakeholders with a sense of the likelihood that a loss greater than a certain amount would be realized over a given time. VaR expresses risk as a single number. As such it can be used to apprise senior management and external stakeholders (e.g., investors, regulators) of the financial risks run by the institution in relatively non-technical and user-friendly terms. VaR also can be used to calculate the regulatory capital that a firm needs to underpin its market risks, within the requirements of the Basel Accord.

VaR is one of the few risk measures that can be applied to almost any traded asset class or risk type that is reasonably liquid. Therefore, it has a very broad application across market and other financial risks. For example, it allows comparison of risk-taking activities between disparate
businesses in a way that simpler risk measures (e.g., notional amount, delta) do not. This enables comparison of performance between and allocation of risk capital to traders, product areas, business units, and the firm as a whole.

VaR can be used to measure individual risks (e.g., by trader or desk) in addition to firm-wide risk in aggregate (by combining the VaRs of a given firm’s business areas to derive a net correlated VaR number for the whole institution). VaR can be used to set position limits at the trader, product, business unit, and firm-wide levels.

VaR can be useful as a tool to assess trends and changes in the direction of risk. Because VaR is composed of a series of estimates and assumptions, its accuracy in predicting exact losses will never be exact. However, VaR can give its user the ability to see how risk is trending, where it is concentrated, and so forth, based on the changes of the inputs. As current market conditions change, new levels of VaR are calculated and will, over time, give risk managers a broad view of the direction that risk is heading.

By imposing a structured methodology for critically thinking about risk, firms that go through the process of computing VaR are forced to assess their exposures to traded financial risks. Therefore, the process of getting to a VaR number can be extremely valuable in its own right.

When used in conjunction with other risk measures—stress tests and measures of exposure to risk factors and to issuers—VaR provides useful risk information under normal market conditions. In times of market stress, its usefulness relative to these other risk measures should be expected to reduce; however, this should not imply discarding or disregarding VaR in such times; rather, risk disciplines should continue to consider VaR, but with due adjustment for current conditions.

Addressing the Challenges
A balanced review of the functionalities and advantages of VaR models, as well as their deficiencies, should be followed by a clear discussion as to how to overcome the challenges identified. Clearly, several technical issues need to be solved, as well as qualitative issues regarding the governance and use of risk models. Without attempting to be exhaustive, some of the priority areas to be tackled are as follows:

1. **Technical Implementation:** Many firms still need to make progress in adequately integrating a universe of old and poor-quality legacy trading systems based on outdated technology.

2. **Cultural Issues:** Various cultural issues seem to regularly affect VaR model implementation and usage and include
   a. A lack of meaningful dialogue between market risk management teams and frontoffice traders about the risk profile and how this is changing. In many cases, the market risk teams reside in different locations from dealers, making meaningful dialogue difficult.
   b. Resource limitations, evidenced in some cases by senior leaders of the market risk function lacking any frontline dealing room experience. We believe that market risk functions should be led by seasoned veterans with at least some frontline market experience. More generally, difficulty exists in sourcing staff with an appropriate mix of actuarial skills, mathematical pricing skills (e.g., for options, structured derivatives), technology skills, practical knowledge of how markets work, and an understanding of operational workflow dynamics supporting a global markets operation.
   c. Compliance approaches to VaR, reflected in a propensity of market risk staff and senior management at some institutions who see VaR modeling as “just another regulatory compliance exercise.” In such institutions, VaR results are not produced until well into the following day, by which time many trading positions will have changed,
with the results no longer useful beyond retroactively checking limit compliance and supporting regulatory capital calculations.

3. **System Issues**: Without a doubt, system issues play an outsized role when there is poor performance of risk models. The recent crisis has highlighted various issues in this regard:

   a. **Revision of volatilities**: Firms need to regularly assess whether their data sets provide a fair representation of current market volatility, particularly if back-testing suggests shortcomings in the data being used.

   In some cases, where current market volatility has jumped, a five-year historical data set with equal weightings will not be as responsive to changes in market conditions as one that places greater weight on more recent data points. The converse also can be true, such as when market volatility drops after a period of heightened volatility (as seen in 2003–2004). Shorter data sets will imply a drop in risk levels. This issue is at the heart of the procyclicality debate.

   Risk managers must recognize these ongoing changes in the market and react to them appropriately. Several options exist whereby firms can

   - Revise the volatility estimates in their VaR methodologies (e.g., via manual override) to make them more sensitive to volatility spikes.
   - Use shorter horizon price histories.
   - Give greater weight to more recent observations through techniques such as exponential weighting.
   - Base their VaR assessment on “multi-pass” analysis, in which statistics are run across several time samples (e.g., 10 years, 1 year, 90 days), with the most conservative expression of risk taken to be the institution’s VaR.
   - Implement an “adaptive calibration window” that adapts to the market context (e.g., calibrating on a shorter horizon when a crisis starts and on a longer horizon during a calm period).

   b. **Model accuracy**: VaR models process thousands of inputs and must be constantly tested and regularly reassessed. The accuracy of a VaR model becomes all the more important when one attempts to conduct a stress test with it or use the model in stressed periods, when distortions caused by minor model flaws can be strongly amplified. If a model is very sensitive to some input assumptions, then it could give wildly imprecise readings once “stressed” market values are introduced. A strong back-testing system in which exceptions are thoroughly investigated will help ensure that a risk model will at least give relevant readings during periods of market stress.

   c. **Liquidity**: As explained in the context of liquidity, a firm must look at how its own actions, and the actions of other market participants, affect the market to draw it away from normal conditions. This way, a firm can attempt to simulate a current crisis instead of using metrics from past crises when conducting stress tests.

   One alternative worth exploring would be to draw on systemic risk regulators (or colleges of supervisors) which have, among others, the responsibility of monitoring financial markets. These supervisory bodies could be tasked with the goal of identifying those crowded trades in which bubbles are forming or when risk levels are unacceptable. If successfully implemented, these regimes would help minimize one of the “tail risks” that risk managers have trouble including in firm-specific risk models, and firms’ models will be more reliable if they focused more on their individual operations instead of system-wide trends.

   The systemic risk regulators also could be tasked with coordinating benchmarking
exercises across institutions, designed to identify products that are becoming illiquid or are being treated differently as to banking book/trading book across institutions, as one means of identifying potential systemic issues earlier rather than later.

d. Model complexity: A challenge for risk managers is making the trade-off between increased accuracy, which typically brings with it increased complexity, versus the expediency of being able to produce meaningful results in a timely manner for management. Making changes such as overriding statistically derived volatilities or implementing different forms of exponential weighting or mean reversion may produce more conservative results but also may make the system more difficult to run or may make it more difficult to help management interpret the results and make appropriate management decisions. Sometimes, actions intended to be conservative (e.g., inclusion in a portfolio model of unusual new products with heavy volatility assumptions) can actually have an unintended opposite effect, in which the risk in large opposing generic positions is implicitly “offset” by the conservative volatility measures applied to the special product, and the reported overall risk is inappropriately reduced.

e. Data updates: Volatility estimates can be updated frequently (e.g., weekly, daily). This will result in a direct improvement of the model’s responsiveness to sudden changes in market conditions.

f. Data quality: Good data quality is essential. Proxies for short or unavailable historical data should be avoided (e.g., using corporate AAA corporate data in lieu of AAA collateralized debt obligation [CDO] data). As noted above, the normal-market assumption is fundamental. VaR is useful only if the securities being monitored are liquid. Therefore, when selecting proxies, firms must base their choices on more than just whether two assets have similar historical returns and variances or if the two assets are used interchangeably (e.g., buying a bond and selling credit default swap [CDS] protection). The poor selection of proxies is a fundamental trap when constructing risk models. If illiquid or newly liquid securities are assumed to have the same risk characteristics as securities with an established history of liquidity, then the model will be likely to perform poorly under any stressful scenario.

The use of proxies may be quite common in a large, diverse portfolio, as a firm might struggle to have as many risk drivers as positions; however, not all assets really belong in the market risk model (or in the trading book). In fact, the argument can be made that having a demonstrably effective proxy for a security (or class of securities) should be part of the requirement for treating such a security in the market risk framework.

In addition, there is need for greater transparency as to where proxies have been used and greater analysis of the impact of such use. There may be a tendency to scrutinize proxies only at the moment they are established and from then on to interpret all risks (via proxy or a more direct model) in a like way. A useful diagnostic would be to show how much of a book is modeled at different levels of “directness” with, say, a specific model for an equity price at one end of the spectrum and a proxy of a fixed income instrument to a very generic curve near the other.

g. Back-testing: An essential step of this judgment process is back-testing. Firms need to test the performance of the models to ensure accuracy as well as to understand limitations. If a model indicated “1% level of significance” events happening 20% of the time, then it is apparent that the model is not accurately reflecting the risks
faced by the firm. Alternately, a firm can lower its threshold so that “exceptional” events happen more frequently, forcing risk officers and senior management to constantly reexamine the firm’s risk exposures.

4. Interpretation: VaR results should be carefully interpreted and, in particular, should not be accepted blindly. A critical approach should be used when evaluating model results, where judgment takes account of both the general, methodological limitations mentioned above and whatever specific issues are known to exist with the data (including any lack of full-cycle data).

Models, and VaR in particular, are meant to simplify the real world of securities markets. Therefore, the judgment exercised by risk managers and executive management when analyzing the output of risk models is as essential as ensuring the quality of data and assumptions used as input. Firms can change parameters and raise or lower risk thresholds for internal use to make numbers more applicable to the individual firm. Users must understand the limitations of the models, especially in regard to the significance of trends in risk.

Above all, VaR should never be used as the sole measure of risk. As one cannot determine the weather by knowing only the temperature, risk cannot be determined by knowing only VaR. When used in conjunction with other risk measures—stress tests and measures of exposure to risk factors and to issuers—VaR provides useful risk information under normal market conditions. In times of market stress, its usefulness relative to these other risk measures should be expected to reduce. However, this should not imply discarding or disregarding VaR in such times; rather, risk disciplines should continue to consider VaR, but with due adjustment for current conditions.

Schedule 4.B highlights alternative or complementary approaches to VaR currently being designed and implemented by two different financial institutions.
Schedule 4B. Alternative Approaches: A Way Forward?

Several firms have started developing alternative approaches to value at risk (VaR). Industry practice is still evolving; the lessons learned from the crisis are a major driver for continuing improvement of banks’ internal models. Two examples of such approaches from major North American firms are offered below, noting that these are only examples of the type of thinking firms are doing and should not be construed as broad-scale recommendations. The first offers an integrated approach to credit and market risk, and the second offers an integrated VaR/stress-testing approach. While these are not the only examples of alternative approaches and might not necessarily be suitable for all firms in all circumstances, they exemplify sound evolutionary approaches worth analyzing.

1. Integrated Credit/Market Risk Approach
One firm has developed a new market risk economic capital model during 2008, which went live in February 2009 after approximately 5 months of parallel operations.

Objectives
In developing this model, the firm sought to achieve the following high-level objectives:

- To reflect the relative liquidity of the underlying risks over a defined capital horizon; the model captures positions in both liquid risks and less-liquid products (e.g., private equity).
- To enable the integrated modeling of market and credit risk capital; event risks (e.g., defaults) and large discontinuous moves in price/risk premium/correlation are incorporated.
- To obtain relatively stable market risk capital. By using a long calibration window and stochastic volatility/correlation, we balance the requirements of stability and picking out extreme periods of volatility and correlation that are important for the current portfolio. The capital output is more stable than one based on the standard VaR and stress measurements used by risk management.
- To be sensitive to changes in portfolio composition and market factors and capable of evolving and adapting to new products.
- To have a rigorous basis, enabling a clear statistical interpretation of the results and allowing the explanation of capital changes to trading and management.

This model is conceptually consistent with the incremental risk charge (IRC) developed by the Basel Committee’s Trading Book Working Group, with some key differences in scope and flexibility:

- **Scope:** Instead of limiting the approach to default and downgrade risk, as the regulators have done in their latest market risk consultation, the firm has extended it to all risk factors and modeled the correlations linking these risk factors with each other.
- The model includes material event risks: at whatever level one chooses to represent the underlying assets, the potential for discontinuous changes in exotic parameters, risk premia, or prices needs to be accounted for.
- **Assumed reinvestment strategy:** The framework allows the reinvestment strategy across liquidity horizons to be flexibly defined, although rollover of positions is assumed in the current implementation.
- **Target loss metric:** The firm focuses on a 3-month, 99th percentile loss measure for performance analysis. However, the model can be used to compute a 99.9th percentile, 1-year capital charge consistent with the IRC.
Importantly, a capital calculation extending to the 1-year credit risk capital horizon closes potential regulatory/accounting arbitrage opportunities. It provides a macro view of the firm’s positions across the liquidity and accounting spectrum which, along with stress testing across risk disciplines, is essential for a comprehensive understanding of the firm’s risk position.

The firm considers integrated modeling of market and credit risk to be a reasonable and practical foundation for computing trading book regulatory capital and has called on the Basel Committee to consider its model as part of the forthcoming in-depth review of trading book capital charges.

**Calculation Mechanics**

Positions are represented as profit-and-loss (P&L) distributions conditional on a set of risk factors.

*Selection and Modeling of the Risk Factors*

**Market risk.** The market risk factors are selected both statistically, based on their contribution to P&L variance, and qualitatively. Portfolio-dependent principal component analysis is performed for each line of business. We then undertake independent component analysis and use fat-tailed marginal distributions calibrated off 4 or more years of history.

**Spread and default risk.** The firm uses a combined model of default and spread risk, capturing spread movements, default events, correlation between defaults and spreads, and random recovery rates. Common systemic factors drive default events and loss given defaults. Monte Carlo simulation is used to obtain a loss distribution at the liquidity horizon. We simulate the distribution of spread/default risk conditional on moves in the major market risk factors so we can integrate the spread/default risk P&L with general market risk.

**Illiquid positions: Stand-alone risk models.** Specific models are used to incorporate the less-liquid positions (e.g., AltA, Private Equity, ABSs) into the framework.

The key risk factors driving changes in product value are identified and mapped to the bank-wide risk factors. Conditional sampling is used to obtain value distributions.

*Monte Carlo Simulation of the Loss Distribution*

Each risk factor is associated with a specific liquidity horizon, consistent with the time necessary to defease the risk. The time-step of the simulation is the shortest liquidity horizon.

The diffusion returns are drawn from the distribution of market factors. Stochastic volatility is incorporated by randomly varying the parameters of the market risk factor distributions. Jump processes are correlated with market indices via copulas once the event intensity has been defined.

**Validation**

Validation approaches should be tailored to the particular sets of products being considered. In addition to analysis of P&L attribution results, historical simulated back-testing, ongoing evaluation of theoretical assumptions, and understanding the errors in empirical estimation of model parameters and their impact on capital, model validation should rely heavily on periodic capital measurement of standardized benchmark portfolios—test decks. Comparing capital outputs at the bank level will yield very little insight as to the quality or completeness of the risk modeling. The firm envisions a master set of portfolios defined by a regulatory industry consortium. Each portfolio would have subportfolios representing standard risk decompositions (e.g., long–short or by risk rating, maturity, product). Portfolios would be designed to include vulnerability to recognized event risks, and firms would be required to run those portfolios materially relevant to their own risks. These capital benchmarks would be run regularly (at least quarterly) and also would be used as part of the standard model approval process to demonstrate and explain the impact of a new product or model feature on the bank’s capital.
2. Integrated VaR and Stress Testing Framework (iVAST)

Another firm developed an integrated VaR and Stress Testing (iVAST) framework in 2008, began parallel testing in 2009, and is scheduled for live implementation in 2010.

This firm’s main objective behind iVAST is to create a robust risk capital methodology that captures the strengths of both stress testing and traditional statistical modeling like VaR. The stress scenarios are designed to provide extreme systemic shocks that could occur over a 1-year horizon under conditions in which positions remain illiquid. The VaR, on the other hand, captures the risk under normal market conditions in which positions can be liquidated within a 1-day horizon, yet with a constant level of risk over the year. In addition, the statistical noise produced by the VaR engine is used to provide “fuzziness” to the stress scenario outcome.

The third component of iVAST is Business-Specific Stress Testing (BSST). The BSST caters for extreme events that are absent from both the normal VaR engine and the systemic stress scenarios.

The iVAST framework is based on the following principles:

- Economic Risk Capital (ERC) is measured over 1 year (which assumes that it takes a year to replenish capital under stress conditions).
- Capital is based on unexpected loss (not expected loss).
- There is a 99.97% downside confidence interval (CI; equivalent to a 3bp default probability, targeting an AA credit rating).
- The level of risk is constant over the 1-year capital horizon (assumes the business operates as a going concern, needing to maintain a constant risk profile to support customer flow).
- A clear distinction exists between price risk and value risk (consider AFS and CVA; both terms are defined under “Scope” below) as part of price risk together with pure trading positions (denoted generically as “market risk”).
- There is full inclusion of tail risks:
  - Fat-tails (non-normal price behavior) for individual market factors;
  - High correlations during stress periods; and
  - Lack of liquidity as markets crash.
- Procyclicality is avoided (should yield approximately constant risk capital through the cycle for a fixed portfolio).

Scope

The iVAST model covers:

- Trading risk;
- Counterparty credit exposure on derivatives (CVA), due to both changes in credit spreads and changes in the market factors that drive the exposure on derivative contracts;
- Spread risk for securities portfolios accounted for using available-for-sale accounting (AFS); interest rate risk in the banking book due to potential changes in risk-free rates is not included in the iVAST model but is covered by a separate model.

These exposures are deemed to be subject to price risk because either:

- Value is expected to be recognized in the future at the then-current market price; or
- Accounting convention (mark to market or AFS) causes the bank’s equity to reflect the impact of then-current market prices, causing an equity impairment equivalent to 1.

Risks Included in iVAST

Four risks are included in the iVAST model.

Systematic Event Risk

Systemic event risk is defined as the risk from extreme co-movements among market variables
that occur during market crisis. The specification of the events needs to be carefully designed to be consistent with the economic capital calculation. First, the length of the stress is 1 year for all market variables. Second, the scenarios are assigned statistical probabilities by evaluating the magnitude and co-outcomes of the stress scenarios in the context of historical data back to the 1920s. Third, unlike VaR, they do not assume that positions are liquid.

Systematic market stress scenarios are the primary determinant of economic capital for most realistic portfolios. This is not a surprise. Experience shows that losses at banks are primarily driven by crises in financial markets rather than random outcomes in specific market variables. This is especially true when exposures that are heavily dependent on credit spreads (CVA and AFS) are included in the scope of other trading risks. This simplifies the parameterization of the iVAST model by allowing the outcomes of other market variables to be evaluated conditionally on the outcome of credit spreads. This occurs during market crises such as 2008 and 1932.

**VaR**

Annualized VaR at the consolidated level measures the earnings volatility if all positions were perfectly liquid. Put another way, it measures our uncertainty about earnings, conditional on our market expectation. If our expectation is 0 (no event), VaR records our uncertainty regarding earnings. If our expectation is that a stress will occur, VaR continues to measure our uncertainty regarding the realized losses.

Because VaR measures our uncertainty regarding our conditional expectation, it is uncorrelated with our conditional expectation (i.e., the stress-test outcome). Therefore, iVAST treats VaR outcomes as uncorrelated with stress-test outcomes.

**BSSTs**

BSSTs fulfill several roles in the iVAST model. First, they provide for idiosyncratic risks that are, by definition, not included in the systematic market stress. For example, in an equity pairs trade with a net beta of 0, the systematic stress test will show a 0 loss. The business-specific stress test is defined by business management and risk management to capture the loss of the pairs trade at the appropriate CI. When used in this way, the correlation of BSSTs with the systematic stress outcome is 0.

A second role of BSSTs is to record systematic risks that are not easy to include in systematic stress tests, often due to the complexity of the instrument. In this case, the systematic loss is computed at the iVAST CI. Then, this loss is combined in the iVAST model using a correlation of 1.0.

A third role of BSSTs is to provide a benefit of liquidity. In this case, the reduction in loss compared with application of the corporate stress scenarios is computed. This benefit occurs because the price moves in the corporate stress test occur over a 1-year horizon. Where there is a provable reduction due to the liquidity of market variables, a BSST can be included with a correlation of 1 and positive P&L. This acts to reduce the systematic loss in the stress scenario.

**Default Risk**

Default risk is broken into two components: systematic and idiosyncratic. Systematic default risk is included in the iVAST model by adjusting the stressed credit spreads in the systematic market stress. If an exposure does not default, it is subject to the systematic market stress. If an exposure defaults, the loss equals the current value less the recovery rate, given default.

Downgrade risk is not included in the iVAST model. Research indicates that downgrade risk does not produce stress losses greater than spread stresses alone. Specifically, there is not a predictable change in spreads after downgrades occur. This indicates that spread changes occur before a company’s credit rating is downgraded.

**Scaling Results to 99.97% CI**

The iVAST model computes the expected loss at the 98th percentile downside CI. The result is
doubled to produce the loss at the 99.97% CI. This scaling factor is based on the $t$ distribution with 5 degrees of freedom. This approximation is based on historical research regarding the skew (near 0) and kurtosis (about 6) of credit spread changes over a 1-year horizon.

**Allocating Capital to Business Units**

Economic capital at the business unit level is computed by the iVAST model in two ways:

- **On a stand-alone basis:** This is useful to evaluate the behavior of a business if it is sold or spun off as a separate entity (e.g., a hedge fund). It also is useful because it does not depend on the other positions in the firm’s portfolio of market risks. Particularly for smaller trading units, there may not be a stable relationship between the unit’s trading outcomes and the outcomes of the firm’s other market risks.

- **On a marginal basis in the context of other risk positions:** This is computed by the iVAST model based on the expectation of losses in the 98th percentile downside that are attributable to each business unit. Because the expected loss in the tail is a coherent risk measure, this calculation is well-defined. The sum of the expected losses for the business units equals the total expected loss. This reveals the impact of each business unit given the firm’s overall risk exposures.
INTRODUCTION

Financial institutions and policymakers have devoted significant attention to the issue of procyclicality. While several policy options currently are being considered by regulators in order to dampen procyclicality, the industry is employing and continues to develop internal techniques and practices to manage economic cycle fluctuations and their implications for capital and risk management. As in the public sector, industry techniques for managing risk across the economic cycle are evolving rapidly in light of lessons learned during the recent financial crisis and this discussion reflects the current direction of development, calling attention to some basic issues that should be kept in view.

In this document, the Working Group on Risk Management (WGRM) analyzes current and emerging industry trends and practices for controlling and managing risk and capital and the relationship between these across the complete economic cycle. Employing and strengthening such practices will help minimize the adverse effects of procyclicality on firms’ risk and capital profiles.

The observations on industry practice were obtained from an informal survey of Steering Committee on Implementation (SCI) member firms, covering several areas of risk management, focusing on the challenges of controlling and managing risks across the full economic cycle to dampen procyclical effects; the summary conclusions from the survey were subsequently discussed by the wider Working Group. The areas covered included risk appetite, risk measurement models, capital planning, and governance arrangements. In total, responses were received from 19 financial institutions from Europe, North and Latin America, the Middle East, and Asia.

Although occasional references are made to some of the policy options currently being considered by regulators, a thorough analysis and commentary on those policy proposals are not the main purpose of this analysis; rather it looks at the challenge of managing risks across the full economic cycle from the firm’s perspective. In this way, the paper takes principally a microprudential view of these challenges. The regulatory policy options will be addressed by the Institute through dialogue with the regulatory community and formal responses to regulatory proposals through the Institute’s Steering Committee on Regulatory Capital and its Working Group on Capital Adequacy.

A DEFINITION OF PROCYCLICALITY

Procyclicality refers to feedback mechanisms that amplify business cycle fluctuations. Within the financial sector, natural responses to the business cycle include some reduction in lending as borrowers weaken in line with economic circumstances, with the result that some are unable or unwilling to pay the higher spreads required to cover their increased credit risk or otherwise to comply with (possibly tightened) lending standards required by institutions.

Procyclicality entails actions, requirements, or conditions that incite behavior beyond this
natural response, which lead to curtailing lending despite demand for loans at appropriate pricing and in some cases to “fire sale” asset reductions at prices below fundamental values, potentially leading to downward spirals in value that affect other holders of similar assets. These responses, in turn, result in further weakening of economic activity.

Closely related to this is the fact that the current prudential standard for regulatory capital, Basel II, contains minimum capital requirements that are more “risk sensitive” than those of its predecessor, Basel I. Thus, the minimum capital requirements under Pillar 1 of the Basel II framework would conceptually be expected to rise during economic downturns (in rough proportion to the increased default risk in banks’ portfolios) and similarly to decrease during economic booms. This variation of minimum capital requirements across the economic cycle in the Basel II framework is frequently referred to as procyclical (the extent of any such procyclical effects being still subject to demonstration). Regardless of their sources, potential procyclical effects must be carefully understood, planned for, and managed.

The danger is that firms that have not taken adequate precautions (as a result of management decisions or market or regulatory incentives) to build up sufficient capital during good economic times (when it is easier and cheaper to do so) may be forced to raise capital during economic downturns (when it is costly and difficult). However, Pillar 2 of the Basel framework does require banks to operate at capital levels above the regulatory (Pillar 1) minimum and to ensure that they can maintain the adequacy of their capital levels throughout an economic cycle.

PROCYCLICALITY AND THE FINANCIAL CRISIS

Several factors have contributed procyclical tendencies in the unfolding of the recent financial crisis. The most relevant factors have been discussed many times, including in Appendix A to the CMBP Report. Taken together, the factors that caused the crisis combined to exert considerable pressures on the liquidity and capital positions of certain firms in a very short time during the recent financial crisis. A failure by many firms to anticipate adequately the resulting need for additional capital and liquidity resulted in firms’ needing to sell assets quickly (at distressed prices) or use alternative approaches in distressed circumstances to raise capital at short notice.

FINANCIAL INSTITUTIONS’ RESPONSE TO CYCLICALITY

Managing through cycles is a primary responsibility of a firm’s senior management. Stakeholders, including shareholders, creditors, supervisors, and society, expect firms to survive downturns as well as to prosper in benign periods. Regardless of regulatory mandates to build capital levels or provisions in good times for use in bad times, firms, depending to a degree on their specific risk appetites, should have essentially the same goals, with particular focus on building resources in good times to give assurances of survival in reasonably foreseeable bad times.

In particular, senior management is responsible for understanding and successfully managing both risk and capital—and crucially, the relationship between the two—across the complete economic cycle. This is a clear conclusion of the Recommendations of the CMBP Report but is worth repeating in the specific context of managing cyclicality.

It follows further from those Recommendations that firms need to monitor and assess their evolving risk profiles against the constraints expressed in their risk appetite statements continuously and to ensure that business activities remain in line with strategic objectives. This is particularly important in boom times, when there is the risk that opportunities will be overestimated and risks underestimated, and that appetite
for risks may (consciously or unconsciously) increase significantly—in particular, lending standards may be excessively weakened. As the CMBP Report Recommendations point out, this assessment should include careful attention to the activities of third parties, as appropriate.

The challenge of procyclicality also raises a broader set of management problems associated with the cycle. In particular, absent consideration of procyclical effects, a firm could plan to manage risk and capital with actions that make sense for an individual market participant, assuming that its actions have no effect on the market as a whole. However, when many or most participants intend to use the same strategy in response to market threats or opportunities, the market will be affected, and each additional action of the same type can drive the market further in the same direction during an overly exuberant expansion or downward market correction. This situation—in which the collective industry response to cyclical moves exaggerates the magnitude of the swing—is an important manifestation of procyclicality that must be considered in firms’ risk management processes as well as by regulators.

Thus, firms need to maintain awareness for management and risk-management purposes of potential market-wide effects. A firm cannot look just at the decisions it might take or might wish to take under given circumstances in isolation. Although wider market behavior is very difficult to predict, thinking about possible or actual stress events should take into consideration the fact that markets may be affected by simultaneous moves of multiple participants. Thus, when considering their potential actions and responses to economic and market developments, firms should, insofar as possible, take into account information on macrofinancial or market vulnerabilities available from the public sector, or from the private sector, as sources of such information become available. The IIF has organized a Market Monitoring Group of very senior and experienced persons to develop such views.

New Recommendation K: Institutions should continually assess their risk appetite and business activities—particularly during boom times—to ensure that they remain in line with strategic objectives and are appropriate for the current business and competitive environment. When considering their potential actions and responses to economic and market developments, both business management and risk management officers should take into account, insofar as possible, likely macrofinancial developments in the overall market environment.

PROCYCLICALITY AND RISK MANAGEMENT

Given the fact that the primary tools for measuring risk are modeling, historical data, and scenario analysis, firms’ assumptions embedded in the design of these models and tools can potentially influence or exacerbate procyclicality. In particular, risk models and capital calculations that are highly sensitive to and reflective of current conditions may without due attention encourage firms to take on excessive risk in upturns when returns are healthy and the apparent downside risk is low.

Of course, when economic downturns occur, prudent risk management dictates that appropriate measures should be taken to respond to the increasing risk in the portfolio, possibly including a measured pull-back of risk-taking, as well as any needed build-up of capital. However, in an analogous fashion to the situation during boom times, highly sensitive risk models and capital calculations may without due attention encourage firms to respond in an excessive fashion in the downturn, potentially inducing an excessive conservatism that may unduly hinder economic activity in the broader economy.

Similarly, accounting provisioning which was in many instances before the crisis based on a
relatively narrow interpretation of the “incurred-loss” model may have resulted in firms’ results not reflecting the full risk over time of their credit books. On the other hand, banks’ internal performance measures often consider expected losses rather than accounting provisions (e.g., in risk-adjusted return on capital [RAROC] or similar frameworks). These measures may show lower levels of profitability before a downturn than would accounting profits. The currently pending discussions of a reform of provisioning requirements for accounting purposes may affect both internal and market analyses of cyclicality in the future in ways that cannot yet be analyzed completely.

Banks need to reconcile two—potentially conflicting—objectives in their risk measurement systems:

1. For the purposes of day-to-day risk management, institutions require risk-sensitive measures that provide an accurate picture of how the risk profiles of transactions, portfolios, and customers are changing in response to underlying changes in economic conditions. These measures are typically by their nature relatively volatile and as such contribute to a degree of sensitivity and variability of risk (and resulting capital) measures.

2. For longer term or more strategic risk and capital management decisions, alternative measures of risk (and capital) that are less sensitive to changes in current conditions and relatively more stable across the economic cycle often are to be preferred. These measures will show less volatility over an economic cycle, hence permitting more orderly planning; however, at extreme points in the economic cycle they may, taken alone, over- or underestimate the current risk in the portfolio.

These two concepts often are linked to the shorthand technical terms point-in-time (PIT) and through-the-cycle (TTC), which are mostly used to distinguish between two different approaches for designing credit rating tools for the assessment of default risk, with the former indicating risk measures that are relatively sensitive to and reflective of conditions at a specific point in time, and the latter referring to risk measures that remain relatively more stable across the economic cycle.\(^\text{113}\) As a result, for any given portfolio, credit risk capital requirements using a more PIT approach will tend to fluctuate over a cycle to a much higher degree; conversely, those using a more TTC approach would tend to be relatively more stable across the economic cycle in comparison.

Although the PIT and TTC acronyms are mostly used in relation to credit risk measures, the difference in the degree of sensitivity to current conditions of the risk measures reflected in these terms is also an important consideration for the design and interpretation of other risk measures. For example, this concept can be easily applied to different market risk measures, with “traditional” value at risk (VaR) calculations that are based on a relatively short period of historical market price data being relatively sensitive to changes in market conditions and therefore analogous to those credit-risk measures that are more PIT in nature. Similarly, VaR calculations that are based on a relatively long period of historical prices (or stressed VaR calculations as required by the new Basel Trading Book rules) are more analogous to the TTC credit risk measures since they are relatively less sensitive to changes in current market conditions and hence produce relatively more stable measures of market risk (for a given, fixed portfolio) as market conditions change.

\(^{113}\) This document uses the terms PIT and TTC, respectively, to represent risk measures that are relatively more or less sensitive to current conditions. While this usage can be considered somewhat “loose” in the academic sense, we believe it enhances readability of the document without compromising its technical integrity.
Both kinds of risk measures—those that are either more or less sensitive to changes in current conditions—have important roles to play in firms’ internal risk management frameworks. While relatively stable TTC risk measures that are properly calibrated across the full economic cycle provide useful medium- and longer-term guidance, firms also have a critical need for more sensitive tools, including PIT risk measures, for the rapid detection of changes to the risk profiles of individual borrowers and portfolios, and identification of emerging risk issues.

New Recommendation 1: Firms should examine potential exposure to cyclicality in their business models, policies, and measurement tools. This should cover all relevant risk types of the firm and include an assessment of the:

- Extent to which risk measures tend to be “point-in-time” vs. “through-the-cycle”;
- Reliance on the liquidation of positions as a response to increasing risk;
- Reliance on cyclically sensitive factors (e.g., interest rates) in the firm’s business model;
- Degree of maturity transformation in firms’ and customers’ portfolios; and
- Vulnerability to a more extreme downturn than has been observed in recent history.

APPROACHES TO RATING SYSTEMS: DIFFERENCES BY INSTITUTIONS AND PORTFOLIOS

In reality, the majority of credit-rating tools and other risk measures in actual use in financial institutions neither reflect purely PIT characteristics nor do they represent pure TTC measures. Different firms have developed their systems based on different rating philosophies—which is beneficial to avoid “herd” and “model” risks. Some firms state that they use more TTC approaches, similar to those used by rating agencies, particularly in the wholesale banking area; however, many institutions operate “hybrid” systems under Basel II, in which the assignment of a borrower to a particular rating grade is based on current (PIT) information about the borrower (e.g., financial information, qualitative data, market environment), but the probability of default (PD) assigned to the rating grade reflects a longer-term average of default probabilities for this particular grade. This calibration to a long-term average PD also is required by the Basel II framework for the calculation of regulatory capital.

In retail portfolios—with the exception in some cases of mortgages given their longer-term nature—most banks operate “purer” PIT approaches, with both the assignment to rating categories (or scores) and the calibration of the rating to PDs being based on relatively short-term information. This approach reflects the observation that recent data are more predictive of the risk in retail portfolios with their often very short-term exposures (e.g., credit cards, overdrafts) and the underlying dynamics of the customer population.

It is important to note that the higher volatility in risk parameters for retail exposures does not necessarily translate into high volatilities in capital requirements (at least in economic capital models), as the ratio of unexpected loss (at any fixed confidence level) to expected loss is typically lower for retail segments than for corporate segments. In a corporate loan book, capital requirements are generally much more sensitive to changes in underlying risk parameters.

Firms also may use PIT systems because of the difficulty of calibrating and validating TTC systems. Quantitative factors discriminating between customers of different credit quality usually show a strong relationship to underlying macroeconomic variables and are as a result cyclical. Therefore, in TTC systems the relationship among quantitative characteristics, ratings, and parameter values must change over
the cycle to maintain a more stable view of a portfolio’s risk. This requires adjustment factors (as described below) or reliance on significant qualitative (expert) input, each of which comes with limitations and presents issues to which institutions need to be sensitive in using these measures. Expert-based systems are particularly challenging where implemented in multiple locations with many users—owing to potential differences in interpretation and evaluation of qualitative factors. To succeed with these systems, firms should be aware of the issues and proceed carefully, with good judgment and rigorous management.

**PIT and TTC measures are used for effective risk and capital management.**

Institutions in general believe that both PIT and TTC measures are needed to satisfy the objectives of risk and capital management. This can be achieved either through separate calculations for different applications or through adjustments made to the calculation results obtained through either of the methods.114

Several banks differentiate between strategic and operational management objectives, with strategic decisions (including capital allocation to business lines, limits, and so forth) based on more stable TTC measures, while operational decisions are firmly rooted in PIT measures with high-risk sensitivity to enable the institution to react quickly to changes in underlying risk dynamics of its portfolio. This is applied across credit and market risk (e.g., trader limits might be set on PIT VaR measures, while capital for the overall trading operation might be allocated on the basis of a stressed VaR, which is inherently more stable over time).

For pricing purposes, most institutions acknowledge that PIT measures are necessary, and in cases in which internal models are more TTC in nature, banks are working to translate these measures into more PIT estimates to be able to more accurately price transactions.

For economic capital (and, in some cases, regulatory capital), TTC measures are favored as banks acknowledge that capital management across the cycle needs to ensure a stable capitalization level, both permitting build-ups in good times (when PIT would yield lower numbers) and avoiding fire-sale reactions to temporary downward spikes in bad times. The main measures used by institutions appear to be forward-looking capital planning activities that incorporate stress scenarios (see the “Capital Planning” section below). In this respect, some firms have indicated that the cyclical in capital requirements emanating from PIT rating systems (or other PIT measures; e.g., VaR) can be counterbalanced with a flexible strategy to managing available capital to keep the capital adequacy ratio relatively stable over the cycle (as this is the measure that matters). It is noted that in this respect contingent capital could play a useful role, depending on how the concept is developed.

Pure TTC systems are seen as insufficiently granular with insufficient “early-warning” potential to be used alone, as there would be very few rating migrations that could be used as an indicator for a deterioration in credit quality in the portfolio. In a purely TTC system, differences in the risk profile would be the result of default rates per rating class varying across the cycle (e.g.,

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114 Like regulatory capital requirements, firms’ risk measurement systems aim to be risk sensitive. The term “risk sensitive” may refer to the level of default risk or volatility of default risk. Reference to market risk practice may be helpful for thinking about risk sensitivity in the credit risk context as well. A firm may consider long or short runs of data to build a VaR model, but the analysis includes focus on the variance of the loss distribution. In credit terms, this is closer to asset correlation in concept than the probability of default (PD). A well constructed approach to credit risk needs to consider how PDs, correlations, and volatility are taken into account for loss distributions, regardless of whether a predominantly PIT or a TTC or a hybrid approach is used. This area would benefit from more attention from the risk community.
one would expect more defaults in a BBB rating class during a recession than during boom times; this also is borne out by rating agency statistics). However, this can only be established “with hindsight,” that is, during the monitoring of a rating system’s (or a portfolio’s) performance. PIT rating systems and the migrations from one grade to another could, on the other hand, provide a leading indicator for rising portfolio defaults (and hence a deterioration in credit quality in the portfolio) in the future.

**New Recommendation M:** Institutions should align their risk measures with their intended strategic and business objectives, balancing the need for point-in-time risk-sensitive measures for day-to-day risk management with longer-term strategic objectives for stable capital requirements. Firms should ensure that these choices are clearly communicated to all involved and that models and methodologies are consistently applied and appropriate for their use.

Banks should make conscious choices about design of risk measurement tools, deciding whether these should be relatively more sensitive to and reflective of current conditions or be more stable across the economic cycle—and thoroughly understand the consequences and vulnerabilities associated with their choice of methodologies in each case. In particular, firms should ensure that credit risk measures are sufficiently sensitive to enable the rapid detection of deteriorating counterparties for day-to-day risk management purposes while avoiding excessive reliance on PIT measures for forward-looking risk and capital assessments.

**Adjustments are made to PIT and TTC systems to ensure the alignment of measures with business objectives.** Where banks do not use two separate sets of measures to cater for strategic and operational objectives, adjustments are made to the existing measures to make them better suited for additional applications. For this reason, several institutions make adjustments to their PIT measures to obtain more stable capital figures. Some banks use a system of caps and floors for the PIT measures in their economic capital models to make the capital measure less cyclical and avoid misleading longer-term implications of temporary peaks and troughs; however, they acknowledge that this is still more volatile than “true” TTC. Others use stress scenarios to establish a more stable capital measure, avoiding overstating the upside. This is particularly the case in market risk economic capital models, where economic capital allocations may be based on stressed VaR requirements.

In the United Kingdom, a tool has been introduced to provide appropriate adjustments across time of the capital requirements for principally PIT-oriented retail credit rating systems. This so-called “variable scalar” approach is used by banks to make relevant capital requirements more stable and realistic across the cycle. In the United Kingdom this method (which has been the subject of extensive study by the FSA and the industry) is used to adjust the Pillar 1 capital requirement for relevant portfolios to get a “true” long-run average capital requirement. In other jurisdictions some banks use similar approaches in their economic capital models or in the Pillar 2 Internal Capital Adequacy Assessment Process (ICAAP) to counteract the cyclicality in their Pillar 1 requirements.

Where systems are more TTC, the biggest potential worry is that risk is understated during a particularly adverse economic environment. In recognition of this fact, several institutions have introduced adjustments to their TTC measures (e.g., one has tried to quantify the amount by which average loss rates would understate actual loss rates at low ends of the cycle and considers this in its economic capital framework). Several other firms have indicated that they also make adjustments to their estimates if they feel they
might understate the risk, either through an override of the PDs derived from long-term averages to reflect current (worse) conditions or by establishing specific add-ons to risk and capital estimates at the worst parts of the cycle.

Detailed, internal data are critical and will be improved over time by all firms, but firms will often need to consider additional reference data covering multiple downturns (especially if available internal data do not) to provide context for understanding true long-term averages, which are driven by the frequency and severity of recessions. Firms should consider the same sort of reference data to inform their stress-testing programs, whether using a PIT or TTC approach.

**PROCYCLICALITY AND CAPITAL MANAGEMENT**

Active capital management is essential to capital sufficiency through the full economic cycle. In general, most financial institutions explicitly include cyclical considerations when designing and implementing their capital management policies and systems. Through such measures, firms should, with active management, aim to establish a sufficient capital base even during times of economic downturn.

Ideally, firms should ensure that capital is sufficient even during severe economic downturns by anticipating such circumstances. Once a downturn has occurred, however, there are various ways in which institutions can react to raise the capital needed to support both expected and unexpected losses. The firm could sell risky assets to bring the capital requirement down to the level of available capital or alternatively could raise or conserve capital to bring available capital up to the level required by the portfolio.

Selling risky assets when most other market participants are attempting to do the same is clearly detrimental and, as already noted, could have significant procyclical effects (as sales in a down market push prices of assets below their inherent value). However, it may be necessary to reduce concentrated positions, and it is natural that some positions will be eliminated as exposures mature and are replaced by those priced to reflect current credit conditions.

As the crisis has evidenced, raising capital is very difficult when the value of portfolios has been driven down by forced sales or actual losses. In such circumstances, in particular when downturns affect the entire economy, markets become highly risk averse. Consequently, markets may demand more and higher quality capital during the downturn. Accordingly, firms’ planning should assume raising capital will be especially difficult in times of market constraint, as many firms will likely need capital at the same time.

Firms resort to different instruments to satisfy their cyclical capital needs. The specific instruments used vary significantly across institutions, although to a large extent this is a reflection of the availability of certain tools in specific jurisdictions. Just to cite an example, banks operating under a cooperative or mutual structure will naturally need to rely more on internal financing from their members rather than on market instruments.

Recently, contingent capital115 has attracted increasing attention and has been used by some institutions while being considered by several others and by the regulatory community.

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115 Although there is not as yet a widely accepted definition of contingent capital, the term generally refers to debt instruments that convert to equity on the occurrence of specified events, thus giving firms the benefit of deductibility of interest on debt in normal times and the assurance of a source of Tier 1 capital in case a top-up is needed in response to a stress situation. In at least some versions, such instruments would be subordinated debt counting as Tier 2 capital before conversion but core Tier 1 capital after conversion. This discussion of contingent capital is necessarily tentative. The Institute is studying the various ideas being developed by firms and by the official sector, and a fully developed position on the issue must await further discussion and any specific proposals by the official sector.
Contingent capital has been seen by some as a potential approach to counteracting cyclicality in capital requirements by providing a commensurate flexibility in the cost and quality of available capital at different points of the cycle. However, some firms have doubts about the economics of such instruments and about whether the market will actually be interested in purchasing them.

Some firms see a clear need for the ability to include sound and robust contingent capital instruments or hybrids as part of the overall capital structures. They argue that allowing such instruments would give them access to the market for capital at different times and to appeal to a broader spectrum of investors than would be the case if they were limited to straight equity.

A further important issue is the terms of convertibility of such instruments and the degree of flexibility that firms should have as to when to trigger the conversion. On the one hand, automatic triggers have the advantage of providing a transparent instrument on which investors can rely and which isolates firms from market pressures that may attend a decision point on conversion. On the other hand, such automaticity would reduce the flexibility that firms would have to deal with variable market circumstances, and automatic triggers could become negative market signals.

The industry, therefore, will analyze in detail the forthcoming proposals from the Basel Committee in regard to a revised definition of capital. While the importance and robustness of equity as a predominant form of Tier 1 capital is recognized, disregard of hybrid instruments as a capital element could result in excessive rigidity that would deprive banks of essential tools to deal efficiently with capital deficits in the most crucial circumstances in ways that would be less procyclical.

More generally, firms resort to a wide range of capital tools, including common shares and mandatory convertible instruments (a form of “contingent capital”), and hybrids and committed capital lines. Furthermore, other instruments also are commonly used and can be implemented at short notice (avoiding the timing uncertainties or, in some cases, shareholder approval required for going to market) such as dividend reductions, using authorized shares to settle compensation plans, sale of treasury stock, adjustments of share buyback programs, and so forth. These tools have proven to be effective in times of capital constraint, provided that structural arrangements exist to use such tools.

Importantly, excessive optimism regarding the firm’s capacity to raise capital during economic downturns ought to be avoided, as the recent experience of the crisis has shown and as prior IIF Recommendations on liquidity have pointed out. A review of industry practices indicates that many firms structure their capital planning in such a way that there is no assumption that new capital can necessarily be raised in downturn scenarios. Accordingly, these firms’ capital planning includes features that prevent capital depletion when the economy starts to turn. In many cases, this means the conservation of capital through the cycle.116

As a complement to that, firms also should possess on an ongoing basis an adequate assessment of their capacity to raise funds in the market using all available instruments. Failure to do so can lead to situations in which the firm could find out that, contrary to its expectations, the market has closed. One developing practice is for firms to “test the market” on an ongoing basis to ensure that the firm is still able to raise funds. These concepts are developed in the IIF Recommendations with respect to liquidity but are equally applicable in this context.117 It may seem advisable that firms constantly invest in ensuring the market knows them well and has confidence in the institution in order to ensure access to capital even during economic downturn.

116 Additionally in the Spanish context, the dynamic provisioning approach was mentioned, that made additional funds available as loan losses mounted during the current crisis.

117 See Revised and Restated Recommendations A3–A10.
In addition, firms also have tools to manage capital requirements. Many firms have developed tools to adjust their Risk Weighted Asset (RWA) profiles to the capital available, primarily in circumstances in which no additional funds can be found (or given specific circumstances in which the firm’s risk appetite is better served by such adjustments). These tools include securitization of assets, purchase of (name-based) hedges through credit default swaps (CDSs), increasing collateral requirements, increasing the use of netting, and so forth. Many of these tools have however lost some of their attractiveness or feasibility during the crisis owing to market conditions.

**New Recommendation N:** Firms should have available a set of potential measures for adjusting their actual capital structures in line with cyclical developments in capital requirements. This could include instruments such as contingent capital but should also consider the articulation and implementation of an active and flexible dividend policy and active management of share buyback programs and similar tools. A choice of tools should enable banks to balance the need to conserve capital with wider business and strategic objectives.

The capital plan should not rely excessively on assets sales or raising capital in the market as a response to adverse conditions. Along with share buybacks, contingency plans should include downside triggers, for example, when one would set aside short-term growth objectives or sales targets in incentive plans, or when one would tighten lending standards, as well as upside triggers, for example, when one would review practices to determine if lending standards were easing in response to competition or when one should review scenarios in stress testing.

**CAPITAL PLANNING**

Capital planning necessarily involves the determination of the horizon through which the firm is aiming to sustain a stable capital level. However, this does not necessarily mean that firms should have a fixed horizon for all capital purposes. In effect, most firms work under a dual approach consisting of both a 1-year and a 3-year planning horizon. The 1-year plan is normally aligned with the business budgeting cycle, while the 3-year plan is more directly in line with medium-term strategic planning processes. These time horizons are by no means a fixed standard. Several firms use longer time horizons (e.g., 4–5 years), while others opt for shorter (e.g., monthly or quarterly) forecasts. Finally, the decision on the capital horizon depends on the specific circumstances of the firm and in particular its mix of business.

While the specific horizon varies across firms, one feature emerges as a sound practice: the constant evaluation and monitoring of the adequacy of the horizon chosen. Several firms have rolling 1-year forecasts that are monitored and updated with varying frequency (e.g., quarterly, twice a quarter, monthly, ad hoc circumstances such as “when significant events or changes in the business occur”). Constant monitoring and dynamic evaluation of the adequacy of the horizon are therefore valuable for effective capital planning.

**CAPITAL PLANS AND LOSS ESTIMATION**

Effective capital planning necessarily involves an estimation of the capital position of the firm through downturn economic conditions. A useful tool for such estimation is the use of stress and scenario testing. Firms commonly undertake stress and scenario testing of their capital plans, including both single-risk stress scenarios (e.g., foreign exchange rate changes, credit migration, consolidation of off-balance-sheet vehicles) and multi-risk stress tests, which are generally
based on macroeconomic scenarios. Such tests complement specific stress tests that are increasingly mandated by the regulatory authorities. These stress tests generally quantify effects on income, provisions, RWA, and economic and regulatory capital. (Stress testing is discussed extensively in the IIF Recommendations on risk management, both in the CMBP Report and in the Report to which this analysis is attached.)

As part of this process, firms ought to evaluate and determine the sources of losses that could affect capital supply (through profit and loss [P&L] and direct capital impacts). Commonly, such sources include specific and general loan loss provisions and impairments, as well as credit default adjustments for valuation purposes. In addition, regulatory deductions (e.g., for excess of expected loss [EL] over provisions under Basel II) are considered, as these tend to increase in stress scenarios (under the current accounting standards). On the capital requirement side, scenarios often will be linked to macroeconomic variables that affect estimates of PD, loss given default (LGD), and exposure at default (EAD).

The determination of the relevant scenarios is a fundamental step in the process. Sound practice determines that a multiplicity of scenarios should be tested. In effect, many firms calculate both a “moderate scenario” (e.g., mild recession) as well as a “downside scenario” (e.g., severe credit crunch) for their capital plan. Such multiplicity of scenarios allows these firms to have a more robust and accurate assessment of the fluctuations to which capital could be subject through different stages of the economic cycle.

Equally important, the process through which the scenarios are determined should be evaluated for relevance and informed by a combination of statistical and economic analysis along with significant expert judgment. As important as the scenarios used by firms is analysis of how the scenarios change the model outputs; this will be easier if the scenarios contain factors against which the model inputs are regressed (e.g., GDP), but more difficult, requiring more judgment, otherwise.

Management should, consistently with prior IIF Recommendations, be involved in the evaluation of the adequacy of capital planning and the scenarios to test it. Such evaluation could include a comparison of the actual developments against the assumptions used and an analysis of the deviations. While the periodicity of the assessment may vary across firms, the need for periodic evaluation and the related adjustments are fundamental elements of adequate capital planning.

New Recommendation O: In performing their forward-looking capital planning both for internal purposes and for Pillar 2 discussions with supervisors, firms should take into account a broad view of potential procyclicality on capital requirements and availability over appropriate medium-term horizons. Such focus on procyclical effects should incorporate the interaction of risk and accounting measures, regulatory requirements, and pending changes therein, and figure in the firm’s program of stress testing.

CAPITAL TARGETS

Capital planning also is closely linked with risk appetite and specific capital targets sought by firms. Review of industry practices consistently showed setting a target capital ratio as part of the risk appetite statement. In most cases, this will be a Tier 1 (sometimes also a core Tier 1) ratio as well as a total capital ratio. The Tier 1 ratio has become more prominent given recent focus by both the market and regulators, and this is reflected in the way firms are managing their capital. Many banks also have a target for their economic capital that will generally be expressed in terms of a maximum level of the bank’s overall risk capacity. Some banks indicated that their target capital ratios may be revised in response to
the anticipated Basel Committee proposals on the quality of capital and possibly a higher minimum (Tier 1) capital requirement.

Another practice observed, which has been found useful during recent times of stress, is to set “corridors” or target ranges for capital ratios. When such corridors are in place, firms manage with flexibility their position within that range: operating at the lower end of the range under stressed circumstances while positioning themselves at the higher end in “normal times.”

While some firms differentiate their target ratios under “normal” and “stressed” circumstances, with the ratio under stress being lower, others do not make this differentiation. The rationale is that the market and shareholders look at the (Tier 1) ratio in an absolute sense (i.e., the bank has to maintain the same minimum ratio at all times). While one practice is not necessarily better than the other, market realities ultimately decide in many cases what the target should be. Importantly, the objective of a stable capital base through the cycle is the main underpinning of the capital target-setting process.

Some institutions also may set a target leverage ratio. Measuring leverage is another key instrument for controlling capital sufficiency. Such targets might be affected by the fact that some jurisdictions have a mandatory leverage ratio; individual firms’ target ratios are commonly lower than the mandatory one. Use of target leverage or other ratios is of course fully appropriate as one of a suite of measurements needed as an internal matter, but internal use thereof as a part of risk management does not necessarily have implications for a leverage ratio imposed by regulation, which raises many additional issues.

As the Basel Committee considers proposals for a global leverage ratio, it is important to keep in mind how such a tool might be more effective under a Pillar 2 approach, which would be consistent with some firms’ current use of such ratios. Providing the flexibility of Pillar 2 allows both firms and regulators to make judicious assessments of leverage without being “boxed” by automatic Pillar 1 approaches.

**PRO-CYCLICALITY CONSIDERATIONS IN THE GOVERNANCE OF RISK MEASUREMENT AND CAPITAL METHODOLOGIES**

Given that risk measures are vital components in assessing an institution’s capital needs, it is necessary that proper governance be established to control the development and use of these numbers. Governance must consider whether the system functions appropriately through the entire cycle.

Oversight and approval generally reaches to the Board of Directors or a delegated committee thereof. Development and execution of the estimation methodologies usually involve both the risk management and finance areas, with exact roles varying from bank to bank. In many firms, risk management plays a leading role in developing risk measures, and finance or treasury manages the overall assessment of capital adequacy and the supply of capital. Business lines also are often represented in some part of the capital planning process. Approval authorities may vary with the materiality of any proposed changes. These issues are covered extensively in Section D.I of the CMBP Report and in Section I of the Report to which this analysis is attached.

Recently, some firms have moved to bring the “demand” and “supply” sides of capital (i.e., risk and finance) closer together. This has been achieved through several means, including:

- Establishing a joint “Risk and Capital” committee that combines the remit of a risk committee with the remit of the Assets and Liabilities Management Committee (ALCO);
- Expanding the remit of the ALCO to include the discussion of risk and resulting capital requirements more prominently on the committee’s agenda; and
- Establishing more “informal” task forces combining representation from risk, finance, and the business to manage capital requirements and available capital on an ongoing basis.
The specifics surrounding risk measures can be complex, and various uses and planning horizons may require estimates suited to those purposes. It is quite possible to assume incorrectly that a measure developed for one purpose can be used for other purposes; thus, metrics were sometimes “adapted” or used beyond their original intent, which led to distortions more easily than many may have realized before the recent financial crisis. Understanding how the numbers that come out of a framework relate to potential losses and the need for capital requires an appreciation of the meaning of the inputs to that framework and the assumptions behind the inputs and the framework. These elements include:

- The degree to which the rating philosophy and parameter calibrations lie toward the “point-in-time” end of the spectrum or to the “through-the-cycle” end and the need to understand the resulting effects on both assumptions and output of the risk management system;
- How the framework interacts with the firm’s accounting systems—what is marked to market, what is measured on the basis of accrual accounting, how differences are reflected in the capital requirement and affect available capital, and so forth;
- What the framework assumes about the ability to liquidate positions, to raise capital at an assumed cost of capital, or the state of the firm at the model horizon; and
- How the various numbers coming out of the framework may vary over the cycle, as well as how the meaning or suitability of those numbers for various uses may vary over the cycle.

Communicating these points to senior managers and the Board presents challenges, as does ensuring consistency when multiple groups are part of the process. Many firms are working to improve communication, and these efforts will continue. For example, one cited the necessity of a holistic view of how the risk methodologies (or changes thereof) affect capital, RWAs, and loan loss provisions.

The models and methodologies used for assessing capital requirements must be properly and regularly validated in line with the regulatory requirements in most countries. Validation results are typically reported to those governing the risk management or capital planning processes. Specifics vary among institutions. One institution indicated that it performed annually a “suitability analysis” of all models and reported the results to the Board.

This emphasizes the need for senior management and the Board to ensure that methodologies are thoroughly understood and properly matched to their uses. These concerns are addressed by several of the recommendations in “Section B. Risk Management Methodologies and Procedures” and “Section C. Stress-Testing Issues” of the CMBP Report. In particular, Recommendations I.30–I.32 address matching analyses to the horizon for which risk appetite is specified and ensuring that models are consistent with experience, sound judgment, and critical analysis. These concepts—not merely statistical accuracy—should be part of validating the soundness and appropriate use of models and risk measurement methodologies.

New Recommendation P: Financial institutions and their Boards of Directors and managements must exercise judgment over business, risk, and capital planning, and the related stress testing, over a planning cycle that includes future cyclical developments. Governance must consider whether the system functions appropriately through the entire cycle and ultimately should be the responsibility of the Board of Directors. It is essential that both risk and finance functions be included in the governance process to ensure that the interaction of risk and accounting with respect to balance sheet, P&L, and capital effects are properly understood and integrated in decision-making processes.
CONCLUSIONS

This analysis has aimed to provide a useful discussion of the thorny issues of procyclicality that firms must confront in improving their risk management performance on the basis of the lessons learned from the crisis. Neither this discussion nor the Recommendations included in it can be considered definitive. Even more than in other areas of risk management today, the thinking sketched here is developing rapidly and subject to ongoing debate and improvement. Quite appropriately, firms will take different tacks or put emphasis on different aspects. This is important and helpful, among other things, to avoid model risk.

Debates also are taking place within the regulatory community, and it will be some time before the broad industry including both sectors comes to conclusions. Nevertheless, the Recommendations should be helpful to firms in developing sound practices within their own needs and regulatory requirements.

The Recommendations and analysis here focus on the risk management side of cyclicality. There also is a risk appetite side, and some basic competitive issues should be considered: firms will take different judgments—subject to discussion with their supervisors, of course—and assessment of cyclical risk and opportunities will need to remain important in a competitive system.

This discussion also begins to touch on the complex question of the appropriate “quality” of capital for the post-crisis world. That discussion is only beginning and will need to await the forthcoming proposals from the Basel Committee before it can be developed fully. This discussion gives only some of the industry’s initial thinking on a small part of those issues.

Finally, the Committee expects that capital planning to lessen cyclicality will continue as a matter of practical and theoretical work for some time to come, in both the official and the private sectors.

The Institute looks forward to constructive dialogue with the official sector on these matters: discussions will need to involve a range of practical and theoretical topics, but potentially should be quite fruitful given the attention currently being given to cyclicality and the rapid advance of thinking on related issues.
Box 2. Further Recommendations on Risk Management

In response to the demand from member firms, the SCI, through its Working Group, elaborate, refined, and provided specific details to the CMBP Recommendations in the area of risk management. The “new” and “revised” recommendations listed below should be seen in that light.

**RISK APPETITE**

**Revised Recommendation I.9:** The Board should review and periodically affirm, based on updates to risk metrics and similar guidance and information, the firm’s risk appetite as proposed by senior management at least once a year. In so doing, the Board should assure itself that management has comprehensively considered the firm’s risks and has applied appropriate processes and resources to manage those risks.

**Revised Recommendation I.11:** A firm’s risk appetite will contain both qualitative and quantitative elements. Its quantitative elements should be precisely identified, including methodologies, assumptions, and other critically important information required to understand risk appetite. Clearly defined qualitative elements should help the Board and senior management assess the firm’s current risk level relative to risk appetite as adopted. Further, by expressing various elements of the risk appetite quantitatively, the Board can assess whether the firm has performed in line with its stated risk appetite.

**Revised Recommendation I.13:** The firm’s risk appetite should be connected to its overall business strategy (including assessment of business opportunities), liquidity and funding plan, and capital plan. It should dynamically consider the firm’s current capital position, earnings plan, liquidity risks, and ability to handle the range of results that may occur in an uncertain economic environment. It is fundamental, therefore, that the risk appetite be grounded in the firm’s financials and liquidity profile. The appropriateness of the risk appetite should be monitored and evaluated by the firm on an ongoing basis.

**RISK CULTURE**

**New Recommendation A:** Risk culture can be defined as the norms and traditions of behavior of individuals and of groups within an organization that determine the way in which they identify, understand, discuss, and act on the risks the organization confronts and the risks it takes.
**New Recommendation B:** Management should take an active interest in the quality of the firm’s risk culture. Risk culture should be actively tested and objectively challenged in a spirit of fostering greater resilience and encouraging continuous improvement, reflecting the strategic aims of the organization.

**New Recommendation C:** Firms should ensure that relevant personnel have their formal responsibilities for risk clearly elaborated in their job descriptions and are evaluated for their fulfillment of these responsibilities as part of firms’ periodic performance review.

**New Recommendation D:** Any material merger or acquisition should be the occasion of a serious analysis of the risk culture in the new organization; the opportunity to take action to correct problems and foster a positive risk culture should not be overlooked.

**RISK MODELS**

**New Recommendation E:** No risk model should be used in isolation. Different models used in risk management draw out different perspectives on “risks.” A holistic perspective on an organization’s risk profile is best achieved through the use of several models and multiple measures of risk, each drawing out different aspects of the institution’s risk profile in a given area.

**New Recommendation F:** All model assumptions should be explicitly documented, understood in terms of their materiality and implications, and subjected to an appropriate review and approval regime. Documentation and analysis also should include assumptions around the use of proxies (e.g., as data sets) in models. All assumptions should be periodically reassessed, as assumptions deemed immaterial in one market environment may evolve into critical assumptions in a different market environment (e.g., where a crowded market has evolved).

**New Recommendation G:** The degree of complexity chosen when developing an internal model should be subject to an open dialogue with senior management, supported, whenever necessary, by regular evaluations conducted by independent subject matter experts (i.e., internal or external resources not involved in the design or build of the model).

**New Recommendation H:** Liquidity should be considered in all areas where models are used. Liquidity is not only relevant to asset and liability management processes; it can also be an important risk dimension hidden within model assumptions. Institutions should take time to understand to what extent models make inherent presumptions about liquidity, draw out such assumptions to make them explicit, and subject such assumptions to an appropriate review and approval regime.

**New Recommendation I:** Senior management should understand how key models work, what assumptions have been made and the acceptability of these assumptions, the decisions around the degree of complexity chosen during model development, the adequacy of operational support behind the models, and the extent and frequency of independent review of the models. They should ensure that appropriate investments have been made in systems and qualified staff.
New Recommendation J: Senior management should ensure that the models are effectively used by management, the risk department, and key staff as “tools” for managing risk, not allowing models to substitute for the “thinking” processes required of managers. Robust and regular dialogue on the risks as seen by managers versus model outputs should be occurring, and any evidence of “tick-box” dynamics should be treated as a cultural red flag.

RISK MANAGEMENT ACROSS ECONOMIC CYCLES

New Recommendation K: Institutions should continually assess their risk appetite and business activities—particularly during boom times—to ensure that they remain in line with strategic objectives and are appropriate for the current business and competitive environment. When considering their potential actions and responses to economic and market developments, both business management and risk management officers should take into account, insofar as possible, likely macrofinancial developments in the overall market environment.

New Recommendation L: Firms should examine potential exposure to cyclicality in their business models, policies, and measurement tools. This should cover all relevant risk types of the firm and include an assessment of the:

- Extent to which risk measures tend to be “point-in-time” vs. “through-the-cycle”;
- Reliance on the liquidation of positions as a response to increasing risk;
- Reliance on cyclically sensitive factors (e.g., interest rates) in the firm’s business model;
- Degree of maturity transformation in firms’ and customers’ portfolios; and
- Vulnerability to a more extreme downturn than has been observed in recent history.

New Recommendation M: Institutions should align their risk measures with their intended strategic and business objectives, balancing the need for point-in-time risk-sensitive measures for day-to-day risk management with longer-term strategic objectives for stable capital requirements. Firms should ensure that these choices are clearly communicated to all involved and that models and methodologies are consistently applied and appropriate for their use.

Banks should make conscious choices about design of risk measurement tools, deciding whether these should be relatively more sensitive to and reflective of current conditions or be more stable across the economic cycle—and thoroughly understand the consequences and vulnerabilities associated with their choice of methodologies in each case. In particular, firms should ensure that credit risk measures are sufficiently sensitive to enable the rapid detection of deteriorating counterparties for day-to-day risk management purposes while avoiding excessive reliance on PIT measures for forward-looking risk and capital assessments.
New Recommendation N: Firms should have available a set of potential measures for adjusting their actual capital structures in line with cyclical developments in capital requirements. This could include instruments such as contingent capital but should also consider the articulation and implementation of an active and flexible dividend policy and active management of share buyback programs and similar tools. A choice of tools should enable banks to balance the need to conserve capital with wider business and strategic objectives.

The capital plan should not rely excessively on assets sales or raising capital in the market as a response to adverse conditions. Along with share buybacks, contingency plans should include downside triggers, for example, when one would set aside short-term growth objectives or sales targets in incentive plans, or when one would tighten lending standards, as well as upside triggers, for example, when one would review practices to determine if lending standards were easing in response to competition or when one should review scenarios in stress testing.

New Recommendation O: In performing their forward-looking capital planning both for internal purposes and for Pillar 2 discussions with supervisors, firms should take into account a broad view of potential procyclicality on capital requirements and availability over appropriate medium-term horizons. Such focus on procyclical effects should incorporate the interaction of risk and accounting measures, regulatory requirements, and pending changes therein, and figure in the firm’s program of stress testing.

New Recommendation P: Financial institutions and their Boards of Directors and managements must exercise judgment over business, risk, and capital planning, and the related stress testing, over a planning cycle that includes future cyclical developments. Governance must consider whether the system functions appropriately though the entire cycle and ultimately should be the responsibility of the Board of Directors. It is essential that both risk and finance functions be included in the governance process to ensure that the interaction of risk and accounting with respect to balance sheet, P&L, and capital effects are properly understood and integrated in decision-making processes.
Box 3. Key Compensation Challenges Faced by Financial Institutions and Proposed Recommendations

KEY GOVERNANCE CHALLENGES:

- The degree of inconsistency across jurisdictions on implementation standards, benchmarks, and enforcement procedures, and remaining uncertainties or lack of clarity of detailed regulatory requirements in some jurisdictions;
- Increasing difficulty in finding capable directors willing to serve on compensation committees due to increased demands for expertise, as well as issues related to workload, director liability, potential adverse publicity, and the effects of “second-guessing” by regulators and shareholders; and
- Establishing the necessary reporting and advising responsibilities of the CRO and risk management with Board compensation committee and the effective collaboration of Board risk committee, compensation committee, and audit committee.

GOVERNANCE RECOMMENDATIONS:

New Recommendation Q: The governance changes already under way should be pursued as a matter of good business practice within the broad range of market practices designed to avert crises and restore confidence; critical changes should be prioritized and finalized without delay, notwithstanding the pace of domestic regulatory guidance.

New Recommendation R: As the bonus round approaches, individual firms and domestic industry bodies should consider ways to better explain the intricacies of the compensation debate to policymakers, shareholders, and the broader public, recognizing previous shortcomings, and highlighting the reforms already accomplished and under way, with special emphasis on adherence to regulatory standards already in effect.

KEY RISK ALIGNMENT CHALLENGES:

- Firms’ efforts to align with regulatory guidance could produce divergent outcomes as regulatory details on compensation policies have not crystalized in all jurisdictions, and past supervisory experience is no guide in the new environment.
- Competition with unregulated firms for talent and lack of regulatory action on this issue pose challenges to firms seeking to reform compensation practices while maintaining the ability to attract or keep top talent.
- Designing granular and effective risk-based compensation alternatives to compensation deferment raises difficult technical issues. These include the unavailability of reliable granular data, the lack of tested methodologies to adjust for more complex risks, and general skepticism regarding potentially overcomplicated metrics.
- Managing the financial impact of mandatory deferral increases, which, if unfunded, could have the effect of increasing earnings volatility.
**RISK ALIGNMENT RECOMMENDATION:**

*New Recommendation S:* Firms should ensure that compensation schemes incorporate major risk types and account for cost of capital and the time horizon of risks associated with future revenue streams. Teams incorporating business, risk management, finance, and human resources expertise should be engaged in the design of new compensation structures for use in the 2009 and subsequent compensation cycles.

**KEY PAYOUT STRUCTURE CHALLENGES:**

- First-mover disadvantages: There have been cases of firms adopting best practices to move away from a heavy emphasis on short-term results only to encounter difficulties in retaining and attracting talent. It is becoming increasingly challenging for firms to maintain a voluntary, principles-based approach to compensation in a highly competitive talent market. Harmonized regulatory initiatives are needed to protect “first-mover” firms that implement innovative and valuable compensation reforms and to discourage non-compliant behavior.
- Firms weakened by the crisis may be further disadvantaged if government curbs on pay are applicable to bailout firms only or, following the FSB Implementation Standards, are required, in cases of capital impairment, to shift more of their revenue to capital increases at the expense of remuneration that is needed to attract talent to help grow earning and rebound capital.
- Tax and accounting regulations are not always conducive to optimal deferral and clawback mechanisms.
- Firms also face challenges in communicating changes in compensation policies and must convince employees that new compensation approaches do not penalize them unfairly and will not become overly politicized within the firm. Effective risk alignment should help employees understand that their compensation does not depend on the realization of risks to which they did not contribute and over which they have little control.

**PAYOUT STRUCTURE RECOMMENDATIONS:**

*New Recommendation T:* Firms should move to adapt risk-alignment concepts such as deferrals and clawbacks to their own business models in light of prevailing regulatory and market environment.

*New Recommendation U:* We call on the FSB and national regulators to carry out a benchmarking exercise, especially with regards to deferrals and ratios of variable to fixed compensation that would guide the development of industry practices toward harmonized approaches across jurisdictions.
There is no “one-size-fits-all” approach to compensation; approaches must match a firm’s goals and unique agenda and also can provide opportunities to make full use of a firm’s competitive advantage. Banks with different starting points will have varying priorities regarding the improvement of metrics or governance. However, the following steps—based on survey inputs and interviews with market participants—can be taken to assess current compensation structures with the aim of stimulating strategic thinking and aiding discussion on possible system redesign.

I. Align performance metrics with the firm’s risk appetite and strategy.

A. Ensure completeness and accuracy of financial performance measurements.
   • Incorporate adjustments for risk/capital usage based on the risk measures most appropriate to the business in question, including regulatory capital and economic capital (reflecting VaR, stressed VaR, or other metrics).
   • Make use of performance assessment adjustments to measure true productivity (e.g., adjustments for indirect costs, “value of seat”/“franchise value,” value of infrastructure).

B. Encourage appropriate employee behaviors through alignment of compensation to strategy.
   • Adjust the allocation of bonus pools to reflect firm strategy (e.g., higher payout ratios in growth businesses).
   • Shape employee behavior through tools such as payout functions; increase compensation system transparency to enforce desirable behaviors.
   • Increase weighting of non-financial input and output criteria in the compensation process.

II. Align compensation payouts to the risk time horizon of the business.
   • Measure performance over a multi-year period where appropriate.
   • Defer compensation delivery in businesses that have a multi-year risk time horizon.
   • Pay compensation in units with value that is linked to the individual’s future performance (i.e., company stock may not always be the best currency), thus focusing deferrals on alignment with performance development over time rather than on retention.
   • Introduce forward-looking, long-term incentive plans for executives and key strategic roles based on performance achievements beyond total shareholder return metrics.
III. Enforce effective governance and oversight.

- Have board-level compensation committees oversee the compensation process with access to “compensation dashboards” of key performance and non-performance information to support the challenge of decisions.
- Have Boards ensure that senior risk management executives are involved in the compensation process as part of a broader strengthening of the Chief Risk Officer’s (CRO’s) mandate.
- Have senior business management involve itself further in the compensation process, and ensure that a system of checks and balances is in place.
- Establish clear rules of engagement on areas traditionally negotiated between division heads/management committee (e.g., for handling business cross-subsidies or to cover the event of narrowly caused losses).
APPENDIX VIII

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APPENDIX IX

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APPENDIX X

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