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Risk Management: Where to From Here?

Important Industry Lessons from the Financial Crisis

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"I THOUGHT WE WERE JUST BUYING A HOUSE!"

Some possible perspectives in the wake of the Financial Crisis …

- **"Risk models have failed"…**
- **"Basel II has failed"…**
- **"Risk Management has failed"…**

So… where to, from here???

Crisis has exposed massive failures in risk management …

As long as the music is playing, you've got to get up and dance. We're still dancing.

– Charles O. Prince, CEO, on the leveraged lending market
The Financial Times, July 9, 2007

*Firms made strategic decisions to retain large exposures… that **far exceeded the firms' understanding** of the risks.*

– Senior Supervisors Group Report, March 2008

*Lack of comprehensive approach… **key risks not identified.***

– Final Report, IIF Committee on Market Best Practices, July 2008

Discussion topics

Risk management lessons learned and key global industry recommendations

Key challenges for risk management

The risk management imperative today

Changes to bank capital and Basel II

Firms' conduct was based on multiple structural flaws in regulation, risk management, and incentives

Weaknesses in supervision, regulation, and accounting standards

- Known arbitrage opportunities in regulation (Basel I)
- Unforeseen impact of policies (fair-value accounting)
- "Laissez-faire" policy

Wrong incentives and behavior

- Conflicts of interest, moral hazard issues in financial institutions and credit rating agencies
- Weak risk culture
- Lack of diligence

Ineffective risk management practices

- Insufficient or ineffective methodology, capability, processes in financial institutions
- Shortcomings vs. "good practice" in financial institutions and credit rating agencies

Crisis had many important causes, including risk management failures, weak culture and poorly aligned incentives

SELECTION

Weaknesses in supervision, regulation and accounting standards

- Specific US issues
  - Poor underwriting standards in the US (in particular, by non-regulated institutions)
  - Inadequate supervisory structure
- Capital adequacy
  - Capital incentives in Basel I to shift risky assets off balance sheet
  - Capital requirements too low for trading risks and securitization
- "Laissez faire" policy
  - No catch-up of regulations with complex business
- Supervision
  - Insufficiently robust monitoring & understanding of banks' risk management practices & weaknesses
- Fair-value accounting
  - Pro-cyclical effects not fully understood/underestimated
  - Weaknesses in stress situations
- Interpretation of regulations
  - Aggressive interpretations, e.g.
    - 364-day liquidity lines
    - Consolidation of SPVs

Ineffective risk management practices

- Liquidity management
  - Insufficient liquidity management practices
  - Failed in stress situations
  - Inadequate contingency plans
- Risk measurement
  - "Domino effects" of risks underestimated
  - Lack of integrated view on risks
  - Insufficient data history
- Stress testing
  - Models failed credit cycle test
  - Scenarios not extreme enough
  - Not forward-looking
- Valuation
  - Insufficient internal valuation models
  - Passive reliance on external valuations
- Operational risk
  - Reputational risks underestimated
  - Weak operational controls
- Governance
  - Accountabilities not clearly defined
  - Banks' risk profiles not sufficiently understood by management & boards

Wrong incentives and behavior

- Credit Rating Agencies
  - Lack of transparency and accountability
  - Conflicts of interest
  - Lack of diligence
  - Weaknesses in methodologies
- Management oversight
  - Business not aligned with "risk appetite" & risk management competence
  - Insufficient timing and quality of information flow
  - Too much reliance on quantitative models
  - Risk concerns pushed aside
  - Lack of courage to act against market expectations
- Incentive structure
  - Bonus schemes with excessive short-term incentives encourage risk
  - "High greed culture", in particular, for originators
- Market expectations
  - Market expectations on profit beyond economic reality
- Early warning systems
  - Partially inadequate, largely failed management response
- Transparency
  - True risk of complex transactions not transparent
  - Excessive reliance on Credit Rating Agencies, insufficient own credit due diligence
  - Weak incentives for originator/investor to generate transparency/monitor

SOURCE: FSF, IIF, Senior Supervisors Group, U.S. Treasury, McKinsey analysis

Key lessons learned from risk management failures and successes are driving the global industry response

	Characteristics of firms that did not do well	Characteristics of firms that did well
Management oversight	• "Organizational silos" • (Aggressive) expansion of risk without clear guidance • Little capital market experience in senior management	• Rich dialogue among senior management, business lines, and control functions • Quick escalation process • Risk appetite and risk control well balanced • Senior managers with prior experience in capital markets
Liquidity management	• Treasury function lacked information across all businesses • Contingency plans based on incomplete information	• Close alignment between treasury function and risk management • Internal pricing mechanisms to incentivize building of liquidity exposure
Risk measurement and stress testing	• Limited number of specific risk measures, incorporating outdated or inflexible assumptions • Limited integrated view across businesses	• Multiple risk tools drawing on different underlying assumptions, which can be altered rapidly • Wide range of measures • Effective balance of quantitative and qualitative information
Valuation	• Lack of relevant internal valuation models for complex products • Heavy reliance on external valuations	• Rigorous internal processes to challenge valuations • Internal experience to conduct independent assessment • Consistent application of valuations across firm

1 This assessment is based on an analysis of 11 of the largest banks and securities firms

SOURCE: Senior Supervisors Group; Observations on Risk management Practices during the Recent Market Turbulence (March 6, 2008)

The IIF Committee on Market Best Practices has recommended 6 areas for industry action in its July 2008 final report

- The global industry response to the credit and liquidity crisis was formulated through the Committee on Market Best Practices (CMBP) of the Washington-based Institute of International Finance (IIF)
- The Committee (consisting of representatives from over 65 IIF member institutions, including rating agencies and investors) engaged 6 Working Groups to address key areas of focus
- Its July 2008 report contains Principles of Conduct and >100 specific recommendations in each of 6 main areas for industry action

Areas for industry action

- Risk Management
- Compensation Policies
- Liquidity Risk, Conduits and Securitization
- Valuation
- Credit Underwriting, Ratings and Investor Due Diligence in Securitization Markets
- Transparency and Disclosure

Next steps are **industry follow-up and implementation**

SOURCE: IIF Committee on Market Best Practices

Risk Management – Key Recommendations

Risk culture and accountability	Develop a robust risk culture - incorporated in the way the firm operates - covering all areas and activities. Accountability for risk management should be a priority for the whole institution
Role of the Board	Senior management, particularly the CEO, is responsible for risk management; the Board has an essential oversight role
Role of the CRO	Ensure that the Chief Risk Officer (CRO) can influence key decision makers within the firm, with the mandate to ascertain that the firms's overall risk level is consistent with its risk appetite & to provide a thoughtful, integrated view of overall risks; support senior management by identifying emerging risks & concentrations
Comprehensive perspective	Define and articulate risk appetite and ensure its adoption throughout the firm; ensure consistency between risk appetite and strategy; take an integrated approach to capturing all sources of risk (notably off-balance sheet exposures); take into account technical limitations of risk models, such as Value at Risk (VaR)
Official sector considerations	The Basel II framework for securitization should be improved, allowing options for firms to use external ratings in conjunction with internal models; greater collaboration between the official and private sectors is needed in the area of stress testing, promoting practices under a Pillar 2 approach suitable to the specifics of each firm

Compensation – Key Recommendations

Shareholders' interests	Incentives should be aligned with long-term, firm-wide profitability
Risk-adjusted compensation	Incentives should not induce risk-taking in excess of the firm's risk appetite; firms should base compensation on risk-adjusted performance
Severance pay	This should take into account realized performance for shareholders over time, and consider the circumstances of severance
Transparency	The industry must show leadership in developing a better, more transparent approach to compensation practices

Liquidity – Key Recommendations

IIF March 2007 liquidity report	Recommendations of the IIF's 2007 Principles of Liquidity Risk Management have been validated by recent experience and updated in the Final Report; firms should complete their implementation
Funding and stress testing	Firms should diversify their funding sources for asset portfolios held for liquidity purposes; firms should ensure that stress testing includes contingent liquidity exposures
Contingency planning	Firms that rely on market funding, particularly asset securitization or conduits, should conduct rigorous contingency planning for market liquidity risks
Official sector considerations	Central banks have made an essential contribution to market liquidity – new tools should be kept available for use when needed. Greater clarity of central banks' roles in firm-specific and market-related crises would also be welcome. For firm liquidity, standards should be better harmonized and based on qualitative rather than specific quantitative requirements. Supervisory dialogue and review of off-balance sheet issues under Pillar 2 is preferable to revision of regulatory capital rules

Valuation – Key Recommendations

Fair-value accounting	Essential for global capital markets, fosters transparency, discipline and accountability. However, mark-to-market valuation is challenging in illiquid markets
Valuation in liquid markets	Comprehensive technical dialogue should address the problems of assigning appropriate values in dislocated or illiquid markets
Convergence	Aligning U.S. GAAP and International Accounting Standards is more critical than ever and should be accelerated
Official Sector Considerations	• Dialogue needed – A high-level dialogue of all relevant parties with both standard setters should consider the effects of mark-to-market techniques during times of excess liquidity as well as illiquid markets, and the apparent pro-cyclical effects with macroeconomic implications that concern many in the private and official sector • Standard setters should provide additional guidance on valuation in inactive, illiquid and/or stressed market conditions

Credit underwriting, Ratings, and Investor Due Diligence – Key Recommendations

Broad scope	Recommendations cover the process from origination and underwriting through to ultimate investors. Firms should subject assets they help originate and distribute to the same credit due diligence standards as used for similar assets that are to be carried on their own balance sheets
External review	Establish an external review of rating agencies' internal processes for monitoring and validation of models against defined industry standards
Separate rating scale	Rating agencies should introduce a differentiated rating scale for structured products
Official sector considerations	• Underwriting – Non-bank mortgage originators should be held to the same standards as banks on consumer protection and loan origination • Authorities should consider external review of internal processes within Credit Rating Agencies

Transparency and Disclosure – Key Recommendations

More accessible and useful information	Better disclosure on products is required to restore market confidence, as is more transparency about firms themselves
Structured products	Recommendations here include • A short-form summary of the offer document • Global harmonization of market definitions & structures • Common platforms (such as data portals) for improved access to information on structured products
Firms' risk profiles	Institutions should ensure that their disclosure provides a sufficient overview of their current risk profiles – including securitization activities and off-balance sheet exposures
Official sector considerations	Regulators should support the private sector's efforts to improve transparency, with particular reference to harmonization of disclosure requirements among different jurisdictions. The official sector should work closely with industry and market participants to improve market understanding of Pillar 3 disclosure content. Disclosure requirements should be based on a risk- and principles-based approach to qualitative as well as quantitative information

Discussion topics

- Risk management lessons learned and key global industry recommendations
- **Key challenges for risk management**
- The risk management imperative today
- Changes to bank capital and Basel II

Key challenges for risk management

- These include
  - ***Seeing*** how the external environment is changing & perceiving the drivers of these changes (e.g., US house price declines, diminishing market liquidity)
  - ***Understanding*** the current and potential impacts of these changes across all businesses, portfolios and geographies
  - ***Acting*** quickly to reduce risk when necessary

- All 3 of these tasks are challenging in practice!

- In particular, the ***aggregate, integrated risk profile of the firm & the way this is changing is*** fundamentally opaque, to insiders as well as to outsiders, and very ***challenging for firms to properly understand***

- ***Essential for market confidence to increase transparency of risk profiles of financial institutions***, not just structured products

- *But:* ***statistical tables have only limited utility*** - note the very important differences between statistical disclosures to the market ***vs. internal risk reports***, which contain an integrated view of risks and descriptive analysis of what is new, changing or growing rapidly, etc…

Establishing a robust "Risk Culture" is of paramount importance in ensuring effective risk management – ability to see, understand and act

- In the view of many, ***culture is the single most important determinant*** of risk management effectiveness
- Important to understand the sheer ***impossibility of knowing everything that you need to know*** about emerging risks & rapid changes to the risk profile of the firm ***through formal channels*** (committees, risk reports etc …)
- Therefore, ***effective "informal" channels*** for information ***are essential***
- In particular, to balance risk & return at every level, firms should
  - Deliberately ***create an environment that encourages and values dialogue about risk***
  - ***Make it safe for employees to question/challenge/escalate*** things that they don't understand, and then ***reward*** this behavior …
  - ➔ This is absolutely essential in order to ***ensure that 'bad news travels'*** upwards quickly, but extremely difficult to do!
  - Risk culture is the responsibility of the Board & CEO – ***CEO must lead by example, continually emphasising the importance of properly understanding risks*** and seeking to objectively balance risk & return …

Some common impediments to effective risk management

- **(I) *Limiting the resourcing and influence of the Risk Management function*** - role contained to measurement, "risk controlling"/reporting – often little involvement in high-level operational & strategic business decisions

Examples:

  - **Formulation of business plans and performance targets** – typically little or no assessment in advance of the impact on risk levels of specific targets, business plans and asset-writing strategies
  - **Risk assessments of strategic initiatives** are frequently either omitted or a "token gesture", performed by strategy analysts rather than by risk professionals

- ***(II) Lack of willingness to really tightly define "risk appetite" in advance*** – this is sometimes seen as overly constraining to the businesses; this in turn leads to unclear boundaries regarding which risks & transactions are acceptable, and resulting disputes between Risk/Credit & BU personnel

- ***(III) Risk Managers concerns often pushed aside****:* elsewhere major firm Chief Risk Officers have in some instances resigned – or threatened to do so - because they didn't feel that their concerns were being heard, or given sufficient weight in discussions (cultural issue)

Must also consider role of incentives & personal risk management

- It is clear that many institutions – especially outside Asia – have taken excessive risks, and struggled to objectively balance risk and return
- Widely acknowledged that compensation and incentives have played an important role in this imbalance – these can “tilt the playing field”, i.e. undermine the ability of participants to objectively balance risk and return
- Also, business managers have in many instances until now been too willing to quickly dismiss low-probability events:
  - In effect, they "cross their fingers" and bet that these 1% (or 0.1%) events will not occur on their watch (often assuming a 3-5 year horizon)
  - This is a key problem with stress-testing, and one reason why so often no action is taken in response to large stress-test results
  - this is also one reason why concerns of risk managers are often pushed aside
- Appropriately designed incentive compensation schemes & a robust “risk culture”, led by the CEO, are critical to successfully address these issues

Discussion topics

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- Key challenges for risk management
- **The risk management imperative today**
- Changes to bank capital and Basel II

Creation of a robust, integrated risk management framework is now imperative for survival and sustainable performance & growth

Integrated risk-return management

1 Insight and risk transparency

Are risks that affect future performance transparent? Do you have insight into risks that matter most?

2 Natural ownership, risk appetite, and strategy

Which risks are you advantaged to own? Which should you transfer or mitigate? Is your risk capacity aligned with your strategy?

3 Risk-related decisions and managerial processes

Are critical business decisions made with a clear view of how they change your company's risk profile?

4 Risk organization and gover-nance

Are structures, systems, controls, and infrastructure in place for you to manage risk and comply with regulatory requirements? Is your governance model robust?

5 "Risk culture" and perfor-mance trans-formation

Does your culture reinforce risk management principles? What formal and informal mechanisms support the right mindsets and behaviors?

Banks need to first "fix the fundamentals" of risk management …

1	Transparency	• **Ensure full transparency into important risks and develop integrated view of risks across all businesses** (e.g., redesign risk reporting, stress test for often substantial tail-risk, focus on what is changing, new or growing rapidly, descriptive analysis to drive mgmt action) • **Benchmark against relevant IIF Market Best Practices recommendations**
2	Ownership	• **Assess and adjust portfolio to reflect current realities** (e.g., redirect strategy away from businesses consuming scarce capital and liquidity or with inadequate risk management capabilities, reduce waste in capital & funding)
3	Processes	• **Enhance capabilities in end-to-end credit risk management** (e.g., strengthen collections, workout strategies and execution) • **Leverage Basel II investments to capture value** • **Respond rapidly to regulatory changes**
4	Governance	• **Fix risk organization gaps and empower risk management** (e.g., resolve CRO/CFO conflicts, proper separation of duties, Risk independence) • **Ensure appropriate risk accountability** (e.g., reinforce BU-ownership and responsibility as "first line of defense")
5	Culture	• **Increase risk awareness across the bank & strengthen risk culture** (e.g., strive to consciously balance risk & return at every level through questioning & open dialogue, foster culture of vigilance in front-, mid-, and back-offices, launch education & cultural change programs)

… and then go beyond fundamentals to increase resilience

1 Transparency

- **Improve understanding and foresight on structural, systemic and emerging risks**
- **Make unstated assumptions explicit** (e.g., home price appreciation)

2 Ownership

- **Complexity: if you don't understand it, don't own it!**
- **Don't grow more than your risk appetite & capabilities allow**
- **Maintain perspective through-the-cycle** (e.g., "lean against the wind")

3 Processes

- **Embed risk in strategic planning and budgeting** (e.g., understand and accept risk implications of operating plans and growth targets)

4 Governance

- **Empower CRO and risk organization to partner with business** (alignment of control functions/CFO/CRO, right mindset, skills, profile)
- **Make Board and management risk oversight effective** (e.g., ensure Board has risk skills/experience, avoid socialized accountability for risks)

5 Culture

- **Make importance of strong risk culture explicit** (e.g., ensure "bad news travels", codify principles & include culture in performance assessment)
- **Align risk-based incentives** (e.g., compensation based on risk-adjusted performance, deferred payouts and claw-backs)

3 immediate CEO priorities

Survive

- Ensure sufficient capital and liquidity – key to survival
- Review & reduce portfolio risks as needed
- Improve transparency of risk profile

Enhance risk mgmt capabilities

- Make steady progress on "Fixing the Fundamentals" of Risk Mgmt then "Go Beyond" to fix weaknesses & increase resiliency

Seize opportunity

- Look for opportunities to:
  - Realign/optimize business model under new regulatory capital regime
  - Buy attractively-valued assets
  - Cherry-pick talent

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- **Changes to bank capital and Basel II**

Due to the crisis, a substantial number of new recommendations and policy revisions addressing bank capitalization are underway

Main guidelines (shaded)

Policy maker	Publication	Date	
"G20"	Declaration on strengthening the financial system and regulation (G20 countries) (main guideline)	Apr 2009	Global coordination and direction setting
Financial Stability Forum (FSF)	Report of the Financial Stability Forum on Addressing Procyclicality in the Financial System (main guideline)	Apr 2009	
	Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience – follow-up on implementation	Oct 2008	
	Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience (endorsed by G7) (main guideline)	Apr 2008	
Basel Committee (BIS)	Proposal for revisions to market risk/general Basel II framework (Basel committee on banking supervision)	Jan 2009	Regulatory guidelines
	Principles for sound liquidity risk management and supervision (Basel committee on banking supervision)	Sep 2008	
	Guidelines for computing capital for incremental risk in the trading book (Basel committee on banking supervision)	July 2008	
Other supervisory reports	Recommendations/summary of required changes to banking regulation (FSA, "Turner Review")	Mar 2009	Local (European) direction setting
	De Larosière report on financial supervision	Feb 2009	
Private sector	Report of the IIF on Market Best Practices	July 2008	Industry view
	Group of 30 Report on Financial Stability	Jan 2009	

SOURCE: McKinsey

Emerging directions of regulatory change were recently spelled out by the Financial Stability Forum

Financial Stability Forum, April 2009

"… Strengthen the regulatory capital framework so that the quality and level of capital in the banking system increase …"

"… Revise the market risk framework of Basel II to reduce the reliance on cyclical VaR-based capital estimates …"

"… Supplement the risk-based capital requirement with a simple, non-risk based measure to help contain the build-up of leverage …"

"… Use the BCBS enhanced stress testing practices as a critical part of the Pillar 2 supervisory review process …"

"… Make appropriate adjustments to dampen excessive cyclicality of the minimum capital requirements …"

SOURCE: Financial Stability Forum

Recommended changes to framework of bank capital requirements are fundamental and will mostly be developed by 2010

	Key changes	Proposal/ final report	In effect[3]
Capital ratio	1 Introduction of a simple, non-risk-based leverage measure to build a "floor" under the Basel II framework	Dec 2009	Tbd
	2 Mitigation of procyclicality effects: procyclicality in model estimation to be avoided, counter-cyclical capital buffers to be introduced	Dec 2009[1]	Mar 2009[1]
RWAs	3 Significant changes to trading book RWA calculation, in particular fundamental changes to VaR methodology to measure market risk & inclusion of new charge for credit "downgrade" risk 4 Fundamental review of securitization framework	2009	Dec 2009/ 2010
Capital composition	5 Stricter regulation of composition of capital; focus on tier 1 and core tier 1 capital; limitations to hybrid structures	Oct 2009/10[2]	Tbd

Anticipation of new regime by the market expected

1 Mar 2009 – model adjustments; Dec 2009 – capital buffers
2 Oct 2009 – proposal; 2010 – review of capital minimum
3 However, G20 and regulators have committed not to impose new capital standards "until recovery is assured"

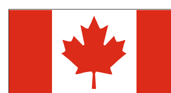
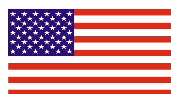
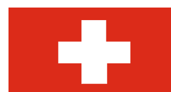
SOURCE: Financial Stability Forum

1

There is very broad support for a "leverage ratio" as a simple, non-risk-based measure to complement Basel II

- Significant increase in leverage from 2003-08, not reflected by RWAs
- Therefore, leverage ratio as additional metric to be introduced
  - **Transparent**, simple to implement
  - **Robust** against high volatility
  - **Limits leverage** during periods of growth
- Broadly supported, e.g., G20, FSF and UK (Turner)

Maximum leverage ratio already introduced in 3 countries

Country	Definition
	• Assets to capital ≤20 :1
	• Tier 1 to total assets: – ≥3% for "strong" banks and – ≥4% for other banks
	• Core capital to total assets ≥3% • Valid for Credit Suisse and UBS[1]

UK FSA argues to reach international agreement on maximum leverage ratio

1 To be reached by 2013

SOURCE: Financial Stability Forum; G20; Financial Services Authority ("Turner Review"); McKinsey

2

Mitigation of procyclicality effects – pro-cyclicality in model estimation to be avoided, countercyclical capital buffers to be introduced

"Through the cycle" estimation

Avoid procyclicality in model estimation by using "through the cycle" rather than "point in time" estimates

Already introduced

Capital buffers

Remaining procyclicality to be counterbalanced by capital buffers, which increase in booms and decrease in recessions

Expected end of 2009

Mitigate procyclicality – stabilize financial system

- Reduce extent to which lending capacity is impaired in economic downturn
- Decrease probability of default of single banks/systemwide failures
- Reduce extent to which bank behavior increases the amplitude of economic cycle

SOURCE: UK Financial Services Authority ("Turner Review")

3 Proposed revisions to market risk framework

BASED ON BIS PROPOSALS FROM JANUARY 2009 – CHANGES POSSIBLE

INDICATIVE TOP-DOWN ESTIMATES

	Proposed changes	RWA impact[1]
Internal model	• Introduction of "stress VaR" in addition to existing VaR • Introduction of additional "Incremental Risk Charge" to capture "downgrade risk" for specific credit-risky positions	+300-1,000%[2]
	• Inclusion of all risk factors in internal model, monthly update of data set, scaling-up calculation of holding period to be justified	TBD
Standard method	• Copying charges for securitizations from banking to trading book to avoid arbitrages	TBD
	• Discontinuation of preferential treatment for specific equity positions	+100%
Illiquid positions	• Requirement of established process/adjustments to valuation of less liquid positions • Mark-to-model (if used) must be demonstrated to be prudent	TBD

Proposed introduction: end of 2009[3]

1 Impact for concerned positions, rough estimate
2 Bundesverband öffentlicher Banken Deutschlands, March 2009 + industry discussions
3 However, G20 and regulators have committed not to impose new capital standards "until recovery is assured"

SOURCE: BIS

4 Proposed general enhancements to securitization framework

BASED ON BIS PROPOSAL FROM JANUARY 2009 – CHANGES POSSIBLE

INDICATIVE TOP-DOWN ESTIMATES

	Proposed changes	RWA impact[1]
Resecuritization	• Higher risk weights for resecuritization exposures (i.e., CDOs, ABS)	Up to +200%
Liquidity facilities	• Increase of RWAs for short-term eligible liquidity facilities (e.g., conduits) • Elimination of favorably treated liquidity lines that are only available in the event of a general market disruption	Up to +150%
Self-guarantee ratings	• Banks are not allowed to recognize external ratings that are based on support provided by the same bank (e.g., based on guarantee of bank)	TBD
Operational requirements	• Operational requirements for banks to be met (otherwise capital deduction), i.e., understanding of risk character-istics, performance information on underlying pools	If not met, up to +600%

Proposed introduction: end of 2009[2]

1 Impact for concerned positions, rough estimate
2 However, G20 and regulators have committed not to impose new (higher) capital standards "until recovery is assured"

SOURCE: BIS

3/4

Summary: banks with high share of financial assets and/or large proprietary trading activities face a significant RWA increase

Estimated impact of specific measures

Loans	• Indirect impact by stricter regulation and higher requirements for capital ratios • "Through the cycle" view on parameter estimation	• In addition, increase via Basel II, Pillar 2 expected (economic capital, stress testing)
Financial assets in banking book	• RWAs for resecuritization expected to increase by up to 200%	
Trading book	• Trading book RWAs to increase by large multiple (e.g., Turner suggests "at least 3 times") – Market risk RWAs to increase by 3-10 times[1] – RWAs for resecuritization expected to increase by up to 200%	
Off-balance sheet	• RWAs for liquidity facilities expected to increase by up to 150%	

1 Includes proposed "Incremental Risk Charge" – expected total RWA increase depends upon level of portfolio exposure to credit-risky assets

SOURCE: McKinsey

What should banks do now to respond to these substantial proposed changes to the regulatory capital framework?

1. Identify no-regret actions that can be taken immediately
2. Perform comprehensive stress testing to assess the resilience of businesses against macro scenarios, expected capital requirements, further adverse regulatory developments, and revenue shrinkage
3. Develop a prioritized list of actions to rebuild capital base

Adjust strategy

- Define target leverage ratio and capitalization
- Determine future portfolio of businesses and geographies
- Focus on (market risk) businesses with attractive returns after considering new, substantially higher capital requirements
- Assess combination of retained earnings and capital measures

Optimize capital

- Improve technical RWA calculation, i.e.,
  - Credit risk: methods, processes, data quality, collateral management
  - Market risk: risks and applied models
  - "Hunt" for RWA savings
- Adjust business strategy/ business processes, e.g.,
  - Capital light businesses
  - Collateralization/use of covenants

Adapt to new regulations

- Follow the regulatory debate on an ongoing basis
- Adjust market risk models
- Adjust to operational requirements

SOURCE: McKinsey

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Appendix I – use of internal capital models in risk management

The key question re: internal capital models

Have the models failed - or just they way that we use and rely on them in the risk management, capital adequacy and valuation processes?

Some key questions to ask about internal capital models …

What are they used for?

Examples:

- ✓Internal capital allocation and performance assessment?
- ✓Measurement of relative risks between business activities?
- ✓Setting and managing risk limits (eg for credit and market risks)?
- ✓Risk-adjusted pricing?
- ✓RoE assessments and optimisation of Risk Adjusted Return on Capital (RARoC)?
- ✓Performance Measurement and Compensation?
- ✓Determining overall capital adequacy?

- How well do they work for these purposes?
- To what extent are the outputs of the models embedded & used in business decision-making?
- How are history and historical relationships embedded in the design of the models?

Internal capital models are here to stay …

Capital models were originally created for important business purposes, and won't go away …

- Therefore, users (and supervisors) must understand very well the weaknesses and limitations of the these models:
  - exactly what is measured, and what is not
  - exactly what the models can and cannot be relied upon for
  - when they work (i.e., under what conditions) & when they don't
- *Note*: there will always be important risks that the models don't capture, e.g., reputation risk!

Example – the actions taken by the largest banks with respect to Structured Investment Vehicles (SIVs): the substantial losses which resulted were not captured in the models because these actions had no precedent in history

… But, excessive reliance on models is dangerous!!!

Misunderstanding VaR can lead to a false sense of comfort, or actively mislead…

Uses of VaR:

- Used by senior management as a high-level indicator of relative changes in risk levels
- Is used to aggregate risks across varying activities, e.g., foreign exchange and interest rate trading activities
- Generally a benchmark of how risky a trading book is relative to other trading books
- Used as the basis for market risk economic and regulatory capital calculations

The limitations of VaR are very important to understand

Weaknesses of VaR:

- Structural dependence upon history, and historical correlations: if tomorrow is not like the past, then calculated VaR will be misleading
  - **"Event Risk" is not covered** (historical correlations break down)
- VaR presumes market liquidity, irrespective of position size
- VaR is typically a 2 or 3 standard deviation measure, depending upon the confidence level
  - **VaR is not "Worst Case" – actual losses can be many multiples of the VaR estimate for certain portfolios**
- VaR is usually not accessible to the business line on a timely basis
  - **Usually not used by the business to actively manage risk**
- Lack of direct, prescriptive information in VaR: if VaR is too big for a particular trading book, what to do?
- Risks usually not captured by VaR include
  - Non-Linear risk in options books
  - Risk of intra-day trading (e.g., FX spot)
  - Underwriting risk

It is essential to avoid "false precision" in modeling …

- Capital itself is a mathematical abstraction, it is just one point on an hypothetical curve of potential future loss distributions ...

- It is essential to understand that we cannot know the "true" shape of this curve!

Example: for a credit portfolio, the shape of this curve depends upon the assumptions about correlations between assets and asset classes within the portfolio ... However, we cannot know these correlations objectively - how confident can we be about their estimates, and what are the implications for the resulting capital estimates???

Example: PD & LGD estimates from rating tools underpin the calculation of economic capital for unexpected loss in credit portfolios

Probability of loss

99.xx% Confidence level

Expected loss

Unexpected loss

Stress loss

A

B

Amount of loss

Understanding model sensitivity is paramount for banks and supervisors …

- Given all of these limitations, the key requirement is for model users to understand the sensitivity of model outcomes to various input assumptions

Example:

  - How does the capital amount change if you change the assumptions about correlation?
  - What does it look like under a wide range of assumptions?

- Supervisors must both understand these sensitivities, and also look to see whether the institutions understand these themselves

Some possible future directions for internal capital models …

- Heightened sensitivity by industry and supervisors to embedded historical assumptions
- Reduced dependence by certain regulatory bodies and supervisors upon enforcing "one way" of modelling certain risks – increased diversity of risk and capital measures will be encouraged by regulators
- Increased emphasis on the way in which the models are actually used and embedded in business processes
- Increased capital charges for certain business lines, to reflect higher losses and perceived risks which have manifested recently
- Potential for increased conservatism with respect to capital adequacy to reflect new uncertainties and ensure increased financial stability
- Other???

Backup

Lord Turner's key changes to capital, accounting, and liquidity (UK FSA)

Recommendation	Detail	Impact
Increase the quantity and quality of overall bank capital	• Focus on tier 1 and core tier 1 capital for systemically important banks • Regulatory minima significantly increased from current Basel II regime	• Future banking system better able to absorb shocks • Will tend to mean lower return on equity but lower risk for banking industry
Major changes to trading book capital	• Major (e.g., more than 3 times) increases in capital required against key types of trading risk • Fundamental review of market risk capital regime (e.g., reliance on VaR measures)	• Significant reduction in scale of proprietary risk taking – drive risk out of major banks • Will drive simplification and derisking of securitized credit model
Avoid procyclicality in Basel II implementation	• FSA action already in hand to enable "through the cycle" rather than "point in time" estimates of credit risk	• Will reduce the extent to which lending capacity is impaired in economic downturn
Create countercyclical capital buffers	• Capital levels to increase in booms and decrease in recessions • Variety of options – discretionary versus formula: in calculated capital or in reserve	• Dangers of banking system instability greatly reduced • Amplitude of economy cycles reduced
Offset procyclicality in published accounts	• Countercyclical buffers to be defined in published accounts "Economic Cycle Reserve"	• Remuneration and management behavior less influenced by irrational exuberance
Introduce a gross leverage ratio backstop	• Absolute limit on gross assets to some category of capital (e.g., core tier 1)	• Guards against underestimation of risks • Limits systemwide financial instability risks by limiting aggregate positions
Major intensification of liquidity regulation and supervision	• Action already outlined in Consultation paper (08/22) – Much more detailed information requirements on liquidity mismatches – Stress tests defined by regulators and covering systemic effects – Detailed mandatory individual liquidity guidance • Possible introduction of code funding ratio rule	• Reduced reliance on risky forms of "liquidity through marketability" and risky levels of wholesale funding • Reduced risks of liquidity strain driving financial instability • Will tend to constrain aggregate system maturity transformation and marginally change term structure of interest rates

SOURCE: UK Financial Services Authority ("Turner Review") March 2009

Would you buy a T-shirt that said, â€œRisk Happensâ€? If you answered yes, then youâ€™re thinking like a project manager. Risk is part of your planning makeup. When you start the planning process for a project, one of the first things you think about is: what can go wrong? It sounds negative, but itâ€™s not. Itâ€™s preventative. Because issues will inevitably come up, and you need a mitigation strategy in place to know how to manage risks on your project. But how do you work towards resolving the unknown? Itâ€™s sounds like a philosophical paradox, but itâ€™s not. Itâ€™s very practical. There are many ways y Risk Culture: Where to from here? pwc.com.au. Thank you.Â The challenge of building a corporate culture that prioritises risk management, ethical behaviour and smart decision-making continues to weigh on financial services organisations. Culture and conduct have never been more important in the financial services sector: board and executive accountability for defining and driving risk culture and good conduct is at the forefront of market attention, with new risk management and governance prudential standards from APRA, and increasing ASIC monitoring and enforcement of regulations designed to protect investor and consumer interests. Vendor management gets a lot of attention these days, but have you considered the risk associated with your vendors? We'll show you where to start.Â 3 Here is a checklist of items to consider related to Vendor Risk Management: 4 Some challenges that may arise: Definition of a critical vendor: Any vendor/supplier whose missed commitments might cause the organization to be unable to achieve a stakeholderâ€™s mission. Any vendor/supplier crucial to recovering from a crisis event. Key vendors may not be critical for day-to-day operations, but their criticality may increase during crisis events. Letâ€™s look at the why of Vendor Risk Management: You have vendors that your organization relies on to function.