



CREDIT SUISSE

Capital and Balance Sheet Management

Tobias Guldemann, Chief Risk Officer

4 November 2010

Strong funding structure

Asset and liabilities by category (end 3Q10 in CHF bn)

1,067		1,067	
Reverse repo	222	Repo	243
Encumbered trading assets	99	Short positions	78
Funding-neutral assets <sup>1)</sup>	152	Funding-neutral liabilities <sup>1)</sup>	152
Cash	91	Other	161
Other liquid assets	61	Long-term debt	179
Other illiquid assets	161	Total equity	45
<b>Assets</b>	<b>1,067</b>	<b>Equity &amp; liabilities</b>	<b>1,067</b>

Match funded (Reverse repo 222, Encumbered trading assets 99, Funding-neutral assets 152, Repo 243, Short positions 78, Funding-neutral liabilities 152)  
 594↑ (Total Assets - Match funded)  
 125% coverage (Total Assets / Total Equity)

- Strong balance sheet structure and liquidity maintained; well-positioned to succeed in changing regulatory environment
- 44% of balance sheet is match funded
- Stable and low cost deposit base as key funding advantage
- Regulatory leverage ratio at 4.3%
- 17% of balance sheet financed by long-term debt (vs. 12% at end 2006)
- Further lengthened long-term debt profile to 6.6 years duration (vs. 4.9 at end 2006)<sup>5)</sup>

1) Primarily brokerage receivables/payables, positive/negative replacement values and cash collateral  
 2) Includes due from/to banks  
 3) Primarily includes excess of funding neutral liabilities (brokerage payables) over corresponding assets  
 4) Primarily includes unencumbered trading assets, investment securities and excess reverse repo agreements, after haircuts  
 5) Weighted average, assuming that callable securities are redeemed at final maturity, latest in 2030

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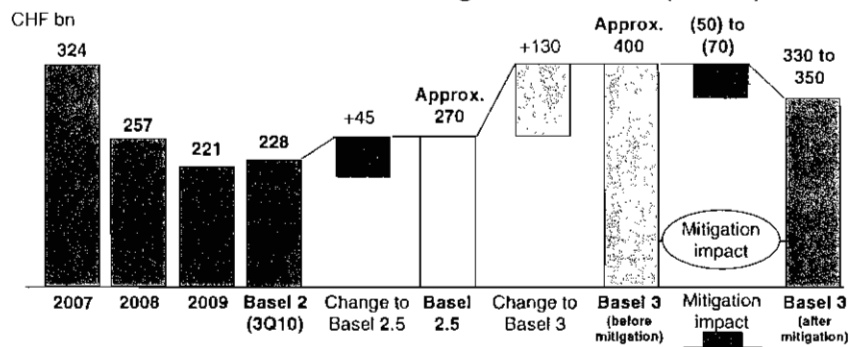
November 4, 2010 Slide 2



### Basel III: Leverage ratio

- Difficult to integrate in the balance sheet management process
  - Only managed as limiting factor on group level
  - Resulting balance sheet constraints / capital requirements cannot be allocated to within the banking group in a meaningful manor
  - Does not replace the need for the detailed analysis of risk concentrations in the B/S
- Leverage ratio substantially disadvantages lower-risk business, creating perverse incentives for banks to increase the risk levels in their portfolios, in order to produce higher returns
- Leverage ratio disregards risk mitigation. Leads to disproportionate constraints on lending
- While in the private sector de-leverage continues, the public sector is re-leveraging

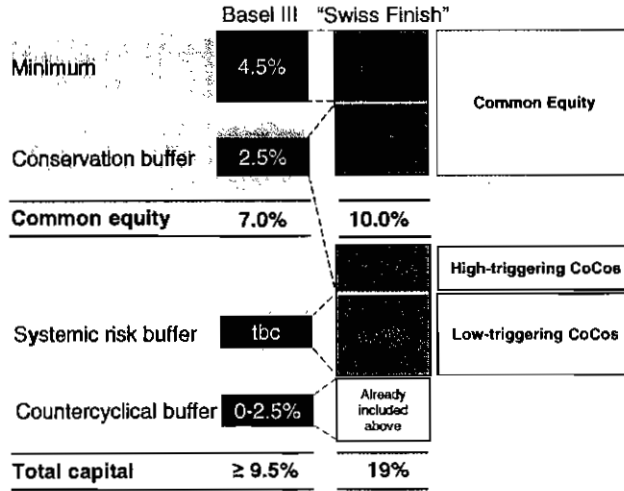
### Basel III: Increase in risk-weighted assets (RWA)



- Exit businesses:** RWA reduction of CHF 20-25bn
- Structured products:** RWA reduction of CHF 15-20bn due to change in asset mix and risk reductions by 2012
- Emerging markets:** RWA reduction of CHF 5bn achieved through a more flow-based model
- Derivatives:** RWA reduction of CHF 10-20bn related to uncollateralized exposures maturing by 2012 and OTC derivatives shift to central clearing houses



“Swiss finish”<sup>1)</sup>: Changes in capital structure (1/2)

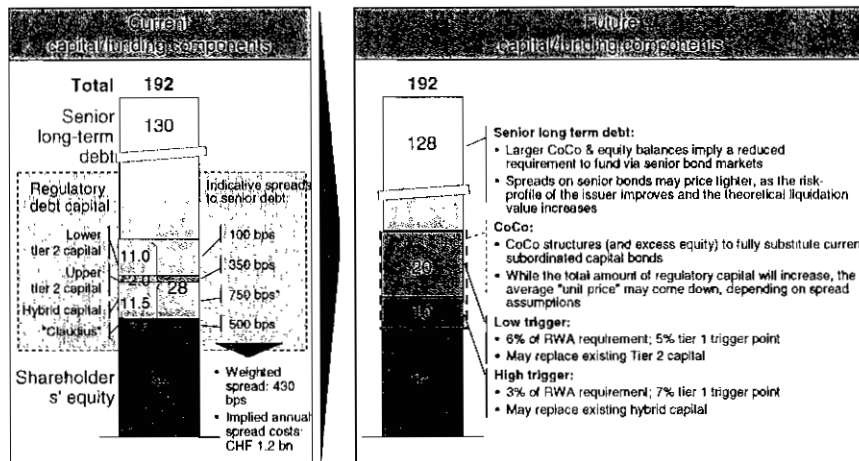


CREDIT SUISSE <sup>1)</sup> To be discussed by the Swiss parliament in 2011.

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“Swiss finish”<sup>1)</sup>: Changes in capital structure (2/2)  
(for illustrative purposes only)

34.1



Note: Based on CHF 340 bn of Basel 3 risk-weighted assets

<sup>1)</sup> Inflated due to sizable issuance volumes in 2008; would be around 500 bps otherwise

CREDIT SUISSE <sup>1)</sup> To be discussed by the Swiss parliament in 2011.

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For every complex problem there is an answer that  
is clear, simple, and wrong.

Henry Lewis Mencken  
US editor (1880 - 1956)

## Questions & Answers

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## How does Risk Management add value?

Work with our businesses, finance, and other functions to address the important questions...

<b>Risk communication</b>	<ul style="list-style-type: none"> <li>• Is Allianz's risk profile and strategy understood by the market and reflected in our valuation multiple and required capital?</li> </ul>
<b>Risk strategy</b>	<ul style="list-style-type: none"> <li>• Does Allianz have a clear risk and solvency strategy and optimize its risk / reward profile accordingly?</li> <li>• Are delegated authorities set consistent with this strategy?</li> </ul>
<b>Risk controlling</b>	<ul style="list-style-type: none"> <li>• Is the risk profile of Allianz transparent to management?</li> <li>• Is it within delegated authorities?</li> </ul>
<b>Risk underwriting</b>	<ul style="list-style-type: none"> <li>• Are the risks which we want to take appropriately structured, underwritten and priced?</li> <li>• Are all other risks (e.g. operational / reputational risk) appropriately identified and managed?</li> </ul>



FINANCIAL STABILITY INSTITUTE

BANK FOR INTERNATIONAL SETTLEMENTS

Thomas C. Wilson, Chief Risk Officer

## Implementing a Risk Culture in a Financial Services Firm

5th Biennial Conference on Risk Management and Supervision  
Basel, November 4, 2010

Allianz 

Allianz 

How does Risk Management add value?

Work with our businesses, finance, and other functions to  
address the important questions...



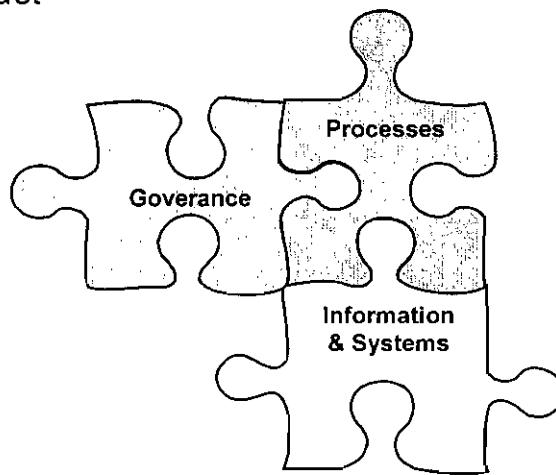
### Addressing the issues

Examples	
Risk communication	<ul style="list-style-type: none"> <li>• Regulatory filings</li> <li>• Rating agency disclosures</li> <li>• Public disclosures</li> </ul>
Risk strategy	<ul style="list-style-type: none"> <li>• Risk appetite: EaR, CaR, Risk Capital</li> <li>• Strategic Planning, not Budgeting: TDI, SD, PD</li> </ul>
Risk controlling	<ul style="list-style-type: none"> <li>• Capital and solvency risk reporting</li> <li>• Individual risk reporting</li> <li>• Associated limit systems</li> <li>• Separation of duties</li> </ul>
Risk underwriting	<ul style="list-style-type: none"> <li>• Product approval processes</li> <li>• A/L or Strategic Asset Allocation processes</li> <li>• Pricing guidelines</li> <li>• Underwriting minimum standards and guidelines</li> <li>• Independent review</li> </ul>

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### Achieving impact

Examples
Risk communication
Risk strategy
Risk controlling
Risk underwriting



Focusing on the foundations of good ERM practices is an important first step... but is it sufficient?

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**Necessary. . .but not sufficient!**

*Warren Specter, co-COO Bear Stearns, to the Senate Financial Crisis Inquiry Committee*

**You have also asked me to address risk management practices.**

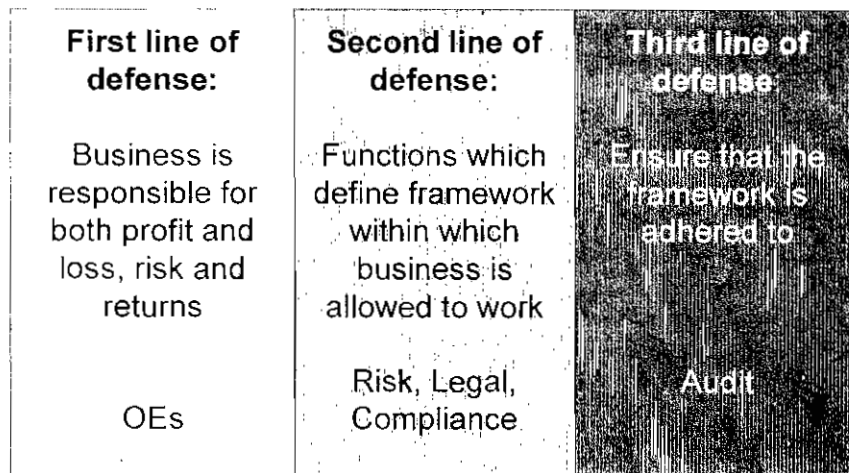
Risk at Bear Stearns was managed through a system of **checks and balances**. Each business unit was responsible for managing its risk, and the head of each division was then responsible for managing the aggregate risk within its units. The Executive Committee approved **explicit limits** for all areas of the firm - at the trading book level, and also by unit and by department - which were monitored by department heads. These limits were reviewed and monitored by the Risk Management Group, which was an **independent unit** that reported to the Executive Committee and met regularly with the Board's Risk Committee. This group, headed by Bear Stearns' Chief Risk Officer, served as an independent check on the business units' own risk management function. It distributed **daily P&L statements** that highlighted any significant gains and losses. It also provided **daily written reports** to senior management commenting on changes in exposure, any unusual trades, and any concentrated positions. The Risk Committee held **weekly meetings**, and the Risk Management Group made monthly presentations to the Executive Committee. At the weekly meetings, trading managers reported on their positions and their risk, and the risk management teams were present to verify the accuracy of these reports and to express their views. In this way, the Risk Committee and the business units served as constant checks on each other. There was an active dialogue among senior management about the firm's overall **risk appetite**, which we reviewed during both weekly and monthly meetings.

**In my opinion, Bear Stearns' risk management practices were robust and effective. During my tenure on the Executive Committee I found the Risk Management team to be highly trained and very experienced. Overall, I thought Bear Stearns was well-managed, and I was saddened and disappointed when the firm collapsed.**

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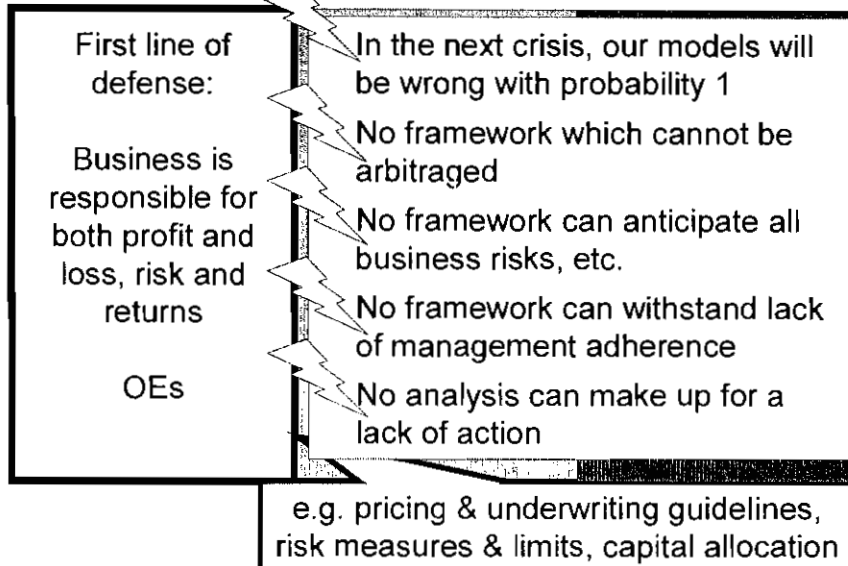
**Three lines of defense**



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Three lines of defense



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What does „risk management“ really mean in the context of the second line of defense?

Management lever	Risk controlling	Risk management
Risk communication	<p>Risk controlling</p> <ul style="list-style-type: none"> <li>Define frameworks within which business can be done</li> <li>Control risk and limits and provide transparency</li> <li>Provide technical analysis to support business decisions</li> </ul> <p>Risk management</p> <ul style="list-style-type: none"> <li>Have a deep, professional understanding of the business (not just the models!)</li> <li>Be close to the business, discussing key decisions <b>before</b> they are taken</li> <li>Exercise professional judgement, occasionally saying „no“ if our frameworks are inadequate, if they are being arbitrated</li> </ul>	
Risk strategy		
Risk controlling		
Risk underwriting		

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Signs of a dysfunctional risk culture:  
Golden Rule

Symptom: Make the gold, make the rules (and should not be challenged!)

Case study: AIG FP

- PwC, AIG's auditor, concluded that the ability to access AIG FP by the risk management and other control functions "may require strengthening".
- Federal Office of Thrift Supervision (OTS), AIG FP's regulator, sent a letter which said that the unit "was allowed to limit access of key risk control groups while material questions relating to the valuation of the [swap portfolio] were mounting".
- Rep. Gary Peters (D., Mich.) asked AIG CEO Edward Liddy during a congressional hearing, "Where was the risk management of your company? Where was the failure of your own internal risk-management procedures?" Mr. Liddy's response, "We had risk-management practices in place. They generally were not allowed to go up into the financial-products business."

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Signs of a dysfunctional risk culture:  
„Dancing while the music is playing“

Symptom: Following the market, even when standards are deteriorating

Case study: US mortgage market

- Chuck (Charles) Prince, ex-CEO of Citigroup: "When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing."
- When compared to the behaviour of a lemming at an FCIC hearing, Mr. Prince's reply was, "It would have been impossible to say to bankers, we're not going to participate ... and expect to have any people left."

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Signs of a dysfunctional risk culture:  
Arbitraging the system

Symptom: Building a business based on the flaws in our models

Case study: Lehman Brothers

- 'Repo 105' transactions were considered a sale of the assets under English law.
- Court appointed examiner's report said these deals created "a materially misleading picture of the firm's financial condition in late 2007 and 2008" and were "actionable balance sheet manipulation" and "nonculpable errors of business judgment",
- Condoned by senior management of the firm, as the email excerpt illustrates:
  - "It's basically window-dressing."
  - "I see ... so it's legally do-able but doesn't look good when we actually do it? Does the rest of the street do it? Also is that why we have so much BS [balance sheet] to Rates Europe?"
  - "Yes, No and yes. :)"

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How much can we rely on compensation to steer culture?

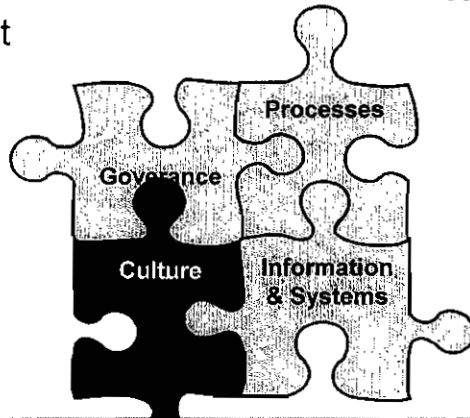
- „Dick Fuld (CEO) is also, in some sense, a victim. He'd held on to 10 million shares of Lehman stock until the end and lost almost \$1 billion"
- „Mr Prince, whose exit was sealed late last week, already owns 1.61 million shares in Citi" which decreased in value from USD 50 to USD 5 between 2007-2009.
- On March 14, 2008, CNBC reported that „the value of Jimmy Cayne's (CEO) holdings in Bear Stearns had declined from \$993 million to ... less than \$15 million as a result, effectively removing him from the list of the wealthiest individuals in the country."

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### Achieving impact

Examples
Risk communication
Risk strategy
Risk controlling
Risk underwriting



US Supreme Court Justice Potter Stewart (*on risk culture??*), 1964 *Jacobellis vs. Ohio*

"I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it..."

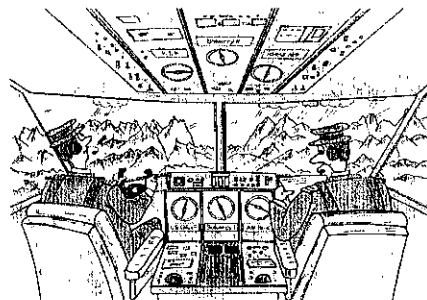


## Managing within risk tolerance in a complex environment

## Insurance risk management is complex and multi-dimensional

### What makes it difficult?

- Stakeholders have different views on capital adequacy
- Stakeholders emphasise different dimensions
- Different dimensions in the steering concept send different signals





## Stakeholders often have diverging interests

Today's steering environment is complex as it consists of numerous stake holders emphasising multiple dimensions.

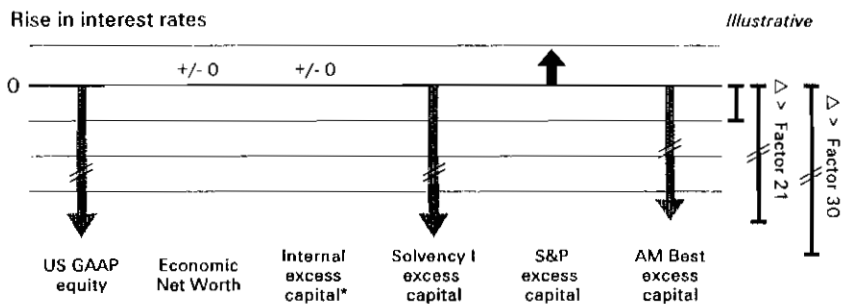
- Clients => payments of claims whenever due
- Regulators => protection of policyholders against consequences of insolvency
- Rating agencies => fulfilment of obligations to policy holders and debt holders
- Investors => high risk-adjusted return

- ▶ Having an adequate capital position is in the interests of all stakeholders
- ▶ Different stakeholders have different perspectives on how to value assets and liabilities and to measure capital adequacy



## Conflicting signals are not trivial Example at the reinsurance level

### Examples from a European Reinsurer



Impact of volatility in government bond yields on Swiss Re's US GAAP shareholders' equity (pre-tax, as published):	Q1 2009:	CHF -2.2 bn
	Q2 2009:	CHF -1.5 bn
	Q3 2009:	CHF +1.3 bn

\* proxy for Solvency II and Swiss Solvency Test



## Mitigating challenges for a smoother road ahead

## Definition of risk tolerance must be a critical element of the business cycle







Swiss Re

A well-defined risk tolerance can help mitigate conflicting signals

**Swiss Re risk tolerance:**  
 "To be able to continue to operate following an extreme loss event."

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Swiss Re

Consider the level of risk reflected in risk tolerance

**Concept**

Value at Risk (VaR) is the maximum amount of loss that can be expected over a given time horizon with a given level of confidence. The confidence level is the probability that the actual loss will not exceed the VaR.

● **Value at Risk (VaR)**  
 99% VaR represents the difference between the expected result and an adverse result with a frequency of once in one hundred years

**Application**

Required capital at 99% Tail VaR

CHF bn	2008	2009
Property and casualty	7.9	7.0
Life and health	5.2	5.5
Financial market	8.0	10.5
Credit	3.0	2.9
<b>Simple sum</b>	<b>24.0</b>	<b>25.9</b>
Diversification effect	-9.1	-9.9
<b>Swiss Re Group</b>	<b>14.9</b>	<b>16.0</b>

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Swiss Re  
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### Convergence to an economic view simplifies managing within a risk tolerance

**Ultimate convergence, but at different speeds**

Illustrative only, i.e. the lines are not representative of any specific case

- Allowing alignment of economic steering with solvency considerations
- Allowing true risk-based capital and portfolio management and pricing

▶ Joint effort of all stakeholder needed to move towards economic view

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### Solvency II working to reinforce common goals

**Solvency II promotes sound risk and capital management**

- Principles of approved framework directive are economic and risk-based
- Implementation to properly reflect these principles (e.g. appropriate recognition of risk mitigation techniques)

**Effective group supervision needed**

- Regulation must keep pace with globalisation of business
- Large institutions to be supervised in their entirety
- Revisit group support regime after 2015

**Equivalence between solvency II and other similar regimes** (e.g. Switzerland/SST) sets the way forward to global convergence

▶ Opportunity to accelerate cooperation between regulators

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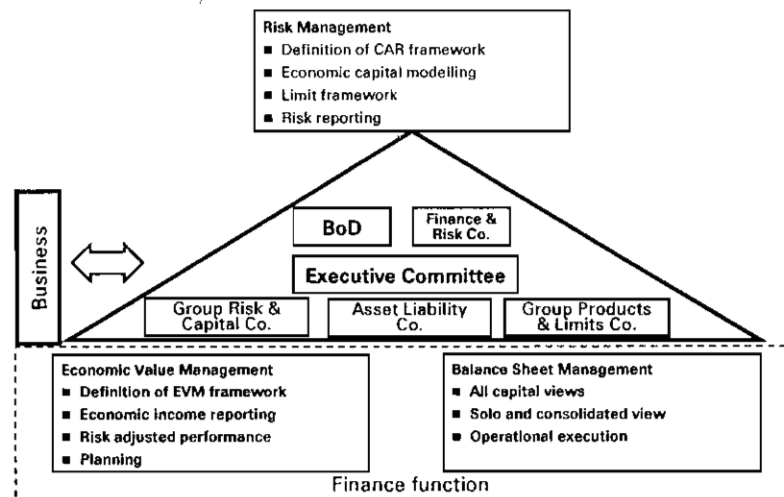
Independent, centralized risk function can help prioritize different signals

- The economic crisis highlighted the importance of a centralized risk function
- Realizing the full benefit of an independent function requires that
  - ✓ the Risk function is well embedded in the strategic steering of the company
  - ✓ CRO has an equal seat at the decision table
  - ✓ Risk has the courage to raise its voice
  - ✓ Risk provides an independent and transparent view of obstacles ahead

Swiss Re



Governance over risk tolerance involves many levels





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### Assumptions and models driving your risk tolerance must be constantly tested

```
graph LR; A[External validation for operational control] --> B[Developed by Risk  
Risk factor models]; C[Risk Management validation for:  
- integrity of p/l  
- integrity of risk measurement  
- appropriateness of assumptions] --> D[Developed by the business  
Exposure models  
Valuation models  
Pricing models]; B --> E[Risk Figures]; D --> E;
```

External validation for operational control

Developed by Risk  
Risk factor models

Risk Management validation for:  
■ integrity of p/l  
■ integrity of risk measurement  
■ appropriateness of assumptions

Developed by the business  
Exposure models  
Valuation models  
Pricing models

Risk Figures

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### Processes, frameworks and analysis are not reliable without accurate data

```
graph LR; subgraph "Credit Data"; T[Treasury]; AL[Asset & Liability Mgmt]; R[Reserving]; CRD[Credit Risk Domain]; end; subgraph "Business Domain Data"; AM[Asset Mgmt]; LH[L&H]; PC[P&C]; end; subgraph "Risk Domains"; MRD[Market Risk Domain]; PCRD[P&C Risk Domain]; LHRD[L&H Risk Domain]; LRD[Liquidity Risk Domain]; end; subgraph "Final Steps"; CD[Consolidate data]; CGR[Calculate group risk]; ALG[Analysis / group limit control]; end; "Credit Data" --> RDI[Risk Domain Integration]; "Business Domain Data" --> RDI; RDI --> RDs[Risk Domains]; RDs --> RI[Risk Integration]; RI --> CD; CD --> CGR; CGR --> ALG;
```

Credit Data

Treasury

Asset & Liability Mgmt

Reserving

Credit Risk Domain

Business Domain Data

Asset Mgmt

L&H

P&C

Risk Domain Integration

Market Risk Domain

P&C Risk Domain

L&H Risk Domain

Liquidity Risk Domain

Risk Integration


Consolidate data

Calculate group risk

Analysis / group limit control


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Think ahead to envision your future risk landscape

- Securitized products
- Liquidity stresses
- Off balance sheet conduits
- Tail dependencies
- Sensitivities to key model assumptions
- Full implications of investment decisions
- Incentives



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**Swiss Re**  


Managing risk in volatile times requires balancing conflicting signals from various stakeholders

- 1 Integrate risk tolerance into the business cycle  
 → Risk must be fully embedded throughout the business

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- 2 Adhere to your risk tolerance  
 → A well-defined risk tolerance can help mitigate conflicting signals

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- 3 Embrace an economic view  
 → Alignment of economic steering with solvency considerations

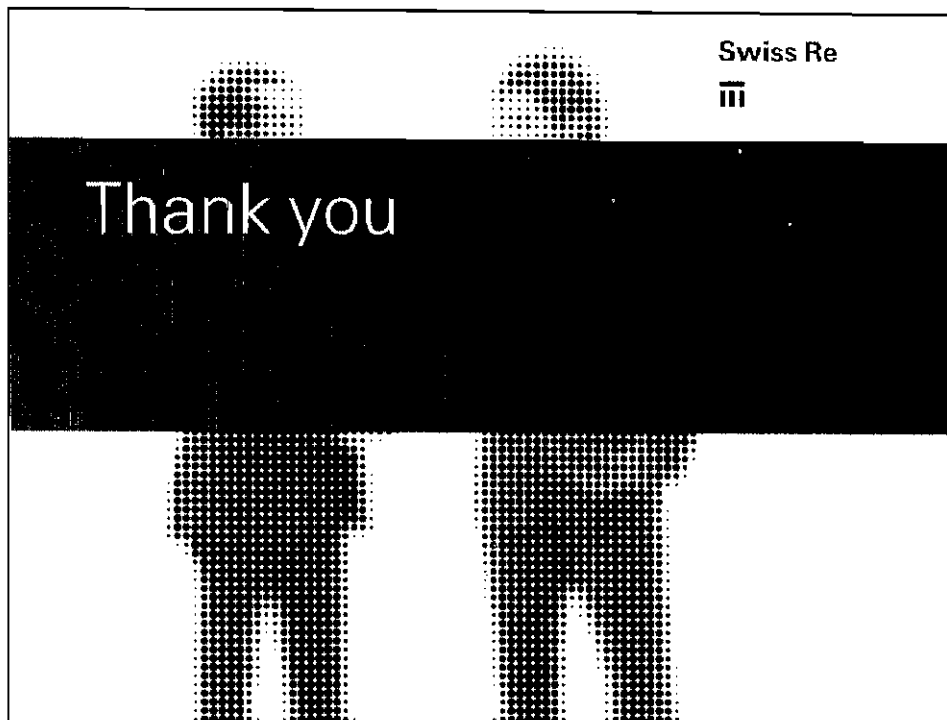
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- 4 Ensure Risk is independent  
 → A central independent risk function helps prioritize different signals

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- 5 Think the unthinkable  
 → Assumptions, models and frameworks must be constantly tested

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**BCG**

## **The new era of liquidity risk regulation**

Dr. Peter Neu

5th Biennial Conference on Risk Management and Supervision  
Basel, Switzerland, 3–4 November 2010  
Financial Stability Institute, Bank for International Settlements

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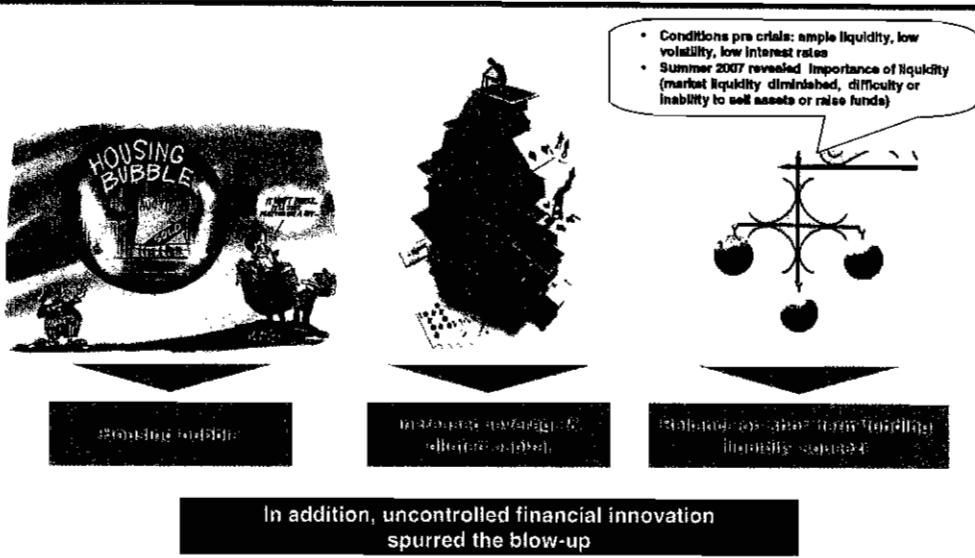
### **Agenda**

**The subprime crisis and developments in liquidity risk**

1. Introduction  
2. The subprime crisis  
3. Developments in liquidity risk



**Reminder: Three factors were necessary to spark the worldwide crisis – although none alone sufficient**



Voting Liquiditätsrisikosteuerung 14Oct10-FN-FRA\_short\_2.ppt

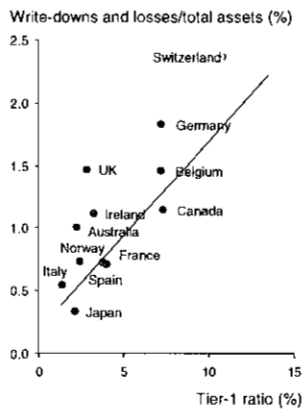
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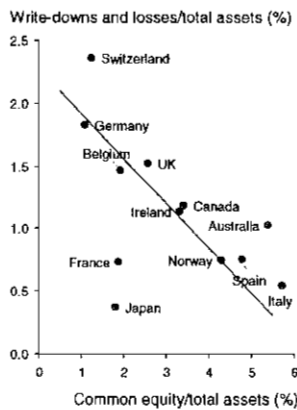
**Incomplete regulatory framework facilitated risk taking**

Incomplete regulatory capital adequacy ratio and lacking regulation of liquidity risk

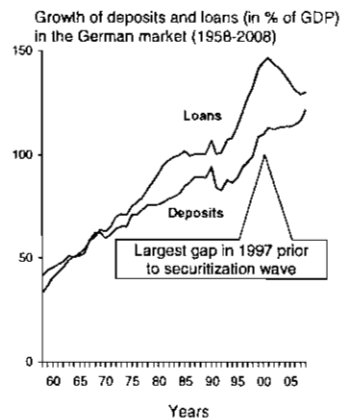
Capital adequacy ratio (Tier 1) proved to be a poor predictor for future losses



Excessive end unregulated leverage (relative to common equity) enhanced banks' losses



Aggregation of maturity transformation and funding gap lead to growing liquidity risk



Note: Calculations based on the sample of banks reporting write-downs and credit losses as reported by Bloomberg, excluding US banks (where most conglomerate losses occurred in off-balance sheet vehicles to which Basel capital adequacy did not apply). Write-downs & losses are accumulated from January 2007 until end-2008. Tier 1 ratio, total assets and common equity are averages of 2006–2008 and of-year data (2007–2008 for Japan Tier 1 ratio). Source: OECD report, "Thinking beyond Basel III: necessary solutions for capital and liquidity", 26 May 2010.

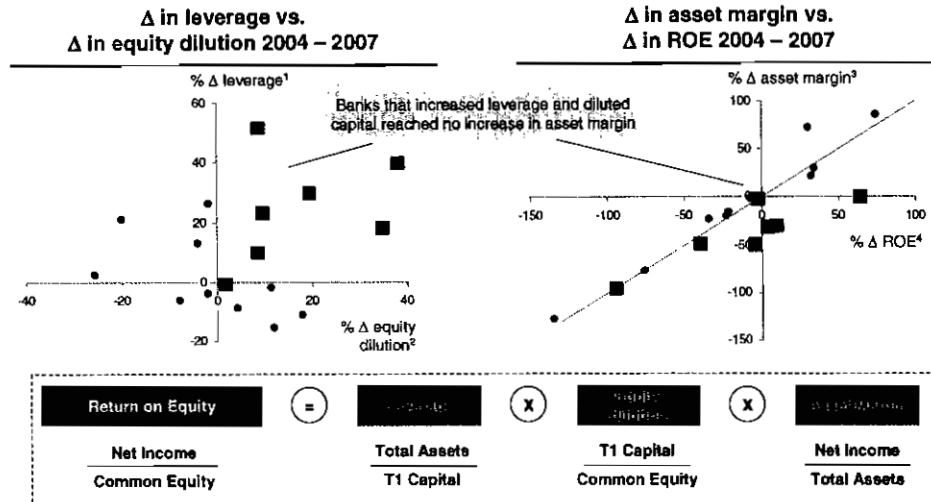
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3





## Many global banks tried to boost ROE by increasing leverage and diluting regulatory capital



1. Total assets/Tier 1 capital 2. Tier 1 capital/common equity 3. Net income/total assets 4. Pretax income/common equity  
 Source: Bankscope data, BCG analysis following a similar analysis in Andrew Haldane, Simon Brennan and Vasilios Madouros in "The Future of Finance" (LSE Report, 2010)  
 Vortrag Liquiditätsrisikosteuerung-14Oct10-PH-FIA\_sherl\_2.ppt THE BOSTON CONSULTING GROUP 4

## The crisis revealed severe shortcomings in banks' liquidity management approach

- ❗ Mistaken belief that wall of money from China/resource-rich countries and prolonged low interest rates render liquidity a "non-issue"
- ❗ Overreliance on short-term debt and insufficient liquidity buffers
- ❗ Insufficient understanding of stressed markets regarding contagion and liquidity risk
  - Liquidity support for conduits
  - Links between collateral call and value of collateral, interest rate, and credit spread risk
- ❗ Insufficient contingency planning and pricing of liquidity
  - Treatment of contingent assets and collateral
  - Hedging strategies for structured products (e.g., TRS)
- ❗ Insufficient consideration of funding constraints in business strategies and planning
  - Overreliance on cross-border funding to facilitate growth in emerging markets (e.g., CEE)
  - Expansion in investment books at the cost of client business
- ❗ Insufficient attendance of liquidity risk in regulations (micro-prudential approach)



## Agenda

The subprime crisis and developments in liquidity risk

Regulatory response and best practice liquidity risk management

Looking ahead

## Regulatory response to the financial crisis (Basel 3) address all three drivers albeit some of them with great delay

	Main motivation	Time Line
<b>Better Quality of capital</b>	<ul style="list-style-type: none"> <li>Basel II Tier 1 Capital will be replaced by Basel III Core Tier 1 Capital (mainly common equity)</li> <li>Characteristics of Core Tier 1 loss absorbency, permanency and flexibility of payments</li> </ul>	2015 - 2022
<b>More capital, less leverage</b>	<ul style="list-style-type: none"> <li>Increase in RWAs mainly due to stricter market risk, (re-)securitization and cpty risk regulations</li> <li>Higher core T1 ratio 4.5% (B2: 2%), higher T1 ratio of 6% (B2: 4%), constant total capital ratio of 8%</li> <li>Leverage ratio of 3% as backstop limit to catch short-comings of risk-based capital approach</li> </ul>	2012/2013 (2013 -) 2015 (2011 -) 2018
<b>Better risk management</b>	<ul style="list-style-type: none"> <li>Enhance risk Pillar 2 issues (governance, risk appetite/strategy, regulatory supervision process)</li> <li>Improve liquidity management: Indicator for short-term (Liquidity Coverage Ratio &gt; 100%) and structural liquidity risk (Net Stable Funding Ratio &gt; 100%)</li> </ul>	(2011 -) 2015/2018
<b>Less pro-cyclicality</b>	<ul style="list-style-type: none"> <li>Introduction of mandatory Core Tier 1 capital buffers<sup>3</sup> of 2.5-5% on top of minimum core T1 capital requirements to ensure capital availability over the business cycle</li> <li>Credit provisioning based on expected loss and application of downturn PDs for capital calculation</li> </ul>	(2016 -) 2019 tbd
<b>Less systemic risk</b>	<ul style="list-style-type: none"> <li>Discussion of "banks being too big to fail" – requirement for "bank resolution" plan</li> <li>Discussions about capital markets transaction tax and bank tax</li> <li>New requirements on bonus pools and incentivization programs</li> </ul>	tbd tbd 2011

1. Loss absorbency, permanence, flexibility of payments 2. Criteria: 50/50 deductions, deferred tax assets, investments in financial holdings, pension deficits, revaluation reserve, minority interests  
3. Capital conservation buffer (2.5%) and countercyclical buffer (0-2.5%) in times of excessive credit growth  
Source: BCG analysis



Backup

## New regulatory requirements reflected in key ratios

Capital	<p><b>Core Tier 1 capital</b></p> $\frac{\text{Core Tier 1 capital}}{\text{RWA}} \geq 4.5\%$ <ul style="list-style-type: none"> <li>Core Tier-1 ratio as dominant measure of capital adequacy (e.g., hybrids and silent participations excluded)</li> </ul>	<p><b>Conservation buffer + (countercyclical buffer)</b></p> $\geq 2.5\% - 5.0\%$ <ul style="list-style-type: none"> <li>Conservation buffer in upswing of 2.5%</li> <li>Countercyclical buffer in times of excessive credit growth of up to 2.5%</li> </ul>
	<p><b>Liquidity coverage ratio (LCR)</b></p> $\frac{\text{Highly liquid assets}}{\text{Net cash outflow over 30 days}} \geq 100\%$ <ul style="list-style-type: none"> <li>Intention to ensure liquidity over a short-term period of 30 days under stress</li> </ul>	<p><b>Net stable funding ratio (NSFR)</b></p> $\frac{\text{Available stable funding}}{\text{Required stable funding}} \geq 100\%$ <ul style="list-style-type: none"> <li>Intention to ensure maturity matching on asset and liability side</li> </ul>
Leverage	<p><b>Tier-1 capital</b></p> $\frac{\text{Tier-1 capital}}{\text{Total Assets}^1 + 10\% \times \text{OBS}^2} \geq 3\%$ <ul style="list-style-type: none"> <li>Calculation as average over the quarter</li> <li>Reviewed after observation in H1/2017</li> </ul>	

1. Total Assets to be reduced by regulatory deductions that are applied to Tier 1 capital – additionally Bon of II netting for derivatives possible 2. Off-Balance Sheet Items (e.g. undrawn credit, written CDs); Assumption: CCF of 10% relating to all OBS  
Source: Basel Committee on Banking Supervision  
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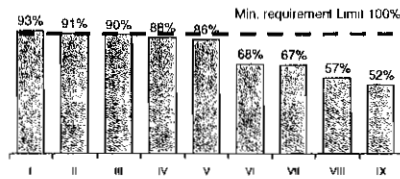
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## New liquidity requirements are a good complement to the 2008<sup>th</sup> qualitative approach on liquidity regulation ...

Meeting 100% NSFR is still a challenge for most German banks even after revision of the framework

NSFR<sup>1</sup> in %



### Mitigation Measures

- Replace banking bonds by eligible bonds (govt, covered bonds, ...)
- Increase share of retail deposits at the cost of wholesale, money markets and capital markets funding
- Enhance term funding of assets / reduce tenor of assets
- Encourage DCM at the cost of wholesale loan business
- Reduce credit commitments

Framework still contains conceptual problems even after revision

### Overall

- Framework too strongly looking into the past – structures of crises are usually very different
- Crises are usually very specific to individual institutes – potential "dilemmas" for banks using internal models
- Framework too strongly biased against wholesale business – may underestimate vulnerability of retail markets
- Static approach with simple ratios, but huge impact – no recognition for cashflow- / multiple scenario-based internal models

### Liquid assets / Available stable funding

- High reliance on potentially "risky" government debt
- Inconsistency with "central bank eligibility"
- 90% stability of retail deposits potentially too positive for a specific "bank run" scenario
- Categorization of deposits<sup>3</sup> technically difficult to implement

### Outflow / Required funding

- Unrealistically assumptions for interbank markets ("0%" rollover)
- Differentiation between corporate loans and corporate bonds questionable in crisis situations

**... but are no replacement for an internal, institute-specific assessment of liquidity risk**

1. Proforma calculation on YE 2009 data assuming full implementation of Basel III without mitigation measures 2. Strong focus on "intra-bank market bank run" 3. "Stable/Less stable", "with/without operational relationship" Note: No estimates for liquidity coverage ratio due to data availability 1. Leverage ratio calculated without any netting of derivatives and as year-end ratio  
Source: BCG Pillar 3 database, Bank disclosure reports, annual reports 2009, Bankscope

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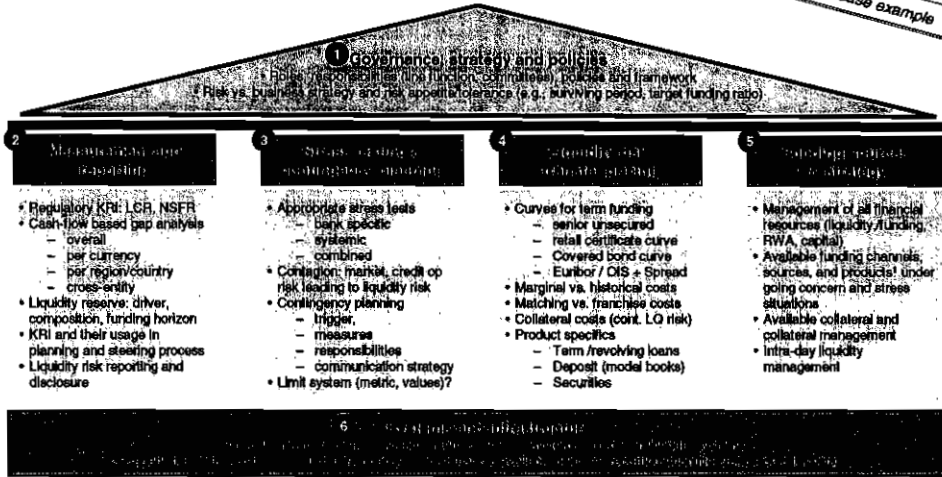
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## 2008 Sound practices paper addresses all relevant topics and in line with internal management of liquidity risk

BCG case example



1. Retail, wholesale, money and capital markets  
 Source: BCG case example for implementation of a liquidity risk framework  
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## New BCBS-2009/2010 liquidity standards still to be implemented at almost all banks – high complexity expected

### Adoption of coming regulations

'Principles for Sound Liquidity Risk Mgmt. & Supervision' (BCBS Jun. 2008)

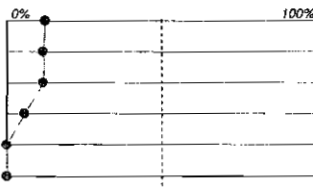
Liquidity principles



Elements of current BCBS consultation paper<sup>2</sup> (as of Dec. 2009) already in use

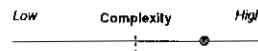
- Liquidity Coverage Ratio (LCR)
- Net Stable Funding Ratio (NSFR)
- Contractual Maturity Mismatch
- Concentration of Funding
- Available unencumbered assets
- Market-related monitoring tools

Use according to BCBS definition



Expected complexity with regard to implementation of new regulation

Expected complexity



### Observations

- Implementation of BCBS-2008 Principles apparently progressing well for all banks
- B3 liquidity KRI in most banks not available on an automated basis – significant implementation effort is expected in most banks
- Some banks report usage of similar measures to attain the same objective

1. Average of provided answers 2. 'International framework for liquidity risk mgmt., standards, and monitoring', BCBS, December 2009  
 Source: BCG-Treasury Survey 2010  
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## Agenda

The subprime crisis and developments in liquidity risk

Regulatory response and best practice liquidity risk management

Looking ahead

## Key challenges ahead for liquidity risk management

- ✓ **Matching liquidity risk strategy and business strategy**
  - Impact of B3 LQ-rules on product profitability and business strategy
  - Adjusting funding sources, instruments and funding plan
  - Adapting internal steering mechanism: Funding costs (FTP, client rate) for term liquidity, contingent liquidity, metrics/KRI, and limits system
  
- ✓ **Implementation of new regulations in banks' IT systems**
  - Readiness for observation period for LCR and NSFR to start in 2011/2012
  - Managing LCR and NSFR – shifting liquidity reserve, issuing sufficient debt at suitable rates, ...
  - Identification of "stable" deposits and "clients with operational relationship" in IT systems
  - Prioritizing of various "urgent" implementation topics: B3, FTP, internal model
  
- ✓ **Resolution of potential contradictory steering impact**
  - Internal liquidity risk models (Pillar 2) vs. LCR/NSFR (Pillar 1) – partially contradictory approaches
  - Review of cashflow modeling, scenario definitions and behavioral adjustments
  - Review of liquidity risk appetite: definition and size of the liquidity reserve, time-to-insolvency



## Some homework to do for regulators and G20

- ✓ Quantitative framework for liquidity regulation is fragile, simple LQ-rules can have huge impact on markets / real economy – test phase with potential recalibration is key<sup>1</sup>
- ✓ Higher required regulatory capital further incentivizes regulatory capital arbitrage – regulators need to define early warning indicators for excessive usage
- ✓ B3 makes a shadow banking systems and the move of risks out of regulated markets more probable – consistent regulation of risks beyond the banking sector is required
- ✓ A more stringent regulation under Pillar 1 inevitably leads to a larger gap to Pillar 2 capital and liquidity adequacy – regulators need to advise on how to deal with this
- ✓ More Pillar 1 regulation will not fix the core of the problem – regulators and supervisory boards need to encourage different behavior, governance and risk culture
- ✓ Regulation can only do parts of the job – stronger collaboration with central banks' monetary policies and accounting rules is required

<sup>1</sup> E.g., too strong focus on a bank run at interbank markets  
Source: BCG analysis  
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## Key trends to be considered for the banking industry

- ✓ Lower margins and growth, less liquidity and capital
  - Efficient management of financial resources will be a competitive advantage for banks
  - Growth mostly out of relative weaknesses of competitors
- ✓ Less product innovation and less complexity—traditional banking products and client franchise will regain importance
- ✓ Further interbank and internal consolidation
  - Demise of wholesale funding drives fight for retail deposits and further consolidation
  - Costs reduction and lean processes/infrastructure
  - Investment decisions under increased scrutiny requiring better data and information
  - Customer may see in consolidated markets an increase in fees and prices

**Time of easy money is definitely over — banking to move more into a facilitator role for the real economy ?!**

Source: BCG analysis  
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**Q&A**

**Thank you for your attention!  
Questions?**

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