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Autorité fédérale de surveillance des marchés financiers FINMA  
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Swiss Financial Market Supervisory Authority FINMA

# Observations on risk management practices in light of the market crisis

Workshop on Enterprise Risk Management  
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- Introduction:
  - Brief overview of stages of the market crisis (so far)
  - The role of financial institutes in triggering the crisis
- Supervisory coordination: Senior Supervisors' Group effort
- Risk management practices of large financial institutes
  - Observations at the onset of the market crisis
  - Progress made and 2<sup>nd</sup> lessons learned
- Intended enhancements to the Basel II framework

**All views expressed are those of the speaker and do not necessarily reflect the views of the FINMA**

# Overview of stages of market crisis (so far) (1)

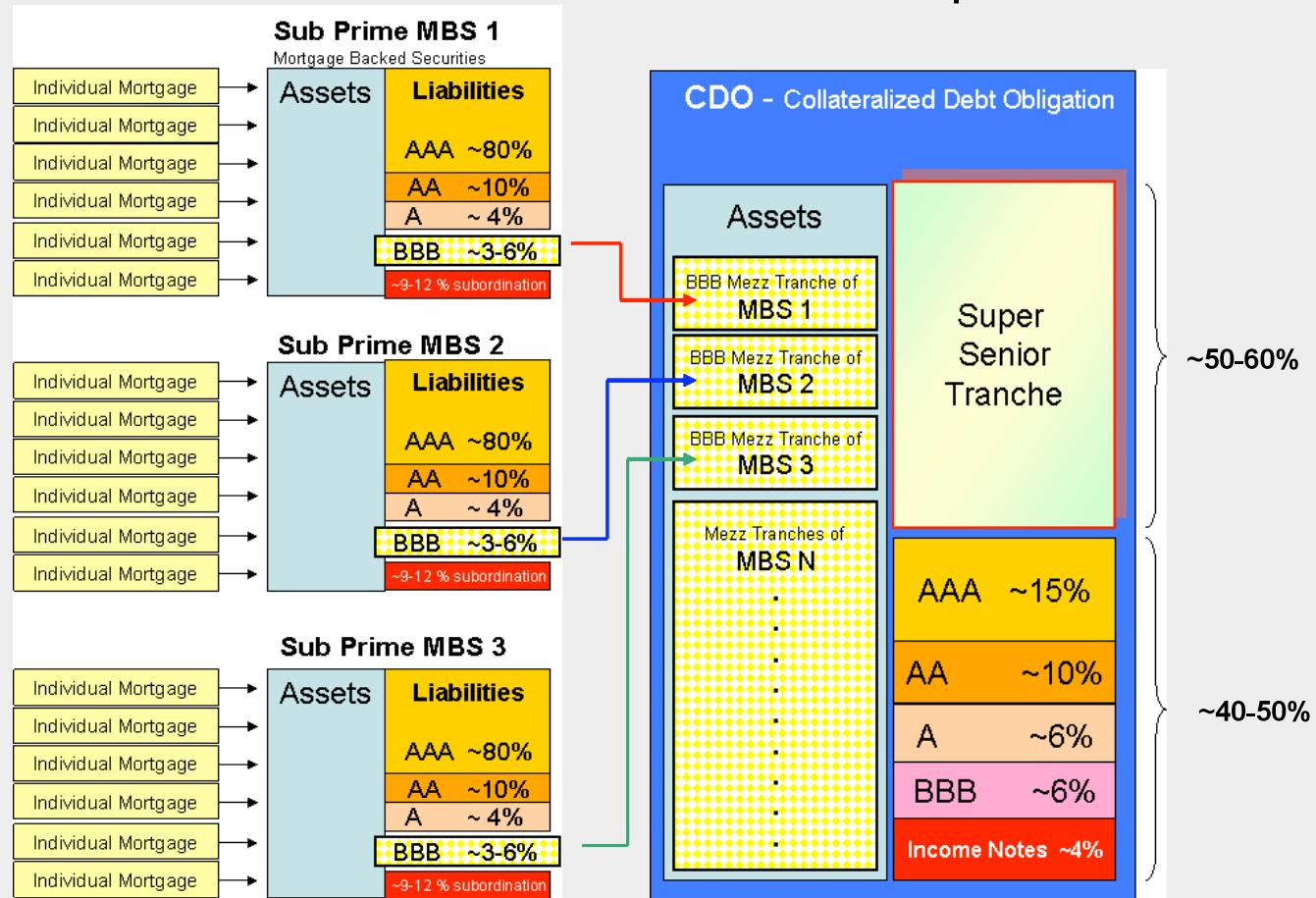


- At the origin, subprime mortgage crisis as a result of a specific plot of macroeconomic conditions and microeconomic systemic failures
  - Macroeconomic triggers:
    - Global savings glut and excessive liquidity
    - Low interest rate and credit spread environment in traditional credit space fuels investor demand for higher yielding structured credit products like CDOs
  - Microeconomic flaws:
    - Un-orderly proliferation of subprime mortgages in US neglecting basic underwriting standards
    - Unrecognized information asymmetry for investors in (ABS) CDOs
    - Mistakes of rating agencies in the credit assessment of such securities
    - Excessive leverage of banks
    - Inadequate risk management practices of financial institutes

# Overview of stages of market crisis (so far) (2)



## Illustration: MBS CDOs as re-securitization products



# Overview of stages of market crisis (so far) (3)



- From August 2007
  - Outbreak of the subprime mortgage crisis in response to the collapse of two hedge funds owned by Bear Stearns
  - First TED spread take-off to 240 bps
  - Illiquidity in subprime mortgage market
  - Northern Rock receives liquidity support
- From December 2007
  - TED Spread hit again 220 bps
  - Financial crisis was reverberating across other credit areas and a wide range of financial institutes
  - Effects of transmission were most severe for institutes with vast exposure to subprime mortgage market
  - Proliferation of credit risk entailed expansion of CDS while CDOs were declining
  - Sharp increase in counterparty risk resulted in extensive losses by large dealers of derivatives, most notably Bear Stearns

# Overview of stages of market crisis (so far) (4)



- March 2008
  - Collapse of Bear Stearns
  - TED-Spread at 204 bps
- July 2008
  - Oil prices peak at USD 147 per barrel as money flees housing and stock assets toward commodities
- Since September 2008
  - Default of Lehman
  - Rescue of AIG and intervention in a range of other systemic institutes in US and Europe (of which UBS)
  - Troubled Assets Relief Program
  - Federal takeover of Fannie Mae and Freddie Mac
  - Merrill Lynch sold to BoA; Morgan Stanley and Goldman Sachs become traditional bank holding companies
  - TED spread reached new apex of 464 bps in October

# Overview of stages of market crisis (so far) (5)



- From September 2008 (cont'nd)
  - Partial nationalization of Fortis
  - Iceland's major banks nationalized
  - Huge increase in perceived counterparty risk, the demand for liquidity jumped to new heights, and market volatility soared again.
  - Result was a flight to quality that depressed most liquid government securities and an evaporation of wholesale funding.
  - Liquid assets were sold at fire-sale prices, corporate bond spreads widened sharply, banks tightened underwriting standards further and equity prices fell steeply. Also emerging markets have been hit hard.
  - Credit crunch hits global economy and deepens recession.
  - .....

# Role of financial institutes in triggering the crisis



- Excesses and failures were at the core of the banking (and shadow-banking) system
- Undue balance sheet growth by accepting excessive leverage
- Massive origination of subprime mortgages in US neglecting basic underwriting standards
- Underestimated risks related to “originate-to-distribute” business model (RMBS, CMBS, ABS, Leveraged Loans)
- Inadequate risk management practices, in particular with respect to complex, structured products
- In-effective risk transfer of problematic assets to off-balance sheet vehicles (SIVs, Conduits)
- Underestimation of impact of systemic liquidity stress situations
- Huge losses and severe liquidity problems lead to loss of confidence in banking industry heavily impacting financial markets
- Un-orderly deleveraging of balance-sheets and credit crunch due to sharp reduction of financing activities lead to further deterioration of global economy

# Supervisory coordination: Senior Supervisors Group (1)



- Group of supervisors from US, UK, GER, F, CH, [J, CAN]
- SSG started in September 07 to evaluate risk management practices of major global financial institutes ahead and during period of market turbulence
- Not standard-setter, but group of supervisors of systemically important institutes (banks and securities firms) to concert analyses regarding key risk areas and to act rapidly and in a coordinated manner
- Comparative advantage of investigating actual market practices of major firms to inform the broader supervisory process (in particular FSF and Basel Committee)
- Regular information exchange between the supervisors during the crisis with respect to key risk areas and national developments and measures

# Supervisory coordination: Senior Supervisors Group (2)



## Areas treated by the SSG

- Risk management practices of major financial institutes (“Observations on Risk Management Practices during the Recent Market Turbulence”, March 6, 2008)
- Disclosures practices (“Leading-Practice Disclosures for Selected Exposures”, April 11, 2008)
- Counterparty Credit Risk Management
- Credit Event Management (“Observations on Management of Recent Credit Default Swap Credit Events”, March 9, 2009)
- Liquidity Risk Management
- Credit Derivates Market
- Commodities Market
- Second Lessons Learned (update of first report, work in progress)

# Risk management practices: Early observations (1)



## **Methodology of review and use of results:**

- Developed detailed questionnaire on risk areas
- Arranged sessions, involving cross-agency teams, with a selected subset of major firms in the relevant business lines – using questionnaire
- Used the information from the sessions, in conjunction with information from the principal supervisors, to structure observations on risk management areas
- Round table with participating firms
- Publication of the report “Observations on Risk Management Practices during the Recent Market Turbulence” on March 6, 2008
- Firm-specific feed-back by home supervisor

# Risk management practices: Early observations (2)



## **Three business lines where varying practices differentiated performance:**

- CDO structuring, warehousing and trading business
- Syndication of leveraged financing loans
- Conduit and SIV business

## **Four firm-wide risk management practices that differentiated performance:**

- The effectiveness of communication among senior management, business lines and risk management functions
- The effectiveness of senior management oversight of balance sheet, liquidity and capital positions
- The sophistication, diversity and adaptability of risk measures applied
- The attention devoted to valuation issues

# Communication among senior mgt, business and risk mgt functions



## **Successful firms:**

- Emphasized a comprehensive, firm-wide look at risk (across business units, activities, risk types).
- Disciplined culture and well-established processes for routine discussion of current and emerging risks across the business lines, risk management, and finance.
- Made decisions about aggregate firm-wide exposures and risk mitigation (e.g., hedging) rather than rely solely on the judgement of business lines.

## **Less successful firms:**

- Business lines were “siloesd” in their view of risks and made decisions in isolation. Did not make decisions based on consolidated views.

# Management of the balance sheet, liquidity, and capital positions



## **Successful firms:**

- Disciplined in measuring and limiting these risks.
- More agile in reducing/hedging exposures.
- Strong process around allocation and internal pricing of liquidity and capital.

## **Less successful firms:**

- Not focused on consolidated positions.
- Weak or missing controls, particularly around contingent liquidity needs.

# Sophistication, diversity and adaptability of risk measures



## Successful firms:

- Used a wide range of informative risk measures to discuss and challenge views on credit and market risk broadly across different business lines within the firm in a disciplined fashion.
  - Notional and gross measures, market sensitivities of derivative exposures, notional limits, VaR, static single-factor stress tests, and historical and forward-looking scenario analyses.
- Understood the limitations of individual risk measures
- Adaptable MIS

## Less successful firms:

- Dependent on a single methodology, limited set of tools, or inflexible applications that could not be adjusted to the crisis
- Tended to apply a “mechanical” risk management approach

# Discipline, scepticism and judgment in valuation



## **Successful firms:**

- Emphasized mark-to-market discipline.
- Invested in the development of independent pricing models and staff with specialized expertise.
- Sceptical of and less reliant on external ratings.

## **Less successful firms:**

- Did not put as strong an emphasis on market prices.
- Adopted relatively passive approaches of observing prices and using external assessment of value.
- Treated positions as “par assets”.

# Some specific observations: Senior management oversight (1)



- The balance between risk appetite and risk controls
  - Senior management at nearly all firms surveyed had allowed the businesses to increase their exposure to market risk
  - Firms differed in the incentives established for business line managers
- Senior management's role in understanding and acting on emerging risks
  - Firms differed in the degree of expertise of the senior management team, and their involvement in adjusting the firm's risk appetite and strategy to the environment in the year preceding events.
- Senior management's active engagement once problems emerged

# Some specific observations: Senior management oversight (2)



- Timing and quality of information flow **up** to senior management
  - All firms understood and were discussing changes in markets and risks by the summer of 2007; many did so earlier
  - Some firms escalated concerns to senior managers as early as the summer 2006; others lagged in discussing the emerging risks.
- Breadth and depth of internal communication **across** the firm
  - Some firms defined and discussed risk broadly across business lines. “Silos” in the structures of other firms appeared to be detrimental to their performance.
- Firms that appeared to perform better had a comprehensive and consolidated view of risk and took management action on that premise. This contrasts with the view of a firm as a diversified set of businesses operating within conservative risk tolerances.
- Role of incentives and compensation practices

# Some specific observations:

## Risk measures (1)



- Firms differed in the number and type of measures used
  - “Greeks”, VaR, static single-factor shocks, historical scenarios, forward-looking scenarios
  - At the best firms, each tool provides a different view of the risk
    - Conditional vs. Unconditional, normal vs. stress correlation
  - Several firms cited the usefulness of notional and gross measures of exposure during events, and problems associated with focusing on net measures of risk.
- Ability to integrate the positions across businesses for both market and counterparty risk management varied.

# Some specific observations: Risk measures (2)



- VaR systems generally worked as expected
  - Most firms' VaR calculations ranged from 30% to 80% higher than during benign periods when using more recent data sets.
  - Back-testing exceptions were generated by much higher market volatility and realized correlation between asset prices than those implied by historical data series, and also by valuation issues.
  - VaR measures were less sensitive to increases in volatility than firms desired.
  - VaR as a backward-looking measure may never fully capture severe shocks that exceed historical experience
- Common problems observed
  - Use of historical AAA data series significantly under-represented the risk of super-senior CDO positions.
  - Impact of valuation issues (marking-to-market complex or illiquid assets) on accuracy of VaR calculations
  - Many firms did not fully capture basis risk.

# Need for update of first report



## Crisis significantly intensified during 2008

- Huge losses of financial institutes requiring recapitalizations
- Different significant “credit events”:
  - Northern Rock, Bear Stearns, Fanny Mae, Freddie Mac, ...
  - **“Trauma” of Lehman default**
- Disruption of inter-bank market due to loss of confidence provoking very severe (funding) liquidity situation for banks
- Increase of counterparty credit risk, sharp decrease of asset liquidity also in credit derivatives space, appearance of significant basis risk
- Enormous rescue programs by governments and central banks to support single financial institutes and the entire financial system
- End of independent investment banks and monoline insurers
- General broadening of crisis: sharp value declines and high volatility in equity, FX, interest rate space; commodities; emerging markets; corporate credit; emergence of significant losses due to basis risks; deepening of global recession, ...

# Risk management practices: 2<sup>nd</sup> lessons learned report



- Objective: Update to first SSG report (march 08) covering new observations and lessons learned since end of 07
- In November 08, a sample of large global firms were asked by the SSG to conduct a self-assessment exercise, in order to benchmark current governance and risk management practices against the recommendations and observations of industry and supervisory studies published in 08 (SSG, FSF, IIF, CRMPG)
- Firms completed self-assessments
- SSG member agencies performed interviews with selected firms to discuss lessons learned that firms have derived from the crisis and changes in their risk management practices since the issuance of the first SSG report
- SSG has aggregated the results and is analyzing conclusions.
- Publication of 2<sup>nd</sup> lessons learned report is planned for end of June 09.

# 2<sup>nd</sup> lessons learned: Preliminary results (1)



## **Governance**

- Firms have made significant improvements to governance and rate governance practices as closely aligned with recommendations.
- Exceptions include recommendations related to risk appetite, where most firms acknowledge some need for improvement, and incentive & compensations practices.
- Organizational changes have focused on strengthening the CRO position and stature and independence of risk management within the organization.

## **Liquidity**

- Firms have undertaken formal and informal steps to strengthen coordination between liquidity risk management, treasury, the business lines and other risk areas.
- Respondents have strengthened reporting and sought to improve internal transfer pricing and contingency funding practices, with more work remaining on both fronts.

## 2<sup>nd</sup> lessons learned: Preliminary results (2)



### Credit and Market Risk

- Firms responses suggest that identification of concentration risk is an area of weakness. Firms are looking to automate identification of concentrations by product, geography, and other classes.
- Firms lack the ability to aggregate exposure, particularly gross and net exposures to institutional counterparties, in a matter of hours.
- Firms lack the ability to fully integrate different risk strands (i.e. credit, market, operational, etc.) in their approach to risk management.
- Firms recognize that they have weaknesses in valuation and in ensuring consistent pricing across business lines and products.
- Firms do not always conduct systematic post-approval reviews or consider the systemic risk implications of new products
- Firms do not always consider whether risk of reputation damage could lead a firm to take exposures back on balance sheet.

## 2<sup>nd</sup> lessons learned: Preliminary results (3)



### **Risk Measures and Stress Testing**

- Firms report improved frequency, flexibility and an increased number of scenarios and risk types in their stress testing.
- Some firms have no comprehensive view on overall risks and cannot identify scenarios and risk factors that could render the firm insolvent. Also, it is not always clear from the firms' self-assessments how stress-testing results are used by management.

### **Market infrastructure**

- Firms reported progress in streamlining business processes toward the goal of same day matching; adopting and implementing standard technology platforms; and improving collateral management practices and reducing notional amounts of outstanding through portfolio compression.
- Follow-up topics include providing incentives for the buy-side to adhere to industry standards, ensuring interoperability of vendor solutions and escalating MTM disputes real time.

# Intended enhancements to the Basel II framework



- Better coverage of bank's risk exposures, including for trading book, securitisation, and derivative activities
- More and higher quality capital to back these exposures
- Countercyclical capital buffers and provisions that can be built up in good times and drawn down in stress
- The introduction of a non-risk based measure to supplement Basel II and help contain leverage in the banking system
- Higher liquidity buffers
- Stronger risk management and governance standards
- More regulatory focus on system-wide or macro-prudential supervision
- Greater transparency about the risk in bank's portfolios

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