



BANK FOR INTERNATIONAL SETTLEMENTS

**Financial Stability Workshop
October 17–18, 2007, Washington, D.C.
Agenda**

Day one

Headquarters 2, Conference Hall 2

9:00–9:15 a.m.

Introductory Remarks: John Lipsky (IMF)

Framework for Assessing Financial Stability

9:15–10:45 a.m.

1. *The Objectives of Financial Stability Work.* Chair: Henk Brouwer (DNB)

Speakers: William Allen (Cass Business School and Denholm Hall), Philipp Hildebrand (SNB), Andrew Sheng (CBRC).

- What are the goals of financial stability analysis?
- What can it achieve that analysis for other purposes (e.g., monetary policy, supervision, market conduct, economic policy) does not already cover?
- To what extent is efficiency enhancement relevant to financial stability work?

[Coffee Break:15 mn]

11:00 a.m.–12:30 p.m.

2. *The Conceptual Framework for the Assessment of Financial Stability.* Chair: John Lipsky (IMF)

Speakers: Jan Brockmeijer (DNB), Jaime Caruana (IMF), Charles Goodhart (LSE), Lars Nyberg (Sveriges Riksbank).

- What have we learned about where best to focus analysis and what work has been found most useful:
 - Structural determinants as compared with conjunctural drivers of stability risks
 - Stability of markets compared with stability of institutions
 - National stability issues compared with global stability issues
- What analytic tools are available for assessing the materiality of financial stability threats? Or for assessing the resilience of systems and their capacity to absorb shocks? Where is further research needed?



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Lunch: 12:30–2:00p.m. in Headquarters 1, Private Dining Room 3&4 (HQ1-02-316 & 320)

Keynote lunchtime speaker: Gerald Corrigan (Goldman Sachs)

2:00–3:30 p.m.

3. Metrics and Information Requirements in Financial Stability Assessment. Chair: William White (BIS)

Speakers: Hugo Banziger (Deutsche Bank), Darryll Hendricks (UBS), Nigel Jenkinson (Bank of England), Patrick Parkinson (Federal Reserve Board).

- What indicators and tools have proven useful? What data best describe the main drivers of financial stability risks? What data are needed for assessing the likely resilience of the system in a crisis?
- To the extent data are based on financial reports, do existing accounting and auditing practices allow adequate stability assessments to be made, including international comparisons?
- How to balance quantitative indicators and judgment?
- What are the main data gaps in developed and in emerging market systems for financial stability assessments? What role could the IFIs and other international bodies play in this respect?

[Coffee Break:15 mn]

3:45–5:00 p.m.

4. The Multilateral Dimension to Financial Stability Analysis. Chair: Jaime Caruana (IMF)

Speakers: Mauro Grande (ECB), Pascual O'Dogherty (Banco Central de Mexico), Avinash Persaud (Intelligence Capital).

- Incorporating global capital markets, cross-border capital flows and financial linkages in financial stability assessments. Is more effort needed to make data more internationally consistent, or are the uses to which data can be put not yet sufficiently developed to make this a priority?

Dinner: 7:00–9:00 p.m. in Headquarters 1, Reception Hall (HQ1-02-307)

Keynote speaker: Timothy F. Geithner (President and Chief Executive Officer, Federal Reserve Bank of New York)



BANK FOR INTERNATIONAL SETTLEMENTS

Day two

Headquarters 2, Conference Hall 2

Promoting Financial Stability and Mitigating Systemic Risks:

Policy Instruments and Coordination

8:30–10:30 a.m.

Introductory/keynote speaker: Donald Kohn (Federal Reserve Board)

5. How to Relate the Conclusions of Financial Stability Assessments to Policy Measures.

Chair: Jean Pierre Landau (Banque de France)

Speakers: Kristin Gulbrandsen (Norges Bank), Akinari Horii (Bank of Japan), David Strachan (UK FSA).

- Linking stability threats to policy response instruments
- Policy measures to address potential financial instability: built-in stabilizers vs. discretionary adjustments. Preparing options for ex post crisis response.
- Possible instruments and their coordination: monetary policy; supervision and regulation; interaction with, and constraints from, accounting and taxation.
- Balance between regulation/supervision and market discipline.
- How could a financial stability perspective be embedded in the responsibilities of monetary policy makers and prudential supervisors?
- How can one effectively communicate financial stability developments and related policy steps? Role, content and target audience of Financial Stability Reviews.

[Coffee Break:15 mn]

10:45 a.m.–12:00 p.m

6. Promoting Effective and Coordinated Responses to Financial Stability Risks.

Chair: Malcolm Knight (BIS)

Speakers: Junichi Maruyama (Japan FSA), Jose Maria Roldan (Banco de España), David Wright (European Commission).

- Institutional arrangements for domestic cooperation among national authorities in financial stability policymaking.
- Arrangements for international cooperation on exchange of information, comparing assessments and coordinating policy actions.
- The role of, and interactions with, the private sector.



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Day two (continued)

12:00–1:30 p.m.

7. Closing Panel

Chair: Mario Draghi (FSF)

Panellists: Mark Carney (Canadian Department of Finance), Jean-Pierre Mustier (Société Générale), Annette Nazareth (U.S. Securities and Exchange Commission).

8. Wrap-up Malcolm Knight (BIS)

Buffet lunch @ 1:30 p.m. in Headquarters 1, Reception Hall (HQ1-02-307)



BANK FOR INTERNATIONAL SETTLEMENTS

**Financial Stability Workshop
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Participants List**

Mr. William Allen

Director
Denholm Hall
and
Visiting Fellow
Cass Business School, City University

Mr. Svein Andresen

Secretary General
Financial Stability Forum

Mr. Hugo Banziger

Chief Risk Officer
Deutsche Bank AG

Mr. Claudio Borio

Head of Research and Policy Analysis
Bank for International Settlements

Mr. Jan Brockmeijer

Director, Financial Stability
De Nederlandsche Bank

Mr. Henk Brouwer

Executive Director
De Nederlandsche Bank

Mr. Mark Carney

Senior Associate Deputy Minister and G7 Deputy
Canadian Department of Finance

Mr. Giovanni Carosio

Deputy Director General
Bank of Italy

Mr. Jaime Caruana

Director, Monetary and Capital Markets Department
International Monetary Fund

Mr. E. Gerald Corrigan
Managing Director
Goldman Sachs and Co.

Mr. Mario Draghi
Chairman
Financial Stability Forum

Mr. Pierre Duguay
Deputy Governor
Bank of Canada

Mr. Timothy F. Geithner
President and CEO
Federal Reserve Bank of New York

Mr. Hans Genberg
Executive Director, Research
Hong Kong Monetary Authority

Mr. Gerald Goldstein
Director, Research
Office of the Superintendent of Financial Institutions, Canada

Ms. Brenda González-Hermosillo
Deputy Division Chief, Monetary and Capital Markets Department
International Monetary Fund

Mr. Charles Goodhart
Programme Director, Regulation and Financial Stability
London School of Economics and Political Science

Mr. Mauro Grande
Director, Financial Stability and Supervision
European Central Bank

Ms. Kristin Gulbrandsen
Executive Director, Financial Stability
Norges Bank

Mr. François Haas
Senior Economist, Monetary and Capital Markets Department
International Monetary Fund

Mr. Eugen Haltiner
President
Swiss Federal Banking Commission

Mr. Darryll Hendricks
Managing Director
Global Head, Quantitative Risk Control
UBS AG

Mr. Philipp Hildebrand
Vice Chairman of the Governing Board
Swiss National Bank

Mr. Akinari Horii
Assistant Governor
Bank of Japan

Mr. Nigel Jenkinson
Executive Director, Financial Stability
Bank of England

Mr. Michael Klein
Vice President, Financial and Private Sector
International Finance Corporation

Mr. Malcolm Knight
General Manager
Bank for International Settlements

Ms. Laura Kodres
Division Chief, Monetary and Capital Markets
International Monetary Fund

Mr. Donald Kohn
Vice Chairman
Federal Reserve Board

Mr. Jean-Pierre Landau
Second Deputy Governor
Banque de France

Mr. John Lipsky
First Deputy Managing Director
International Monetary Fund

Mr. Junichi Maruyama
Deputy Commissioner for International Affairs
Japan Financial Services Agency

Mr. Arthur Murton
Director, Division of Insurance and Research
Federal Deposit Insurance Corporation

Mr. Jean-Pierre Mustier
Chief Executive Officer
Société Générale Corporate and Investment Banking

Ms. Annette Nazareth
Commissioner
U.S. Securities and Exchange Commission

Mr. Lars Nyberg
Deputy Governor
Sveriges Riksbank

Mr. Pascual O'Dogherty
Director, Financial System Analysis
Banco Central de Mexico

Mr. Patrick Parkinson
Deputy Director, Research and Statistics
Federal Reserve Board

Dr. R.K. Pattnaik
Adviser, Department of Economic Analysis and Policy
Reserve Bank of India

Mr. Patrick Pearson
Head of Unit, Banking and Financial Conglomerates
European Commission

Mr. Avinash Persaud
Chairman
Intelligence Capital Limited

Mr. Peter Praet
Executive Director, International Cooperation and Financial Stability
National Bank of Belgium

Ms. Imène Rahmouni
Head of Financial Stability and Markets Research Division
Banque de France

Mr. José Maria Roldan
Director, General Banking Regulation
Banco de España

Mr. William Rutledge
Executive Vice President, Bank Supervision Group
Federal Reserve Bank of New York

Mr. Andrew Sheng

Chief Adviser to China Banking Regulatory Commission
and
Adjunct Professor, University of Malaya and Tsinghua University, Beijing

Mr. Giuseppe Siani

National Detached Expert, Banking and Financial Conglomerates
European Commission

Mr. Daniel Sigrist

Vice-Director, Large Banking Groups
Swiss Federal Banking Commission

Mr. Erik Sirri

Director, Division of Market Regulation
U.S. Securities and Exchange Commission

Mr. David Strachan

Director, Major Retail Groups Division
U.K. FSA

Mr. Rupert Thorne

Member of Secretariat
Financial Stability Forum

Mr. Hung Q. Tran

Senior Director, Capital Markets and Emerging Markets Policy Department
Institute of International Finance

Mr. John Walsh

Chief of Staff and Public Affairs
Comptroller of the Currency

Mr. William White

Head of Monetary Economic Department
Bank for International Settlements

Mr. David Wright

Director, Financial Services Policies and Financial Markets
European Commission

The objectives of financial stability work

Bill Allen

Denholm Hall and City University

Financial Stability Workshop

17 October 2007.

The goals of financial stability analysis

- Public authorities are responsible for financial stability policy.
- What are objectives of financial stability policy for public authorities?
 - Making financial crises less likely.
 - Reacting to financial crises.
- What are objectives for private sector?
 - Risk management before crisis.
 - Profit opportunities during and after crisis.

Is financial stability analysis a distinct function?

- What's special about financial crises?
 - Definition: episodes in which a large number of parties have their access to money sharply reduced.
 - Distinguished by
 - Discontinuity.
 - Unexpectedness.
 - Potential contagion.
- Financial crises are a distinctive problem.
- Is financial stability a separate policy function?

Crisis prevention

- Crisis prevention works by creating incentives to behave in ways which makes a crisis less likely – ie prudence, caution.
- Infrastructure: affects incentives and behaviour.
 - Physical: payment systems, settlement systems, etc.
 - Metaphysical: law, accounting standards, etc.
- Trade-offs between financial stability and other objectives (eg bankruptcy law).
- Financial stability prevention can't be delegated to autonomous agency.

Questions – crisis prevention

- Should a government agency be responsible for identifying financial stability implications of proposed legislation and regulation?
- Is it desirable for central banks etc to identify financial stability risks and warn market of them?
 - Public service.
 - Moral hazard?
 - Risk to central bank's reputation if it warns.
 - Risk to central bank's reputation if it doesn't warn.
 - 'Innocent bystanders' v professionals

Reacting to financial crises

- Principles are simple, application is difficult.
- Trade off between macro and social objectives and moral hazard.
- One problem is measuring moral hazard: eg did the ECB and the Fed create moral hazard by liquidity provision in August? If so, how much?
- Another problem is macro forecasting in period after a crisis.
- Is ambiguity desirable? Should official support be predictable?

Question: should reacting to crises be a central bank function?

- Pro:
 - Central bank is natural lender of last resort.
 - Central bank has access to market information through own dealing function.
 - Monetary policy is possible response to financial crisis.
- Con:
 - Central bank can't commit public money.
 - Trade-off between financial stability and other policy objectives can't be judged by central bank?
 - Central bank responsible for monetary policy + crisis management would be very powerful.
- Can responsibility for crisis management be effectively shared among agencies?
- How do central banks make crisis management decisions? Some have boards, but what is role of MPCs?

Financial Stability: Objectives of Central Banks and Challenges

Philipp M. Hildebrand
Vice-Chairman of the Governing Board
Swiss National Bank
October 2007

Objectives of Central Banks

Contribution to the maximization of economic welfare

- by providing price stability
- while taking into account the real economy.

Financial stability as a secondary objective, as it

- facilitates monetary policy
- affects the real economy directly.

Central Banks Have Traditionally Dealt with Financial Stability

- As a lender of last resort
- As a participant in the money market
- As a reserve manager
- As a provider of clearing and settlement services
- As an overseer of these systems

Best Practices in Central Banking

- Transparency about central bank actions and goals
- Reporting on the financial system
- Target short-term interest rate

I. Excessive Transparency?

- Transparency is clearly beneficial in normal times
- But, may transparency be counterproductive in crises?



Transparency About LoLR

- Ex ante transparency about policy
- May covert action (“constrained transparency”) during crises be beneficial?
- Ex post transparency about support measures

II. Central Bank Communication in Crisis

- Channels of central bank communication about financial stability: Financial Stability Reports, interviews, speeches, etc.
- In normal times, provision of frank assessment is not problematic
 - How far should we go (“leaning against the wind”)?
- In times of crisis, being frank about the banks’ vulnerabilities may aggravate the problems
- Being too optimistic may impair central bank’s reputation

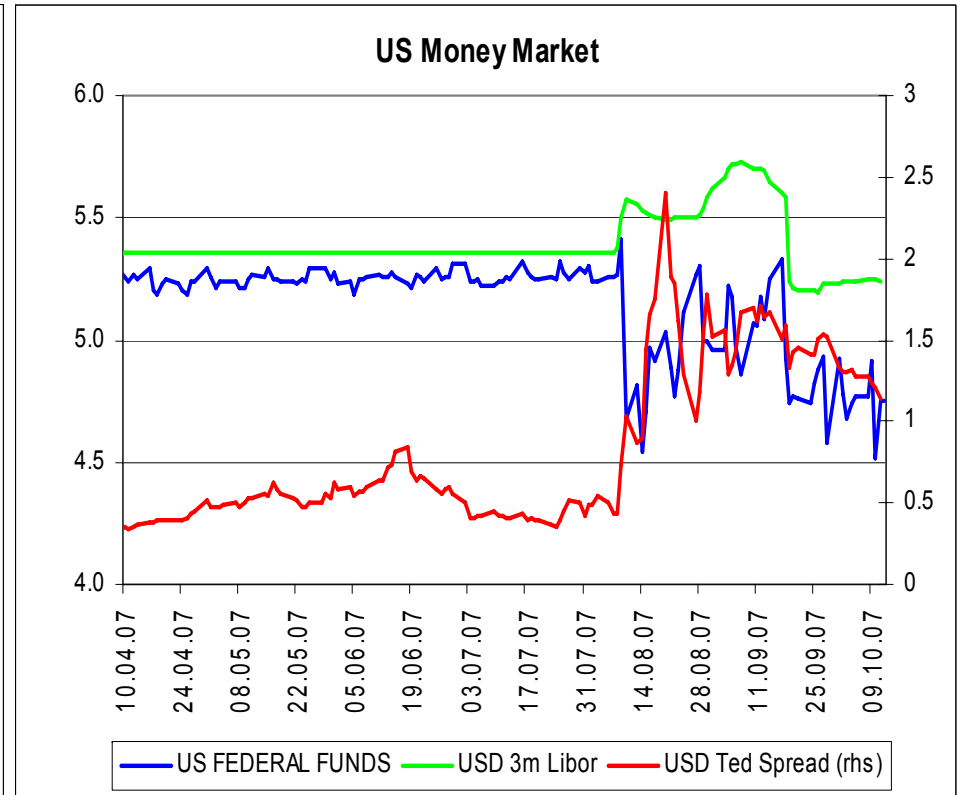
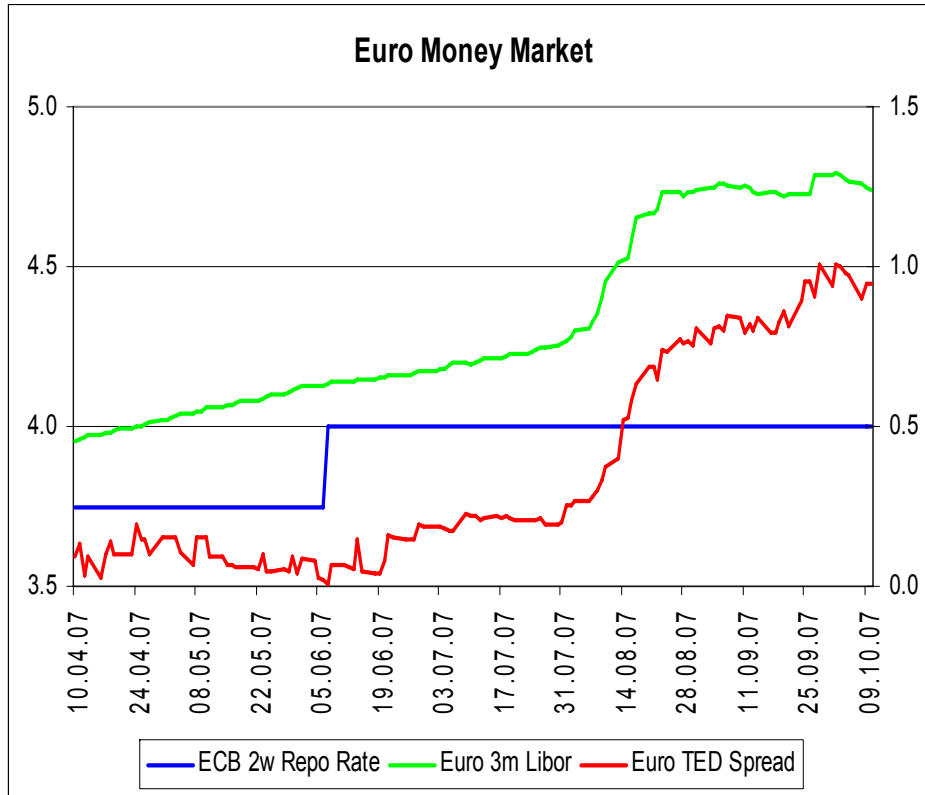
One Promising Approach

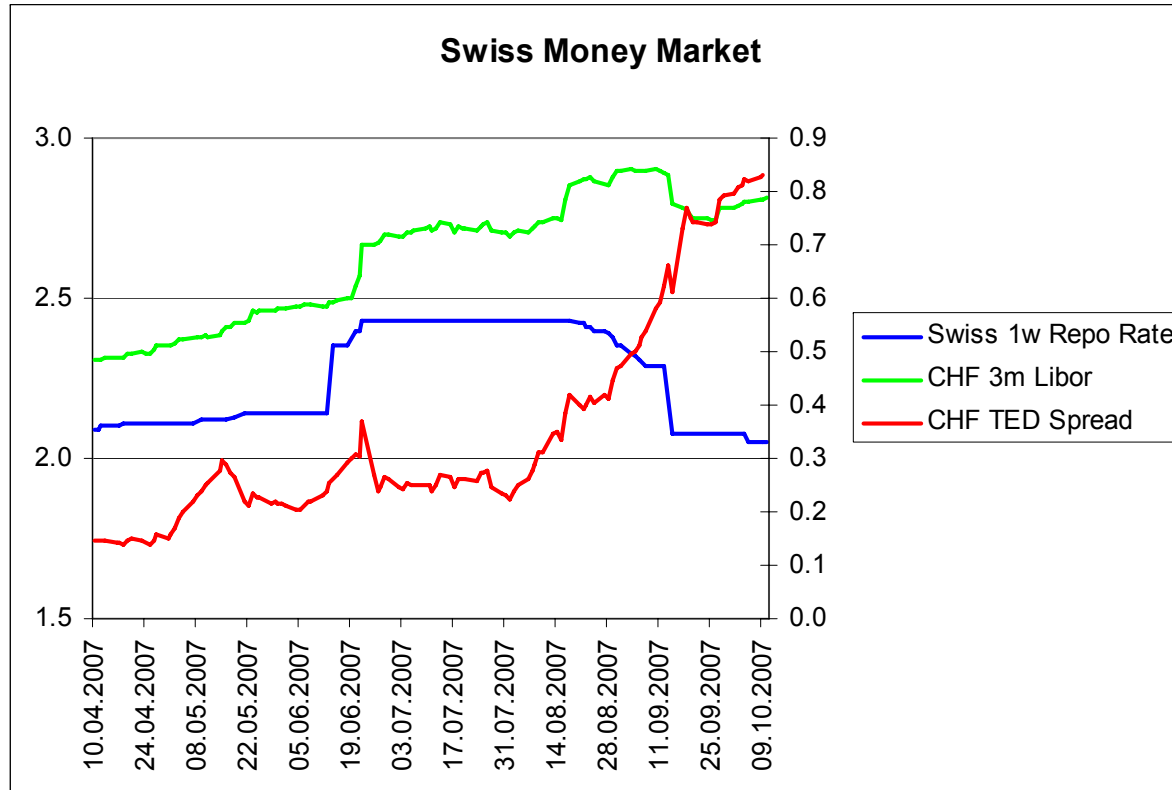
- Build up credibility in normal times as well as in crises.
- Leverage on this credibility in crisis in order to avoid panic and calm markets.

III. The Optimal Target Rate

In recent turbulences

- target rates based on an interbank rate (for uncollateralized loans) fluctuated widely due to sudden changes in the risk premium (e.g. Fed, SNB)
 - target rates that are central bank rates became disconnected from interbank rates (e.g. ECB)
- ⇒ Effective stance of monetary policy is no longer reflected in the official target rate.





**IMF/WORLD BANK ANNUAL MEETINGS
Washington 17-18 October 2007**

FINANCIAL STABILITY WORKSHOP

Panel I: The Objectives of Financial Stability Work

Financial Stability – promoting public understanding of the financial system

by

**Andrew Sheng¹,
Chief Adviser,
China Banking Regulatory Commission**

I want to thank Jaime Caruana and the IMF, Mario Draghi of the Financial Stability Forum and Malcolm Knight of the BIS for the kind invitation to join this illustrious panel, with my good friends Bill Allen and Philipp Hildebrand, both eminent central bankers who have deep knowledge of financial markets.

To discuss the objectives of financial stability work, we must attempt a definition of what is financial stability. Gary Schinasi (2004) at the IMF has defined financial stability in terms of its ability to facilitate and enhance economic progress, manage risks, and absorb shocks. The Fund sees financial stability as part of three pillars – sound macro-economic policies, effective regulation and enforcement, and robust and efficient institutional framework. The Global Financial Stability Map is drawn in terms of risks and conditions. Due to the complexity of the concept, Schinasi rightly concluded that there is no single target variable to define and achieve financial stability.

Nevertheless, much has been done since the Asian crisis in the area of financial stability work, which included: -

1. The establishment of the Financial Stability Forum to coordinate financial stability issues globally, and work of the IMF in the Global Financial Stability Reports, which are supplemented by Financial Stability Reports at the national level;
2. Thanks to support by the BIS, OECD and other international financial institutions, the financial regulators and standard setters have articulated the core principles of regulation and minimum standards and rules should be embodied in good regulation and governance, including standards of conduct and transparency.
3. The accounting and auditing standards and practices have been tightened, and supervision in areas such as insurance, re-insurance, money laundering and cross-border financial crime have considerably improved.
4. There is significant progress in the area of public-private cooperation to improve the robustness and interconnectivity of financial infrastructure (such as payment and clearing systems) and also the laws and procedures regarding insolvency.

¹ The views expressed in this note are personal to the author and not those of the CBRC.

5. Most regulators are working hard at the oversight and consolidated supervision of complex financial institutions and trying to get a grip on risks of connected lending and complex non-financial corporations.
6. Everyone is continuing to improve the methodology and assessment of financial stability, breaking down the macro-prudential components and trying to get to grips with operational targets.

All these are commendable achievements, but as we have recently witnessed from the sub-prime related liquidity crisis, risks can be transferred but have not gone away. They have surfaced in areas that even the most sophisticated institutions and markets have been caught by surprise. If anything, even with the tremendous improvements in transparency, we have less understanding of a number of fundamental issues.

As we are currently in a Dickens' best and worst of times, I think it may be useful to step back completely and think through what we are trying to achieve in pinning down the illusive concept of financial stability, using an institutional and behavioural approach. The perennial dilemma of central bankers is how to manage change with stability and manage stability with change.

An Institutional Approach

On closer reflection, what we are actually trying to do is to measure the stability of financial property rights, because the financial system is a system that delineates, trades and protects property rights. Since finance is a derivative of the real sector, ultimately we are trying to measure the stability of real property rights. However, the relationship between a derivative and the underlying asset depends on time (duration), leverage, relative prices, such as interest rate, exchange rate, consumer prices and asset prices and other factors. It is difficult to determine financial stability, as we still do not have a good understanding of the overall relationship between financial markets and the real sector, even though we have tried mathematically to model the relationship for specific derivative assets.

The first remarkable feature of the global financial system is how the balance sheets have grown exponentially in the last few decades. Together with economic growth, financial innovation and overall global stability (no major wars or natural disasters), the stock of financial wealth has grown from 108% of GDP in 1980 to 395% of GDP in 2006 and is still growing. Indeed, the notional value of OTC financial derivatives has reached 861% of global GDP, with the gross market value at 20% of global GDP². In other words, gross financial assets and liabilities are expanding faster than real economic growth.

Unfortunately, we do not have as yet a sufficiently long time series to see whether the notional value or gross market values of OTC financial derivatives could shrink quickly under stress through de-leveraging. Nor do we have an appreciation how such shrinkage would impact on institutional solvency and liquidity. Of course, these numbers look large because we are dealing with gross balance sheet numbers, not necessarily net wealth. As net international positions also become available through the Lane-Milessi work, we are able to appreciate, for example, that roughly NIP deficit ratios of more than 50% of GDP would signal significant vulnerability to currency crisis.

² Calculated from data from Global Financial Stability Report, September 2007, Appendix Tables 3 & 4. Gross credit exposure of OTC financial derivatives is much less at US\$2,045 billion, but still 2.9% of total global bank assets.

Gross balance sheets generally expand with the degree of leverage through the willingness of creditors to hold other people's debt. As we begin to construct national and sectoral balance sheets, we are able to have a better appreciation of vulnerabilities at the sectoral level. We do know from history that if one sector becomes over-leveraged, sharp changes in confidence can cause de-leveraging or liquidity shocks that end up with financial crisis.

In the last few decades, leverage for the global financial system as a whole has tended to increase rather than decrease globally, this being true particularly of the household sector. Through derivatives and financial innovation, the corporate and banking sectors have deleveraged themselves by passing their assets or liabilities to the household sector with consequences that neither the retail investors nor regulators have fully understood. After the recent liquidity problems, the regulators are also unclear whether the banks have truly passed off their liabilities or have assumed new risks³.

The second feature is that total turnover of financial instruments has grown in leaps and bounds, because the transaction costs or frictional costs of trading property rights have declined due to financial liberalization, innovation, information and communications technology (ICT) and the deliberate removal of trade and financial barriers. That acceleration in turnover in foreign exchange, equity markets, and derivatives is perhaps only the beginning, since a large part of the world have only just begun to join the market world and their share of global wealth and transaction level is increasing. For example, barring major changes, the wealth of the Third World, led by China and India, must surely grow both in absolute and relative terms.

Thirdly, despite greater financial education, especially in economics, the world is still suffering from money illusion. We trade derivatives so much that we appear to create value by inflating paper money, and even though wealth has been created by growth in the underlying real assets, such real growth has been slower than financial growth. Hence, I interpret the rise in commodity and real asset prices as a devaluation of financial assets, the supply of which has been increased or derived through financial innovation as fast as investors are willing to hold them.

The fourth aspect with respect to financial stability is that technical specialization in the division of labour on financial stability has reached a level where we are beginning to have a "silo" or segmented and somewhat myopic view of the world. I continue to be amazed that some central bankers still hold the belief that the only thing that matters to them is low consumer prices, when the world around them is literally popping with bubbly asset prices. We really need to get back to a more holistic view of macro-policy, rather than a narrow view that if we somehow only target money supply, which we have difficulty defining operationally, we can change market behaviour.

Taking this 30,000 feet look at the state of financial system, I come to the odd conclusion that financial stability is both a *condition* of institutions and markets (since the market is also an institution), as well as a *state of mind*. We value financial stability of institutions and markets because the *raison d'être* of financial institutions is to try to protect or conserve value or property rights, while markets trade such property rights. Financial shocks, crisis, volatility, crime or acts of god destroy value

³ See Center for Audit Quality White Papers on accounting for subprime papers at www.thecaq.org/members/alerts/CAQAlert2007_51_10032007.pdf

or redistribute such losses in unpredictable or unfair fashion. In order to prevent individuals or institutions misappropriating property rights or changing the predictability of property rights, we have rules and regulations, which are then enforced to try and ensure the stability of property rights. Quite rightly, we must look at individual institutions, as well as sectors, to examine how their behaviour could generate instability and are transmitted to other institutions and sectors.

Financial stability is also a state of mind, because we are dealing with the psychology of people and crowds, something that economists are finally beginning to deal with seriously. Central bankers used to call this confidence, but as transparency and accountability has become the fashionable words, we have forgotten how frail public confidence can become in bubbly times. Taffler and Tuckett (2007) argue that “The solution to financial crises will not easily be found in increased regulation, more transparent information or cuts in interest rates. Understanding the part emotions play in all investment activity should concern central banks, market regulators - and us all⁴”.

We should therefore ask ourselves seriously why investors and depositors should be nervous in a time of plenty and financial boom, as well as greater information disclosure. The more I think about it, the more I feel that the transparency and accountability that we have promoted in the last decade has been “information push”, to ensure that issuers and intermediaries make such information available to the public. The result is huge information overload and misunderstanding on the part of new investors that is probably at the root of current market nervousness. In other words, there is a huge disconnect between information content of highly complex financial markets and the ability of the public to comprehend them. My preliminary thoughts are along the following lines: -

- First, information transparency and availability does not mean that the public “gets it”, that is, they fully understand all the risks, fine print, disclaimers and technical assumptions that intermediaries and issuers push out to the market. The reason why blanket guarantees are necessary is, speaking as a bank regulator who had to deal with bank runs as early as 1986, is that the man in the street expects his government to protect his principal savings and not to be given 90 cents on the dollar after the fact. There is perhaps an unspoken social contract on the sanctity of bank deposits that goes right into trust in the social system itself.
- Second, after a long period of boom and prosperity, a number of investors may have realized that market leverage and risks are much too high for their own comfort and that they would like to sleep easier with secure assets, hence the flight to commodities and real estate.
- Thirdly, since most retail investors do not understand derivatives and complex financial markets, there is an underlying suspicion that specialist institutions that have a knowledge advantage over them would come in, trade markets up and down, and eventually pass the baby to the “hindmost” retail investors who are gullible and vulnerable to such market volatility. Within Asia, for example, there

⁴ Richard Taffler and David Tuckett, “How a state of mind abets market instability”, Financial Times, September 21 2007

is still a lack of trust of derivatives and hedge funds precisely because many do not comprehend how money is being made through these new quantitative tools. The derivative markets in Asia are still generally plain vanilla and limited to very specialist traders.

- In sum, at the heart of the issue therefore is whether the financial community, including the regulators, in promoting market development and innovation, may have done enough to “promote public understanding of the financial system”, especially since markets have become so complex.

Given the fact that we are dealing with both concrete institutions and ephemeral psychology, the goals of financial stability are therefore both complex and dynamic. Stability is not a static or rigid condition, because the institutions and markets are continually evolving, changing and adapting to different forces and risks. Institutions, as Douglass North says, are continually in the process of change.

There are good reasons to argue that we seem to be in a period of market behaviour that is less predictable than before. If we are all uncomfortable with the levels of leverage, particularly below the line liabilities and how to value them, then all the energies and skills devoted to improving capital under Basel II and IFRS may not be adequate to cushion the markets and institutions against external shocks. Indeed, as a former central banker, I found it incredible that in August, central banks should have to provide liquidity in a world that appears to be awash with excess liquidity to banks that were technically liquid, but were de facto illiquid.

This situation reminds me of the hairsplitting technical definition of SPVs as being legally independent of Enron, when they should have been consolidated with Enron. Perhaps because the market has tried very hard to quantify risks and create complex products in order to transfer such risks, the market is beginning to operate under a “technical illusion” of precision, based on many assumptions or disclaimers that turned out to at best very shaky and at worst wrong. It was the fear of the unknown that generated the self-protecting investor reaction of reluctance to trade or invest in products that are difficult to price.

At this stage of the economic cycle, the regulators should be particularly conscious, as Charles Goodhart has pointed out, whether the new IFRS and Basle II rules are pro-cyclical in nature. Perhaps pro-cyclicality is unavoidable because it is the nature of human beings to be optimistic when the market is on the up, and to be cautious when the cycle turns.

So where do we go from here in fostering financial stability work?

Charles Goodhart (September 2007) has suggested that “rather than a blanket call for more regulation, we should ask what information is required to keep markets operating efficiently, and how to get it. In trying to answer the Goodhart question on what types of information should we have a grip on, I would include some key definitions that regulators have to grapple with.

The questions need to be posed at two levels. First, there is the conceptual and operational level of “what operational indicators” could be developed to have a handle on the important areas of risks to financial stability. Second, the regulatory community should take the more pragmatic approach of undertaking a forensic inspection or analysis of how innovative financial products end up in whose hands

and through what degree of leverage⁵. There is no substitute for some serious forensic post-mortems to look at how sub-prime risks spread through the system. Such work will require the cooperation of different regulators and across markets. Specifically, I would be curious whether and how some financial products can slide from speculative financing to Ponzi-type financing without the investing public or the regulators catching on.

On the area of operational indicators of financial stability, my own feeling is that we need to have the following:-

- (a) A workable macro-measure of the “layer of leverage”, meaning the more the layering of derivatives from underlying asset to derivative, the more opaque the value, the more complex the relationship and probably the degree of risk that is extended from the issuers and intermediaries to the ultimate holder.
- (b) A workable measure or measures of liquidity that can be defined more operationally. Liquidity seems to be defined differently by central banks, investors, issuers and intermediaries. Without such a definition and standard, it would be tough to measure the risks embedded in the derivative markets where liquidity can disappear overnight.
- (c) A better understanding of below-the-line liabilities and how much capital and liquidity really should be necessary for such liabilities.
- (d) Some examination of the macro-economic implications of IFRS and Basle II to consider whether they would add to pro-cyclicality and by how much.
- (e) An examination of the role of credit rating agencies in order to restore credibility of the rating system, including amelioration of the incentives to over-rate and underplay the risks involved in so-called AAA products.
- (f) More work on monitoring public understanding of the financial system and better feedback and study on the behavioural aspects of investors.

As we have recognized in risk management work, the fundamental issue ensuring financial stability ultimately is the quality of institutional governance. And within governance, the key is institutional values, transparency and incentives. Since markets are alternately driven by greed and fear, the incentive structure for financial stability must therefore balance between efficiency, robustness and transparency, as well as the public trust.

To conclude, the more I study recent developments in financial markets, particularly its behavioural aspects, the more I feel that the financial stability game is very much like the Tragedy of the Commons Dilemma. How do we ensure that individuals and institutions do not erode or destroy the public good of financial

⁵ For example, it would be useful to know the counterparty data for Credit Default Swaps, similar to that report for Foreign Exchange and Interest Rate OTC derivatives, where roughly 22% and 13% are laid-off to nonfinancial customers respectively (GFSR September 2007, Table 5).

stability because of excessive greed or taking excessive risks? The informational aspect of market behaviour, between information push and “getting it” is an area that clearly deserves more study and scrutiny.

14 October 2007.

References: -

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A policy framework for the assessment of financial stability

Jan Brockmeijer

De Nederlandsche Bank

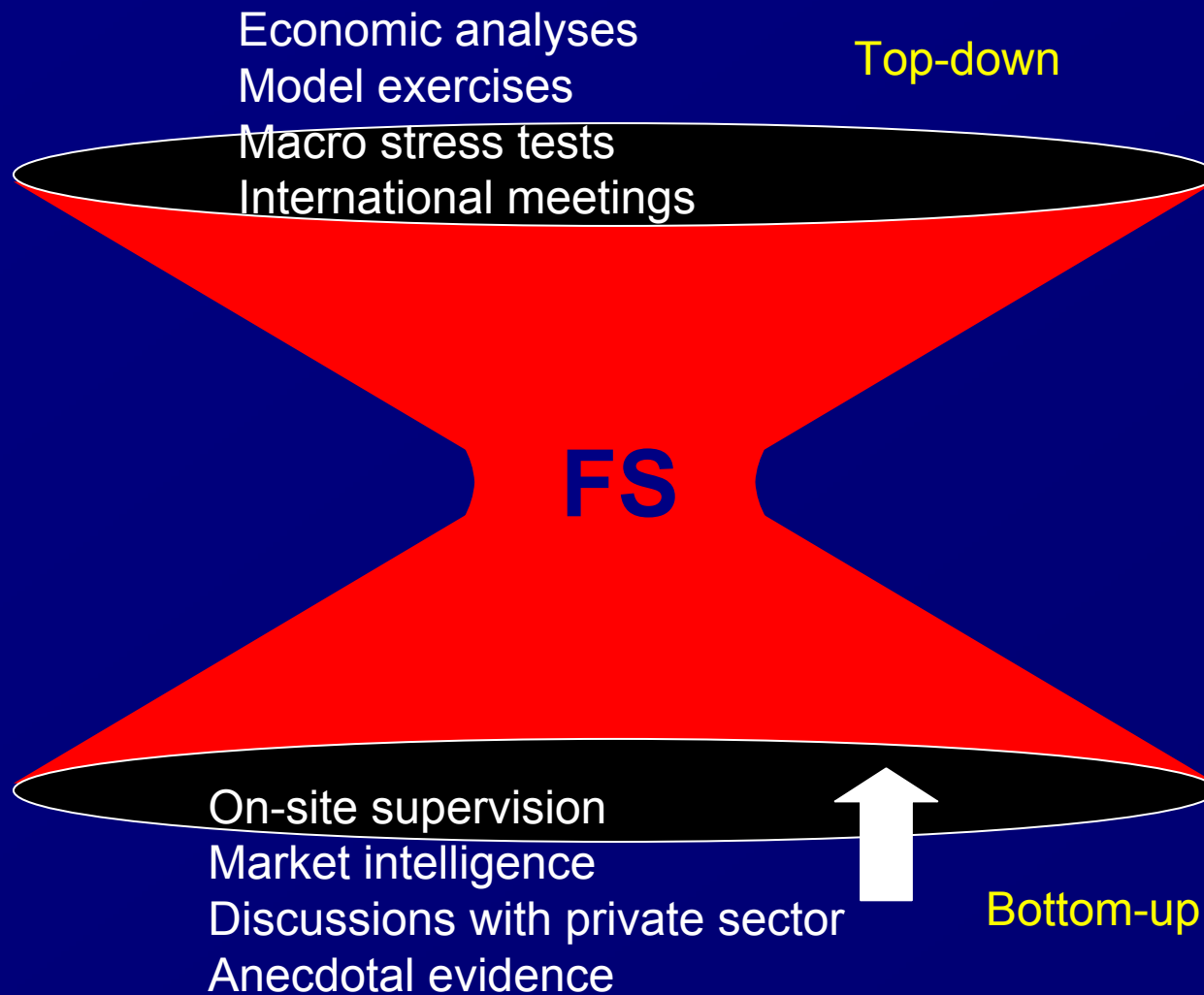
Washington, 17 October 2007

Characteristics policy framework

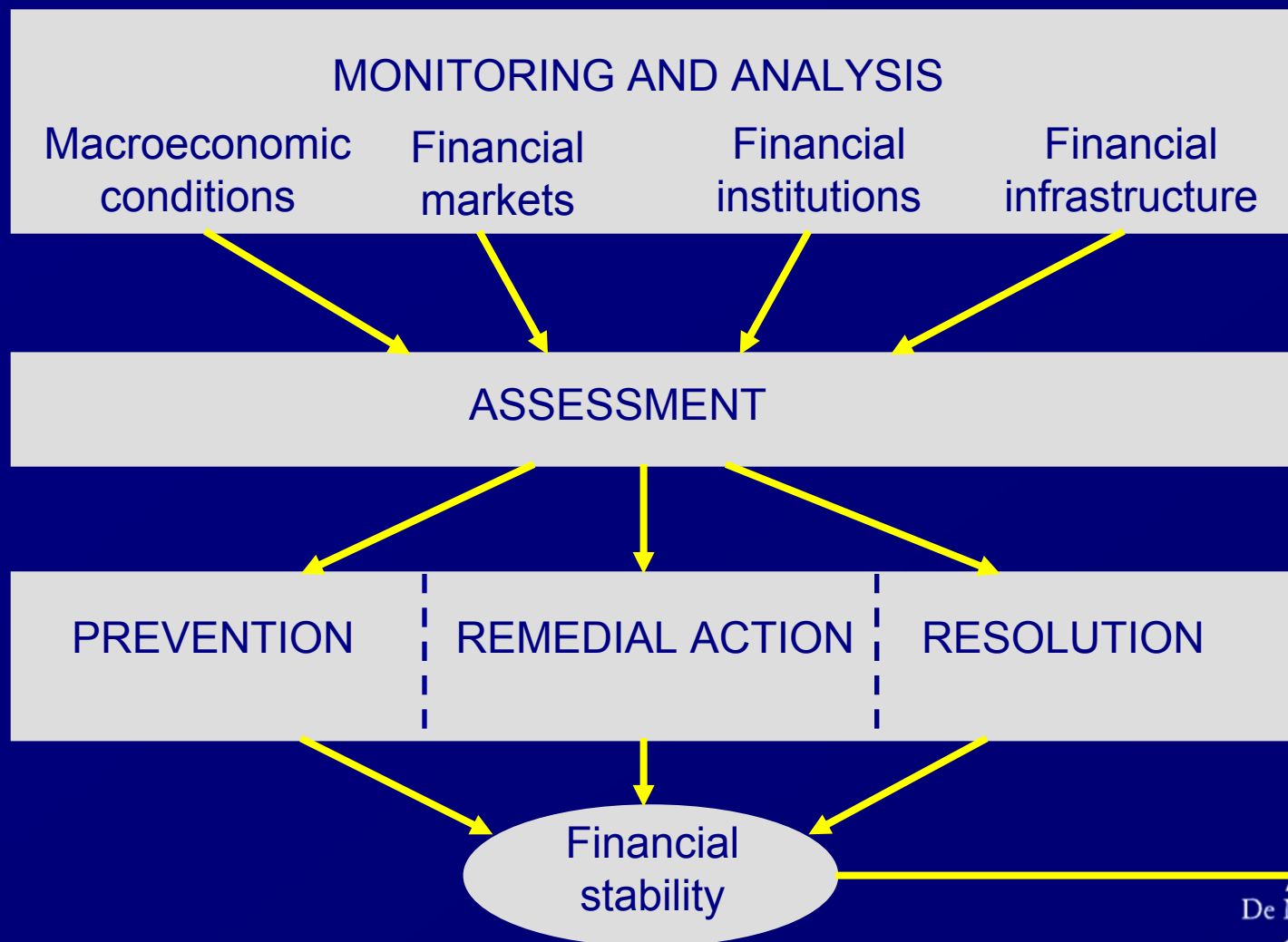
A policy framework should be ...

- Risk-based
- Flexible
- Focused
- Inclusive
- Forward-looking

Implementation



Implementation



IMF/FSF/BIS FINANCIAL STABILITY WORKSHOP

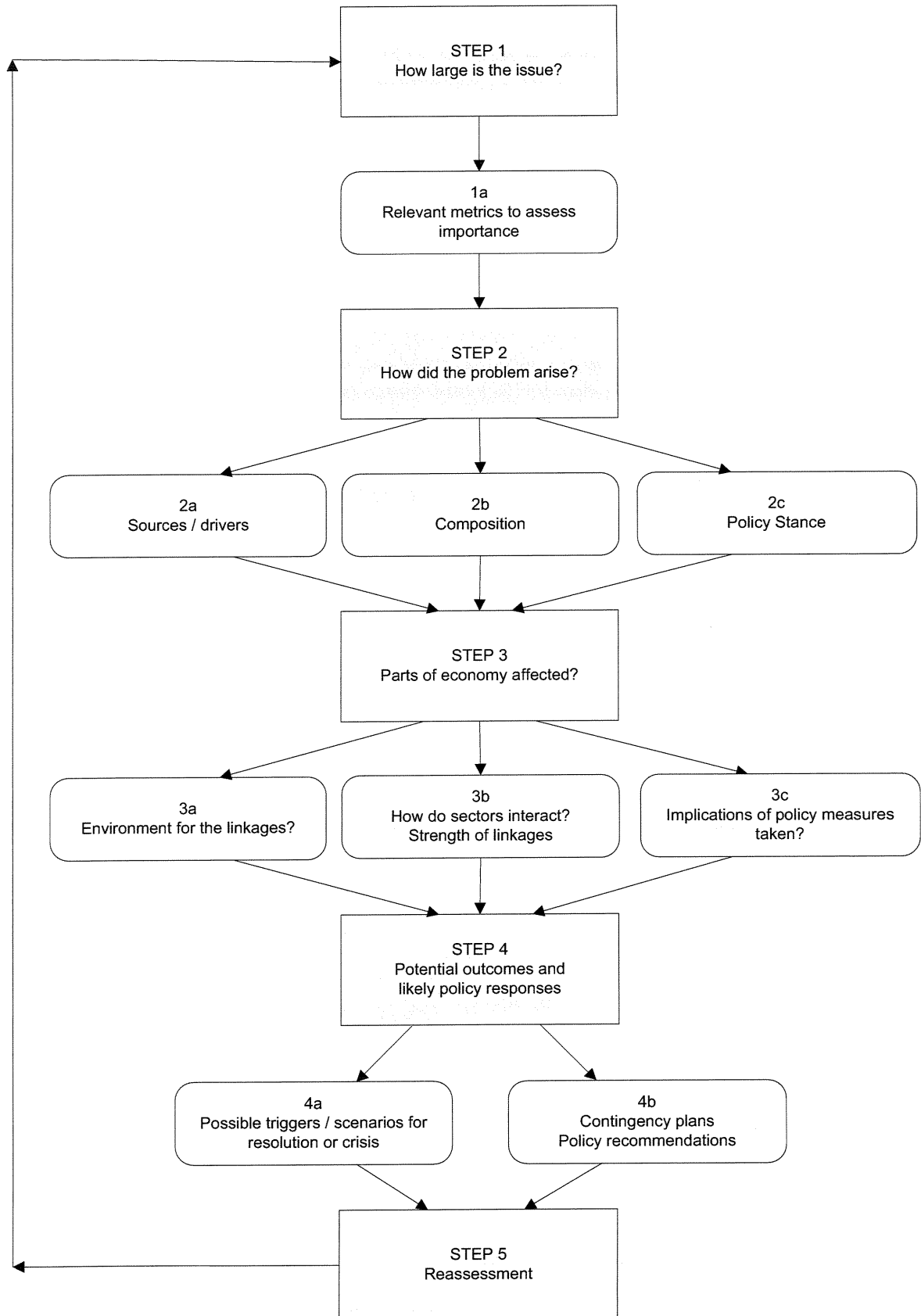
WASHINGTON D.C., 17-18 OCTOBER 2007

JAIME CARUANA

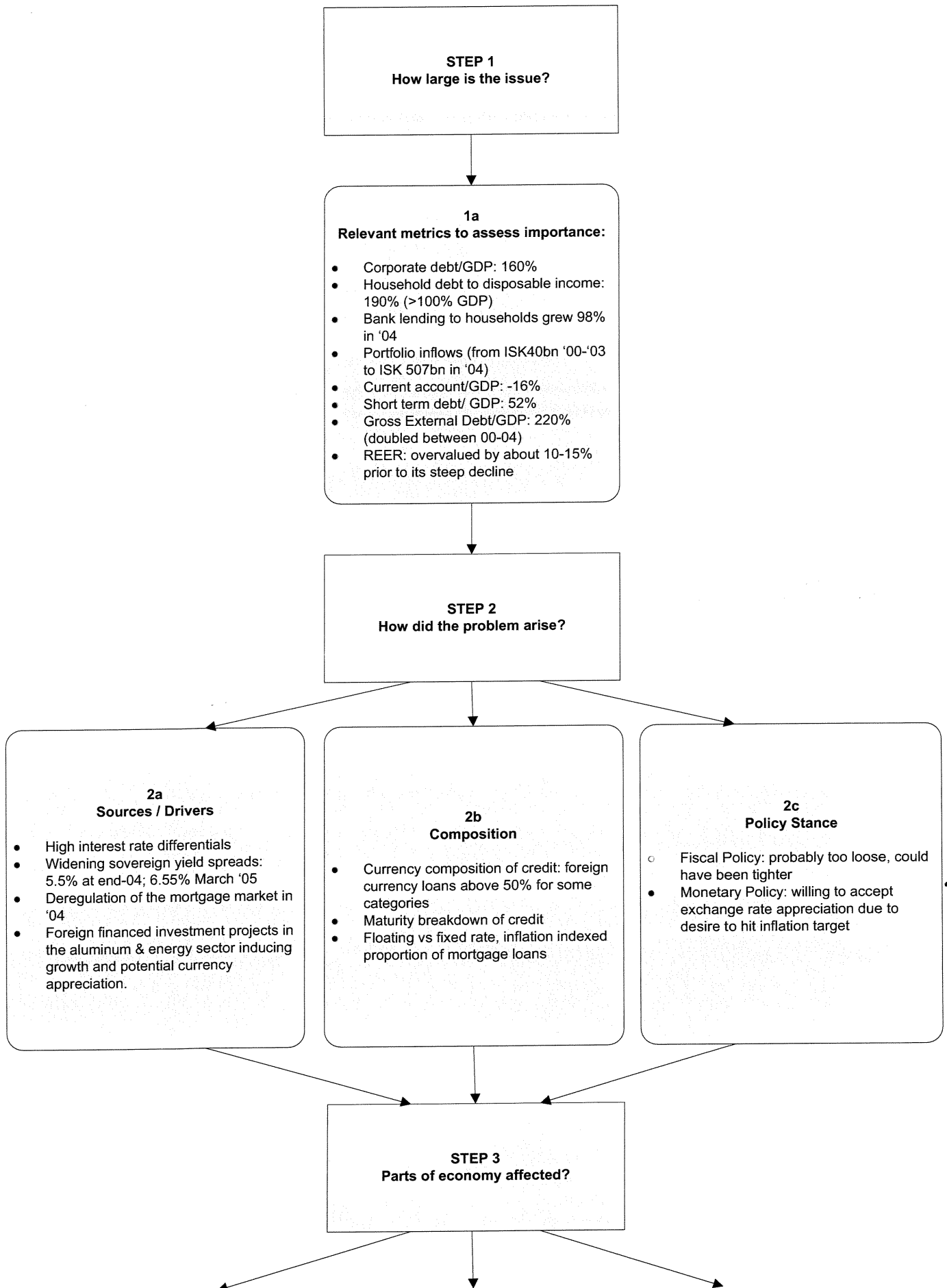
HANDOUT FOR SESSION 2

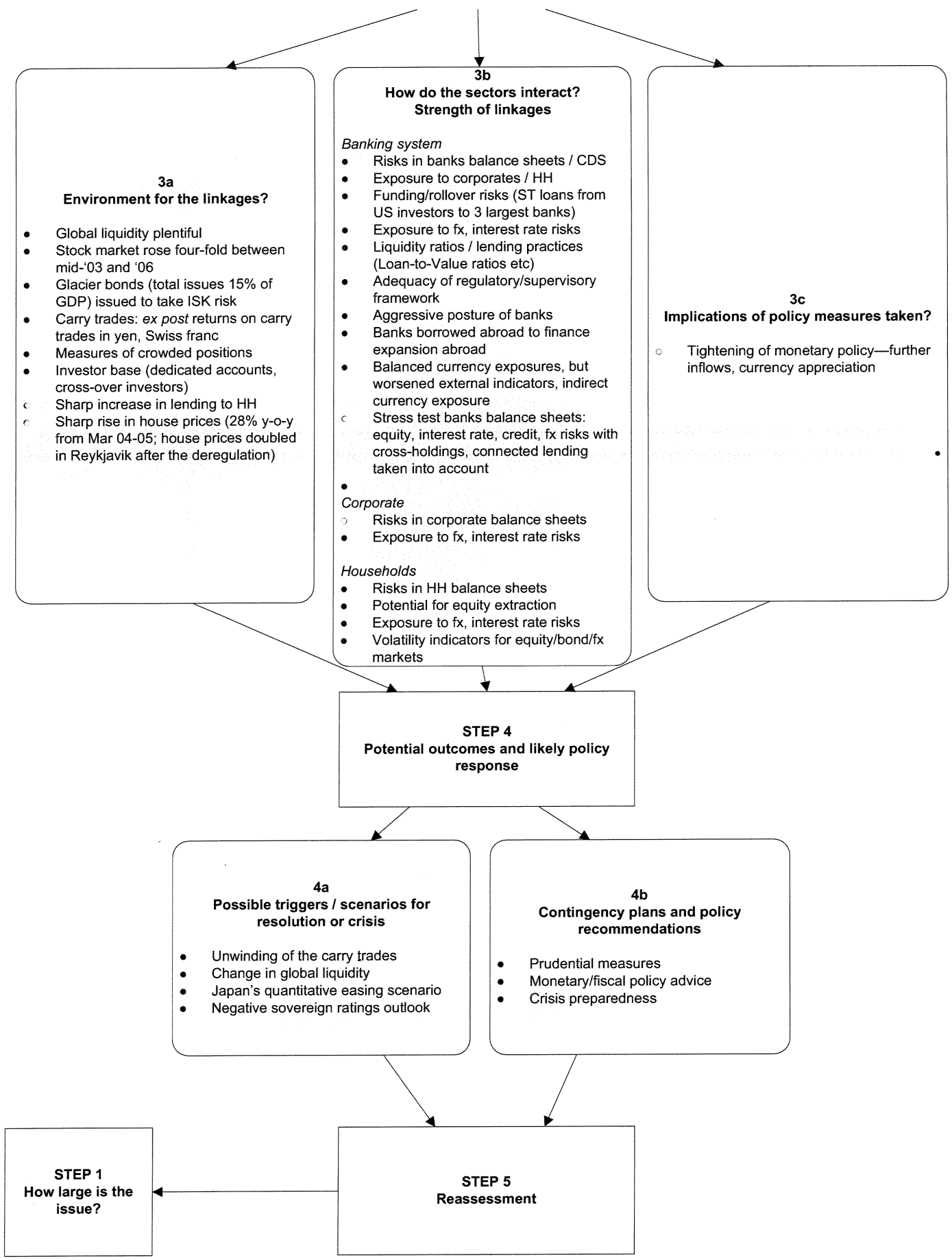
**“THE CONCEPTUAL FRAMEWORK FOR THE ASSESSMENT OF
FINANCIAL STABILITY”**

Financial Sector Decision Framework



Speculative Capital Inflows and Reversal in a Small Open Economy





**3a
Environment for the linkages?**

- Global liquidity plentiful
- Stock market rose four-fold between mid-'03 and '06
- Glacier bonds (total issues 15% of GDP) issued to take ISK risk
- Carry trades: *ex post* returns on carry trades in yen, Swiss franc
- Measures of crowded positions
- Investor base (dedicated accounts, cross-over investors)
- Sharp increase in lending to HH
- Sharp rise in house prices (28% y-o-y from Mar 04-05; house prices doubled in Reykjavik after the deregulation)

**3b
How do the sectors interact?
Strength of linkages**

Banking system

- Risks in banks balance sheets / CDS
- Exposure to corporates / HH
- Funding/rollover risks (ST loans from US investors to 3 largest banks)
- Exposure to fx, interest rate risks
- Liquidity ratios / lending practices (Loan-to-Value ratios etc)
- Adequacy of regulatory/supervisory framework
- Aggressive posture of banks
- Banks borrowed abroad to finance expansion abroad
- Balanced currency exposures, but worsened external indicators, indirect currency exposure
- Stress test banks balance sheets: equity, interest rate, credit, fx risks with cross-holdings, connected lending taken into account

Corporate

- Risks in corporate balance sheets
- Exposure to fx, interest rate risks

Households

- Risks in HH balance sheets
- Potential for equity extraction
- Exposure to fx, interest rate risks
- Volatility indicators for equity/bond/fx markets

**3c
Implications of policy measures taken?**

- Tightening of monetary policy—further inflows, currency appreciation

**STEP 4
Potential outcomes and likely policy response**

**4a
Possible triggers / scenarios for resolution or crisis**

- Unwinding of the carry trades
- Change in global liquidity
- Japan's quantitative easing scenario
- Negative sovereign ratings outlook

**4b
Contingency plans and policy recommendations**

- Prudential measures
- Monetary/fiscal policy advice
- Crisis preparedness

**STEP 1
How large is the issue?**

**STEP 5
Reassessment**

Charles Goodhart
Panel Presentation

A Framework for Financial Stability

Contrasts between Price and Financial Stability

		Price Stability	Financial Stability
a)	Measurement and Definition	Yes, subject to technical queries	Hardly, except by its absence
b)	Modelling	3 equation consensus; DSGE. No default	Default is central, but no generally accepted model yet
c)	Instrument for control	Interest rate; OK, subject to long and variable lags	Interest rate (Greenspan put?) Liquidity (Problems in use) Regulation (Procyclical)
d)	Forecasting Structure	Central tendency of distribution	Tails of distribution
e)	Forecasting Procedure	Standard Forecasts	Simulations or Stress Tests

**INFORMATION REQUIREMENTS IN
FINANCIAL STABILITY ASSESSMENT –
SOME OBSERVATIONS FROM THE
BANK OF ENGLAND**

IMF/FSF/BIS CONFERENCE

WASHINGTON

17-18 OCTOBER 2007

**Nigel Jenkinson
Executive Director
Financial Stability**

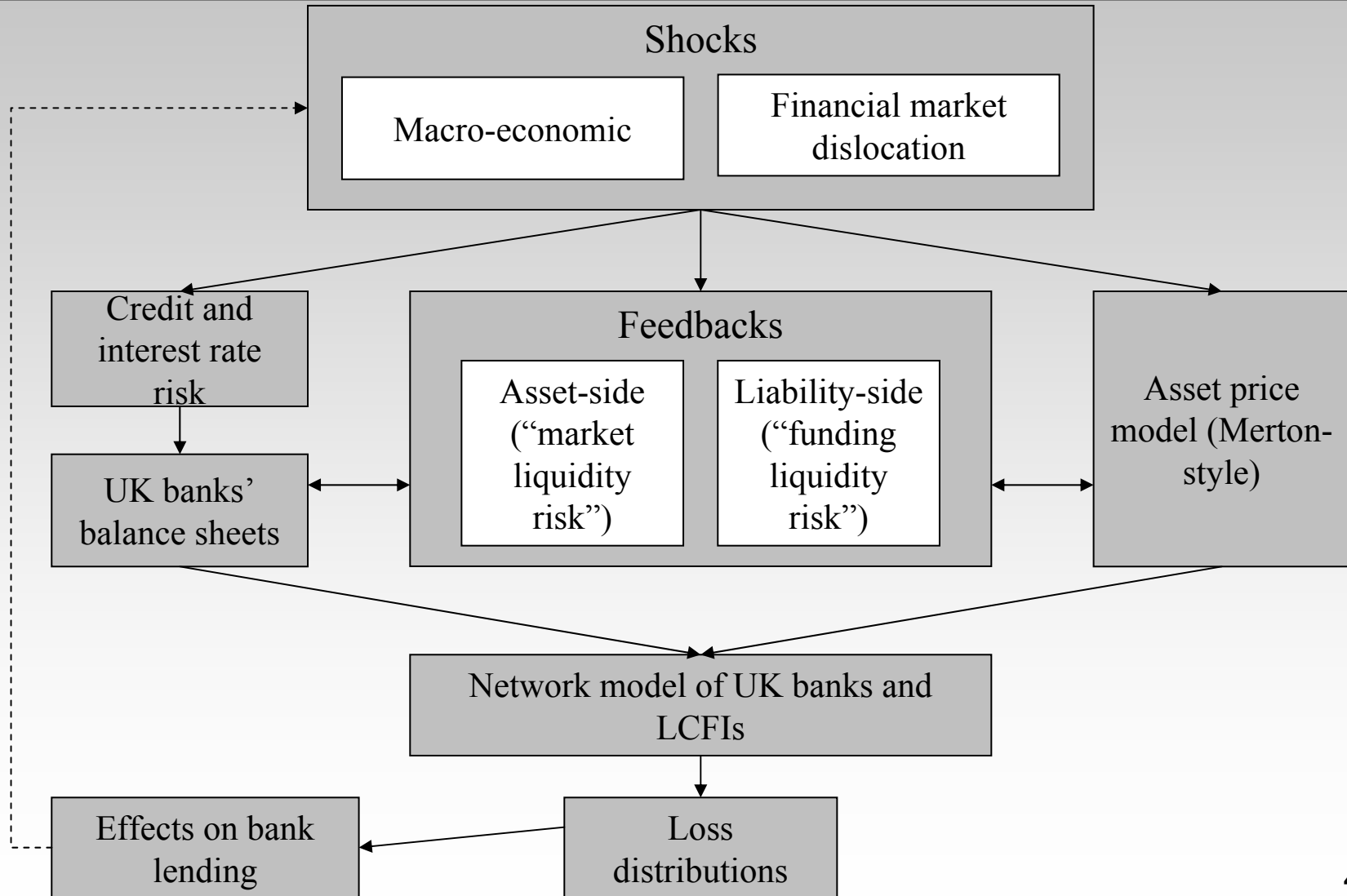
Developing system-wide stress tests - objectives

- Assessing financial system vulnerability to extreme but plausible shocks
- Improving understanding of risk transmission (crisis propagation)
- Identifying ‘weak spots’ and risk reduction/crisis management planning priorities
- Utilising rigorous, consistent framework
- Integrating behavioural interactions and feedbacks

Limitations of traditional approaches to stress testing

- Little attention to feedbacks/system responses
 - market liquidity/disruption
 - Network interactions/contagion
 - Financial/macro feedbacks (eg, credit crunch)
- Results often relatively linear ('extreme' scenario = scaled up 'moderate' scenario)
- Yet financial instability highly non-linear
- Focus on single events rather than distribution of outcomes

Developing a suite of models



Some information challenges

- Data gaps differ significantly across countries (accounting rules, reporting requirements, publication policies)
- Credit risk and risks in the trading book
- Liquidity risk – funding and market
- Network effects

Credit and trading books – some gaps

- Off-balance sheet exposures and contingent commitments
- Adjustments for credit derivatives (retained exposures, basis risks)
- Credit risk/market risk in the trading book
- Value-at-risk positions by broad portfolio

Liquidity risks – some gaps

- Off-balance sheet commitments
- Funding structures and breakdown of liquid assets
- Trading volumes (eg, OTC derivatives/structured credit)
- Trading by type of investor

Network effects – some gaps

- Limitations of regulatory large exposure data
- Other sources of counterparty credit risk (eg, settlement risk)
- Links to other financial institutions (eg, prime brokerage)
- Common asset holdings (fire-sales, etc)

Concluding thoughts

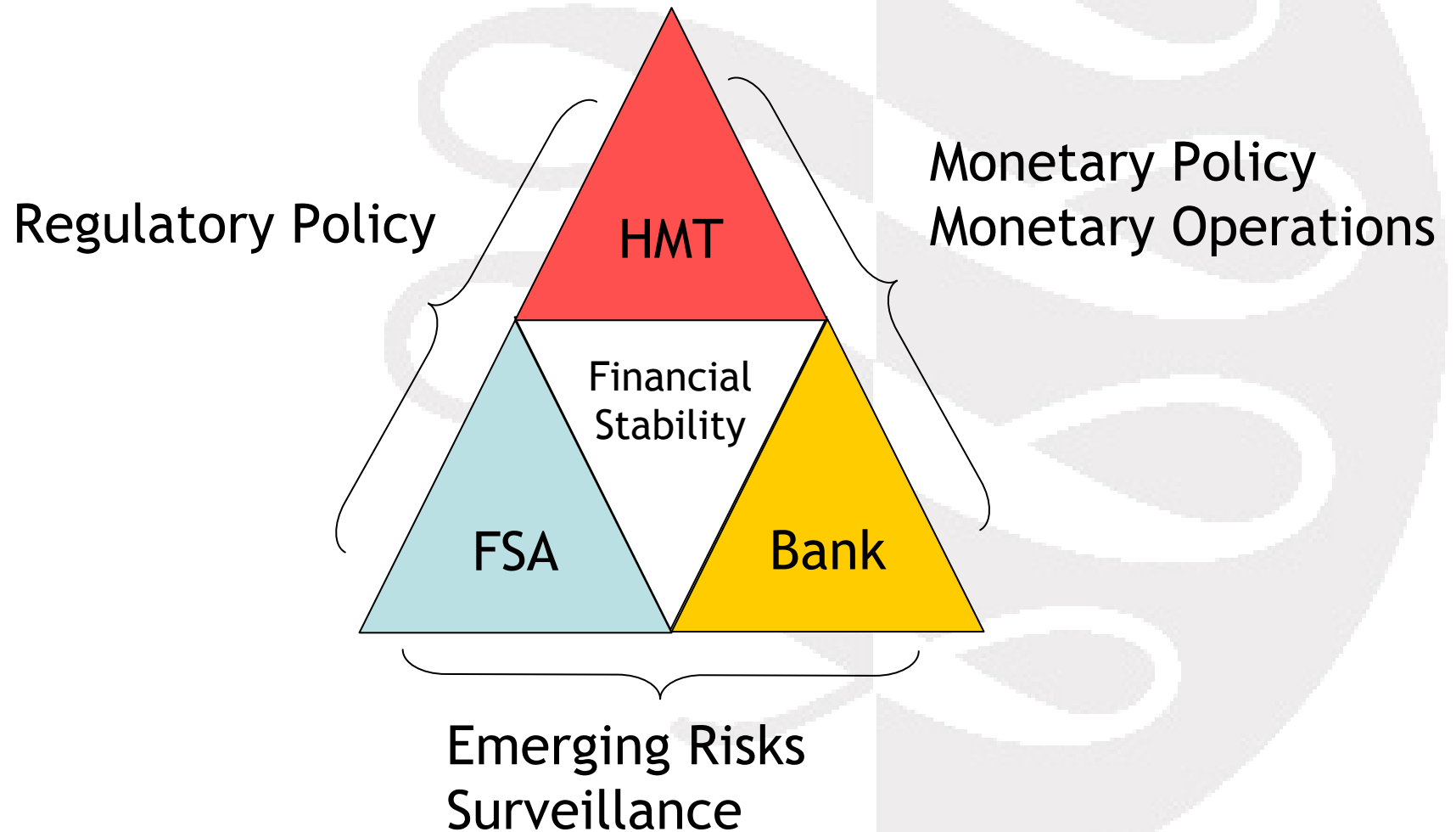
- Improving financial system data is an important priority
- Market innovation outstripping statistical systems
- International dimension is key



Financial Stability Workshop

David Strachan
Director, Major Retail Groups
Financial Stability Sector Leader
Financial Services Authority

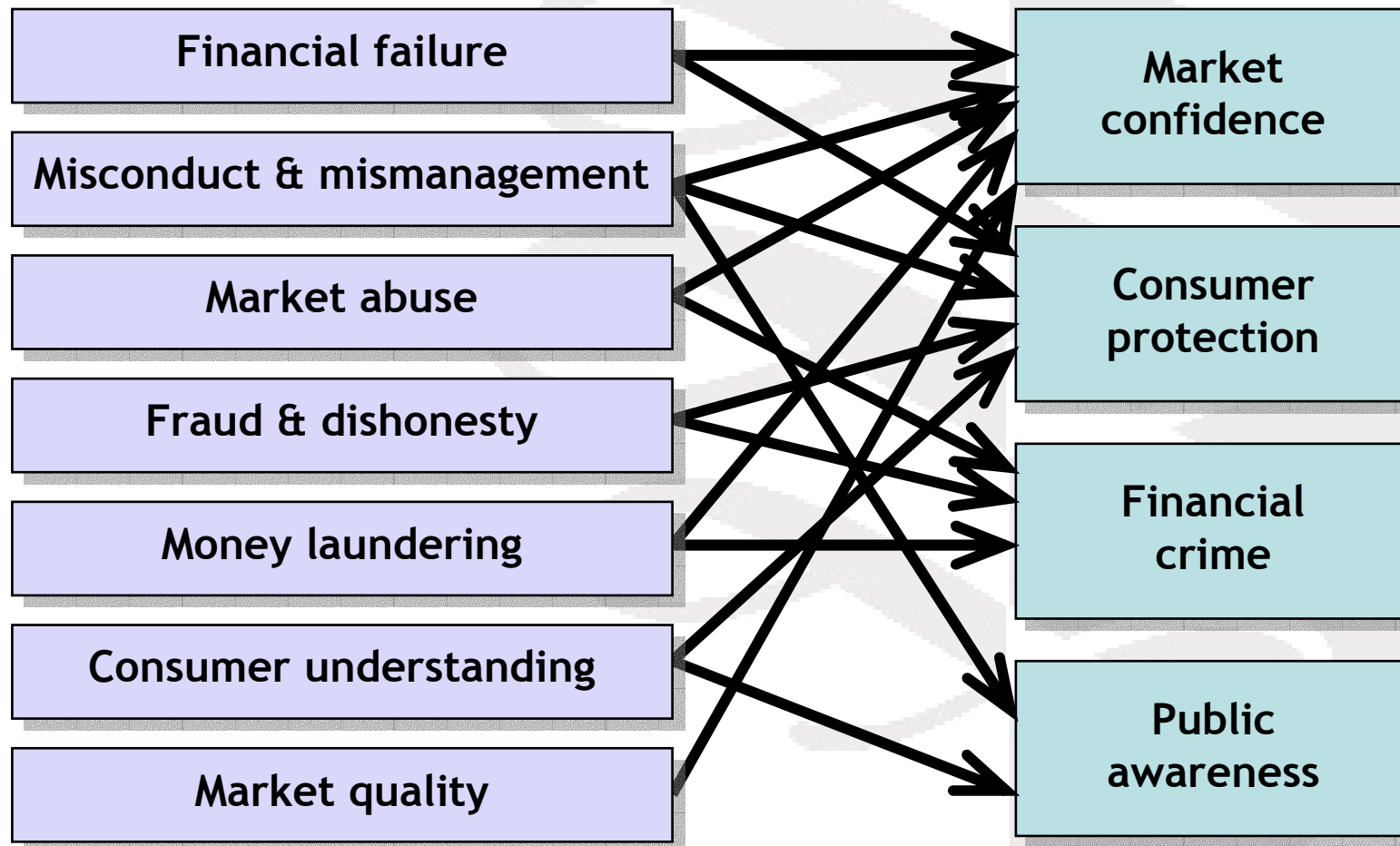
Three-way Partnership



Formal Structure supported by informal contact

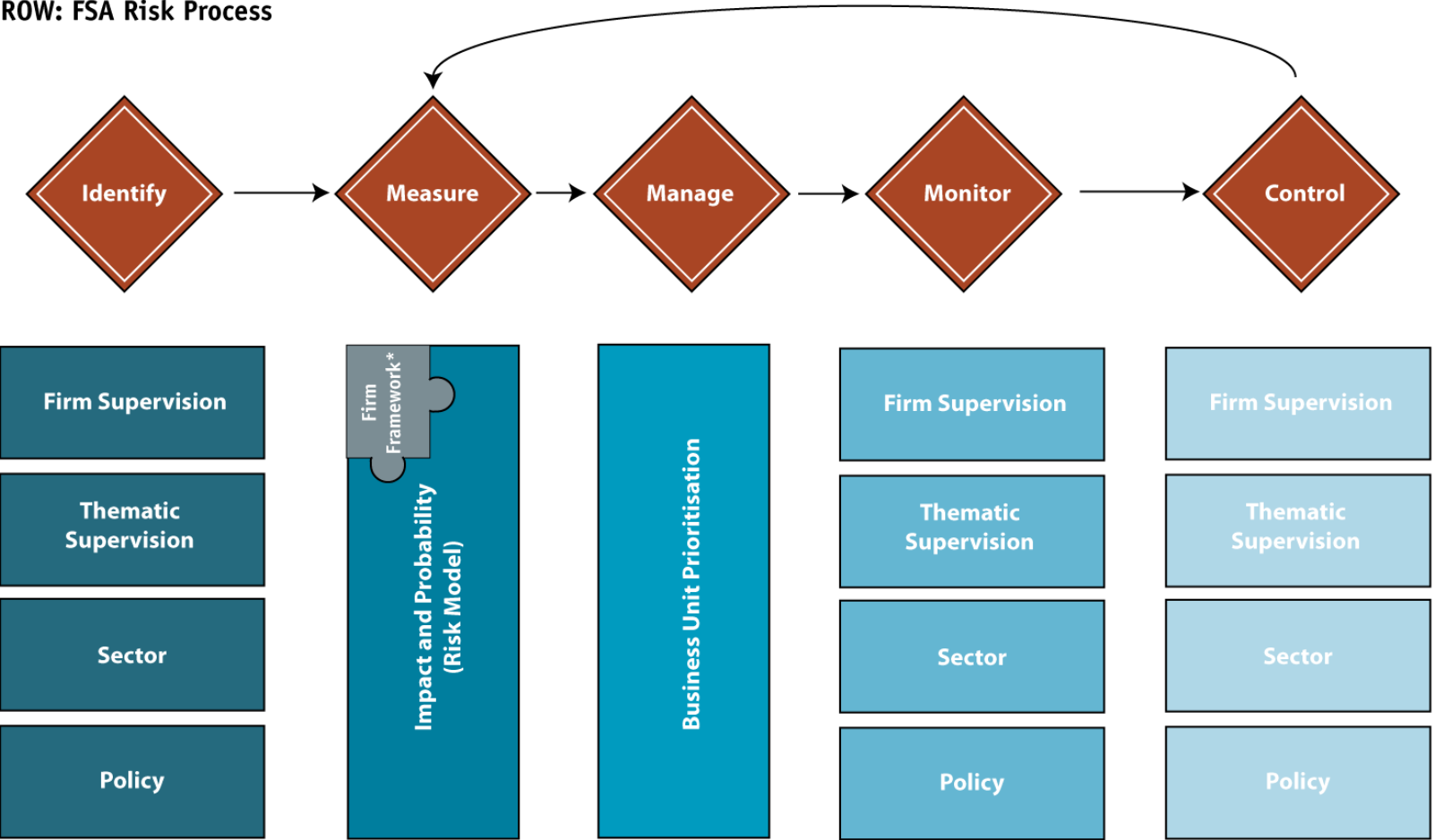
- Formal
 - Governed by Statute
 - Tripartite Committee
 - Standing Committee
 - Memorandum of Understanding on information exchange
 - Senior Management bilaterals
 - xAuthority Board membership
 - Risk Reporting
- Informal
 - Close working relationship forged over many years
 - collaboration on issues and projects
 - cross membership of committees, eg Financial Stability Review, Basel Implementation
 - joint training

Risk Mapping to Statutory Objectives



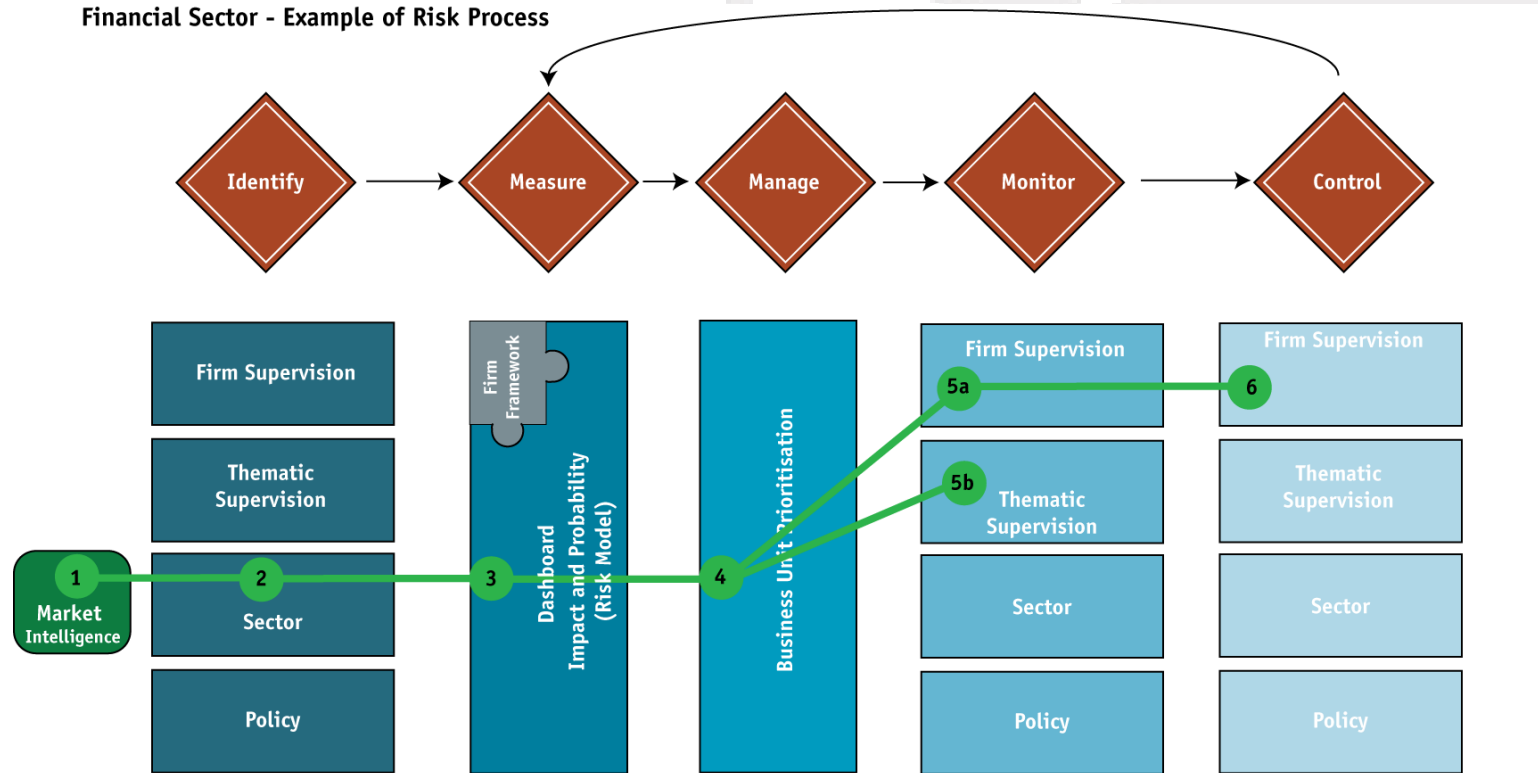
Integrated Process

ARROW: FSA Risk Process



Integrated Process

Financial Sector - Example of Risk Process



Financial Sector Example

1. FSA receives market intelligence outlining an increased threat to financial stability from the valuation practice regarding illiquid instruments.
2. Financial Stability Sector Team analyses issue.
3. The issue is recorded and scored on the Dashboard. A mitigation plan is proposed
4. Following agreement at the Financial Stability Risk Committee, the issue passes to business unit risk committees who approve the mitigation plan.
- 5a. It is agreed that the issue will be taken forward as a sub-sector issue. It is targeted at those firms for whom this is a risk and is provided as mandatory guidance.
- 5b. Some thematic time is also reserved to monitor results and feedback to the sector team.
6. Firm supervisors review investment banking operations and carry out firm by firm action. Results are fed back to the sector team.

ARROW II - The Firm Risk Model

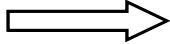
Environmental	Business Model	Controls	Oversight & Governance		Other Mitigants	Net Probability
Environmental Risk	Customers, Products & Markets	Customer, Product & Market Controls	Control Functions	Management, Governance & Culture	Excess Capital & Liquidity	Customer Treatment & Market Conduct
	Business Process	Financial & Operating Controls				Operating
	Prudential	Prudential Risk Controls				Financial Soundness
Business Risks		Controls	Oversight & Governance			

ARROW II - Sub-sector impact

Environmental	Business Model	Controls	Oversight & Governance		Other Mitigants	Net Probability
Environmental Risk	Customers, Products & Markets	Customer, Product & Market Controls	Control Functions	Management, Governance & Culture		Customer Treatment & Market Conduct
	Business Process	Financial & Operating Controls				Operating
	Prudential	Prudential Risk Controls			Excess Capital & Liquidity	Financial Soundness
Business Risks		Controls	Oversight & Governance			

Areas of the model where valuation of illiquid instruments may impact

Scheme of Article 102 of Deposit Insurance Law



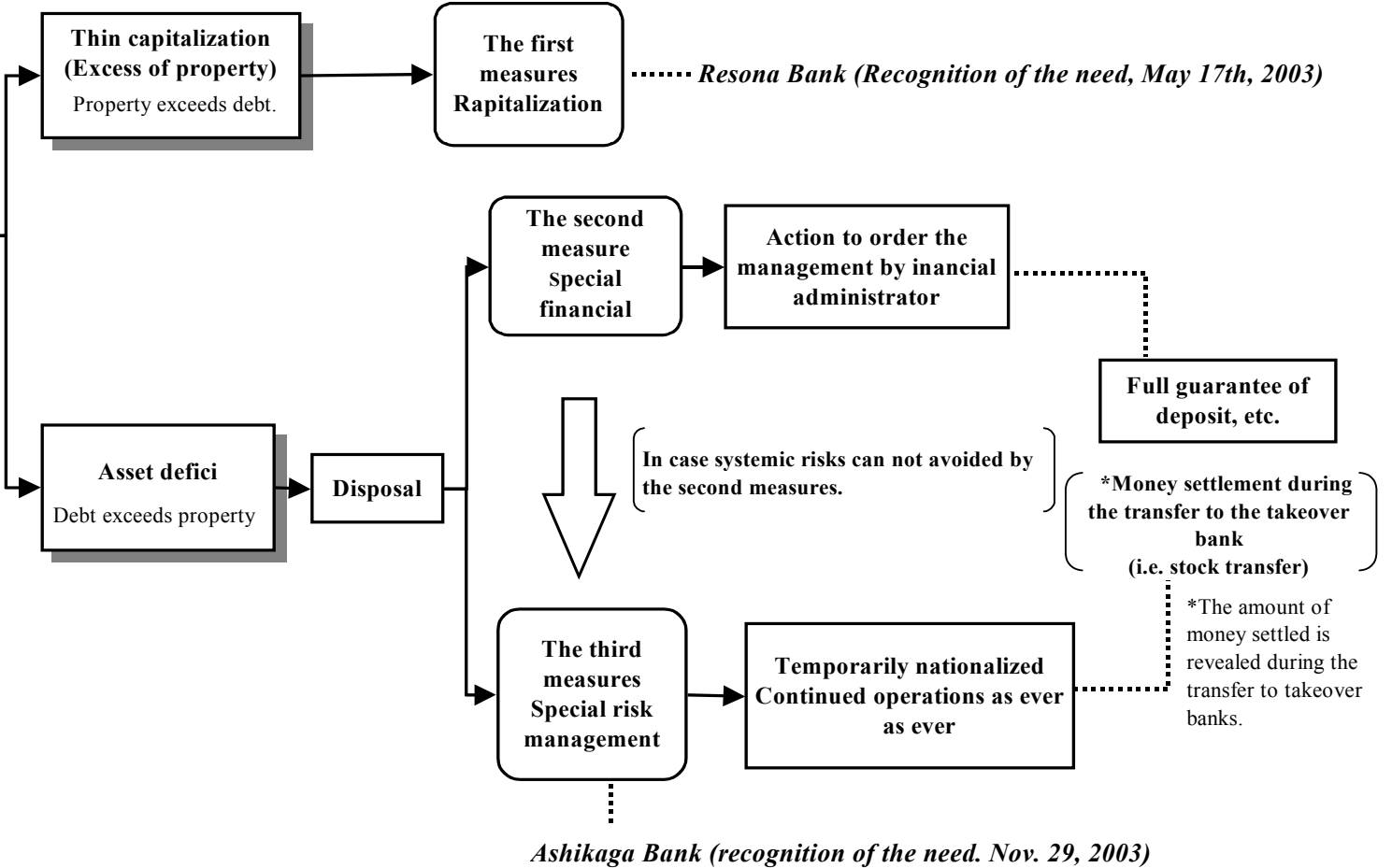
Financial crisis readiness

In case that the extremely major obstacles are reconized to maintain orderly credit conditions of the country or the region, treat the failure by recapitalization or full guarantee of deposite etc.

- Resona Bank ⇒ Recapitalization
- Ashikaga Bank ⇒ Special risk management (Temporarily nationalized)

Potential for systemic risk

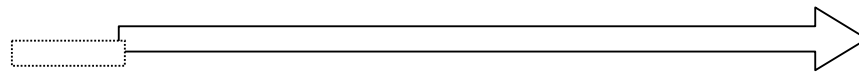
Extremely major obstacles reconized to maintain oderly credit conditions of the country or the region



Number of Failed Financial Institutions

(Unit: Number of financial institutions)

Fiscal Year	1991-1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
Total number	14	5	17	30	44	14	56	0	0	0	0	181
Banks	3	1	3	5	5	0	2	0	1*	0	0	20
Shinkin Banks	2	0	0	0	10	2	13	0	0	0	0	27
Credit Cooperatives	9	4	14	25	29	12	41	0	0	0	0	134



All the deposits were protected. (by March 2002)

(Note 1) The resolution of financial institutions failed by FY 2001 was completed.

(Note 2) * means Ashikaga Bank

Statement by Prime Minister Junichiro Koizumi
May 17, 2003

- 1 Today, I held a meeting of the Financial System Management Council and, after a decision by the Council, I made a determination on the necessity to take a measure to recapitalize the Resona Bank based on the Article 102. 1. (1) of the Deposit Insurance Law. I also set a time limit as May 30, 2003, by which the bank can submit an application for recapitalization.
- 2 Although, at the settlement of accounts as of March 2003, the capital adequacy ratio of the bank went below 4 percent which is the minimum requirement for sound domestically operating banks, the bank is not faced with problems such as deposit drain nor difficulty in raising money in the market at present. The measure to be taken this time is to recapitalize a financial institution not in failed conditions and to recover its soundness, which is different from measures for failed or insolvent financial institutions based upon the Article 102. 1. (2) or (3). Through this action, I will enhance the capital of the bank and thereby, prevent any critically significant disturbances in the maintenance of orderly functioning of the financial markets in Japan and in local areas where the bank is operating.
- 3 After this determination, the concrete decision regarding the recapitalization will be made based on an application from the bank. I intend to secure its capital adequacy ratio well in excess of 10 percent in order to ensure the stability in banks' businesses and not to raise concerns of depositors and others.
- 4 I believe that the soundness of the bank will be secured and its profitability will be enhanced through this recapitalization and thorough management reform. Since bank continues its businesses as usual and all types of deposits and transactions will not suffer from any problems, I hope all of its depositors, customer companies and others would feel secure.
- 5 At present, it is not in the situation where the implication of this event will affect the stability of the financial system. The Government is to continue to make assurance double sure on the stability of the financial system and also the protection of depositors and maintenance of orderly functioning of the financial markets in close cooperation with the Bank of Japan.

Statement by Prime Minister Junichiro Koizumi
November 29, 2003

- 1 Today, the Ashikaga Bank, Ltd. reported its financial condition at the semiannual settlement of accounts as of end-September 2003 to the Financial Services Agency, and submitted a notification of the fact that "the assets of the bank are insufficient to clear outstanding debts and there is a risk of ceasing to repay deposits and other debts based on the business or financial condition" in accordance with the Article 74.5 of the Deposit Insurance Law.
- 2 Considering the aforementioned situation, today, I held a meeting of the Financial System Management Council. Based on a decision by the Council, I made a determination on the necessity to take a measure for the Ashikaga Bank in accordance with the Article 102.1.(3) of the Deposit Insurance Law, and at the same time, decided that the Deposit Insurance Corporation will acquire all the shares of the bank, namely the commencement of special public management. The bank has a large number of depositors and borrowers including small- and medium-sized companies mainly in Tochigi prefecture. In light of the size of the bank and its extremely large lending market share in the prefecture, it is indispensable to maintain its financial operations in the region under the current difficult financial circumstances. Taking all of these into account, I determined to take the measure in accordance with the Article 102.1.(3) of the Deposit Insurance Law in order to prevent any critically significant disturbances in the maintenance of orderly functioning of the financial markets in the region.
- 3 Under the new management team selected hereafter, the Ashikaga Bank is to undertake management reforms, while ensuring orderly operations as a special public management bank whose 100 percent of shares are held by the Deposit Insurance Corporation. Furthermore, when it is necessary for continuation of the bank's operations such as the repayment of deposits, I expect the Bank of Japan would provide liquidity based on the Article 38 of the Bank of Japan Law.
- 4 Under this framework, after the determination on the commencement of special public management, the Ashikaga Bank continues its businesses as usual and all types of debts including deposits will be fully protected and will be repaid at the due date without any problems. As for lending, due consideration will be paid to bona fide and sound borrowers in view of high demand for loans towards the yearend.
In addition, I will establish an inter-agency liaison council on this matter as soon as possible, in order to ensure the stability of finance and economy of the region where the bank is operating.
I hope all of its depositors, customer companies and others would feel secure and calmly respond to the situation.
- 5 The Government will continue its commitment to making double assurance on the stability of the financial system and also on the protection of depositors and maintenance of orderly functioning of the financial markets in close cooperation with the Bank of Japan.

RECENT FINANCIAL MARKET DISLOCATIONS

REMARKS BY E. GERALD CORRIGAN

MANAGING DIRECTOR

GOLDMAN, SACHS & CO.

AT

FINANCIAL STABILITY FORUM WORKSHOP

OCTOBER 17, 2007

WASHINGTON, DC

I. SYSTEMIC FINANCIAL RISK IN PERSPECTIVE

Let me begin with a few introductory remarks which will focus on my long held views about the phenomenon of financial shocks having potential or actual systemic implications. *

- Financial shocks are distinguished from financial disturbances
 - The former have the potential to inflict serious damage on the financial system and/or the real economy.
 - Financial shocks are relatively infrequent
 - The latter occur with some regularity but typically are sorted out by the marketplace with limited disruption.
- Recent history and the long sweep of financial history point to four inescapable conclusions about systemic financial shocks:

First, on balance, the already low statistical probabilities of the occurrence of financial shocks have declined further, even if such probabilities are still well short of zero.

Second, given the speed, complexities and linkages of contemporary financial markets, the potential for damage caused by financial shocks is greater even if probability of occurrence is lower.

- Stated differently, the threat of contagion is greater.

Third, our collective capacity to anticipate the specific timing and triggers of financial shocks is essentially nil.

- To cite a recent example, in the spring of this year almost everyone recognized that credit terms and credit spreads were likely to adjust to more normal standards.
 - But, human nature being human nature, when markets are robust there is a natural aversion to being the last one in or the first one out.
 - In other words, we sometimes forget that financial market behavior is fundamentally a manifestation of collective human behavior with all of the frailties associated with human behavior. That is why from time-to-time financial markets will overshoot in both directions.

Fourth, because of the three factors cited above, financial market practitioners and policymakers have no choice but to focus unrelenting attention on what I like to call strengthening the “shock absorbers” of the global financial system.

- And, despite the recent turmoil in credit markets, I believe we are making solid progress in strengthening these shock absorbers even as financial practices become more complex and relatively new classes of financial institutions take on an

increasingly important role in the financial intermediation process.

- Having said that and recognizing that market conditions have improved in recent weeks, the adjustment process – particularly in mortgage markets and the housing sector – has not yet run its full course. In fact, the correction of the housing bubble in parts of the U.S. can easily take a couple of years.

II. RECENT FINANCIAL MARKET DISLOCATIONS

Allow me to now turn to a summary of the factors that contributed to recent market dislocations.

- At one level, it is abundantly clear that the proximate cause or trigger of the recent events was the excesses in the housing sector with emphasis on the sub-prime mortgage market.
- Having said that, it is also true that even in the face of early signs of problems such as the HSBC acknowledgement of large sub-prime credit losses in February of this year, I think it is fair to say that many observers were slow in recognizing the potential scale of the housing and sub-prime mortgage problem.
 - It was probably the losses experienced by the Bear Stearns hedge funds that brought the problem into sharper focus and served as the wake up call as to the serious nature of the problem and its potential to unleash damaging contagion risk forces.

- Looked at more broadly, the market turmoil that followed seems to have been driven by two fundamental forces, both of which had important implications for the contagion phenomenon. At the risk of oversimplification, those two fundamental forces were as follows:

First, we experienced a broad-based drive to re-price credit risk which took hold across broad segments of the credit markets that were by no means limited to sub-prime mortgages. The motivation associated with the market-driven effort to re-price credit risk was to enhance and strengthen credit terms from the perspective of credit suppliers.

Second, in a separate but related development, we witnessed a simultaneous drive across all classes of financial institutions to reduce risk.

- The drive to re-price credit and to reduce risk in the face of changing market conditions is hardly a new phenomenon. But, in July and August of this year there were factors at work that made this phenomenon different in degree – if not kind – from earlier episodes. I would cite two factors that at least in degree were different from earlier experience and thus, elevated contagion risk factors. They are:

First, the credit re-pricing process was hindered by the break down in the price discovery process for some classes of complex financial instruments including but not limited to sub-prime mortgages and their derivatives such as CDOs. And, as the markets for such instruments became illiquid, the price discovery process was further impaired.

Obviously, if price discovery is not working, re-pricing credit suffers accordingly.

Second, risk reduction, which necessarily entails reducing position risk and/or leverage, inevitably brings with it added pressures on market liquidity which, in turn, contributes to increased volatility and higher risk premiums. Ironically, such increases in volatility also increase measured risk, thus frustrating efforts to reduce risk. Indeed, I suspect that for many institutions, increases in volatility were largely offsetting efforts aimed at position reduction such that key risk metrics such as “value at risk” were little changed, or may have increased, despite meaningful reductions in position risk and leverage. This phenomenon is not new, but in the face of uncertainties about the value of some financial instruments as discussed above, it certainly did contribute to the turmoil in credit markets.

- This analysis leads us inevitably to a troubling conclusion: namely, while experience and history allow us to identify certain common denominators associated with most financial shocks, the specific triggers and transmission channels that produce contagion are almost always impossible to anticipate with any meaningful degree of precision. Thus, no matter how smart we think we are, crisis management for practitioners and policymakers alike will always take place in a setting of sizeable gaps in hard information and great uncertainty as to how contagion factors will play out.
 - One of the many reasons why it is so difficult to anticipate triggers and transmission channels is because, over time, market structures and practices change. The importance of relatively new and important classes

of financial institutions is a case in point as is the degree to which credit risk is distributed across the financial system, thus raising questions as to whether the ultimate holders of such risk fully grasp the nature of such risks.

III. CONTAGION

With those observations in mind, I will now turn my attention to a few highlights regarding the manner in which contagion forces in July and August interacted to produce a situation which witnessed an elevation of systemic risk factors from the “yellow” zone into the “red” zone.

- In the mid-summer timeframe, the sub-prime mortgage market was essentially dysfunctional as even AAA tranches of mortgage-backed securities were priced at significant discounts to par and spillover effects were seen in the prime segments of mortgage markets. In recent weeks, markets have improved but the overhang of the sub-prime situation is still very much alive. Indeed, as recently as October 9, the relatively liquid price indices for various tranches of such mortgage-backed securities show huge discounts relative to par. For example, the ABX price for BBB rated tranches of sub-prime mortgages was 31 or 70 percentage points below par. Moreover, given the absolute volume of sub-prime mortgages – especially those that will be reset to higher interest rates – we certainly have not seen the last of credit losses in this space.
- In these circumstances, one powerful illustration of contagion was the rapid deterioration of the asset-backed commercial paper market.
 - At its peak, the asset-backed commercial paper market accounted for about 50 percent of the overall commercial paper market.

- There are several broad classes of asset-backed commercial paper including the bank sponsored “conduits” and the so-called “structured investment vehicles” (SIVs) which are sponsored by banks and non-bank financial institutions. In all cases, these facilities were off-the-balance sheets of the sponsors.
 - Most, if not virtually all, such facilities have the common characteristic that the short-dated commercial paper is, in effect, financing longer dated pools of assets including, but not limited to, mortgage related instruments for which valuations were subject to heightened uncertainties especially in the July – August timeframe. Not surprisingly, in these circumstances it became increasingly difficult to roll-over the short dated commercial paper that was financing longer term pools of assets.
 - In the case of the bank sponsored conduits, major commercial banks world-wide had in place back-up liquidity arrangements that would be triggered in the event that the commercial paper could not be rolled over. Thus, in the face of investor unwillingness to roll over the commercial paper, bank sponsors of these conduits were faced with the unpleasant choices of either (1) directly financing the conduit either by funding the conduit directly or buying its commercial paper which, in effect, transformed the obligation from off the balance sheet to on the balance sheet, (2) restructuring the vehicle; (3) selling some of its assets; or (4) some combination of all three.
 - The dilemma associated with the SIVs was somewhat more complicated by the fact that most SIVs did not have committed back-up liquidity facilities or such back-up facilities were partial, thus raising even more complex

questions, risk vulnerabilities and the obvious potential for magnifying contagion risk.

- To put this situation in perspective, from its peak in early August until early October, asset-backed commercial paper declined by the staggering amount of more than \$250 billion.
- To date, and thanks to hard work and realism on the part of financial institutions and liquidity support by central bank, the risks associated with a melt-down in the asset-backed commercial paper market have been reduced but by no means eliminated.
- One important consideration that was on the table in August was the fact that the asset-backed commercial paper in question was generally an eligible investment for money market mutual funds, thus raising the admittedly low probability – but very high risk – of dislocations in the arena of money market mutual funds. This danger did not materialize but this risk factor cannot be ignored.
- Contagion forces were in evidence in other segments of financial markets as well. For example, as an extension of the credit re-pricing process, the leveraged loan syndication process ground to a virtual halt in circumstances in which major banks and investment banks were holding something in the range of \$300 billion in such loan commitments, many of which are associated with leveraged buy outs and many of which have quite liberal terms and performance covenants on the part of the borrowers. While the gridlock in the syndicated loan market has showed signs of lifting in recent

weeks, the backlog of commitments remains large and the recent successful syndications have been achieved at not inconsequential discounts to par.

- New issuance of junk bonds and mortgage-backed securities virtually evaporated in August and even the normally tranquil market for tax-exempt municipal bonds experienced significant dislocations.

- Finally, many so-called “quant” driven hedge funds and similar pools of assets experienced large losses during mid-August. In part, such losses were amplified by high leverage in such funds but it is also true that in the stressful environment of August, in particular, the performance patterns of many of these funds turned out to be highly correlated. In other words, the quant funds proved to be a particular form of a crowded trade.

- While these and other serious elements of contagion were very much in evidence in August, it should also be emphasized that on the whole (1) money and FX markets remained reasonably liquid and functional; and (2) the investment grade corporate bond market, and the traditional high credit quality commercial paper market for corporate borrowers behaved reasonably well, suggesting that the ability of markets to better differentiate credit risk may have matured. I, for one, would be very careful in drawing that conclusion since the period in question also witnessed what I would describe as constructive intervention by central banks. We should also recognize that in several noteworthy cases, private sector initiative in coping with especially troubling situations have also been constructive. Indeed, based on my long experience, I believe that were it not for such central bank intervention and private initiative, conditions could have been much more serious.

IV. MORAL HAZARD DILEMMA

Intervention by central banks (and/or governments) in the face of financial crises has been a fact of life for centuries. Not surprisingly, concerns about moral hazard – or the risk that such interventions will protect institutions and investors from loss thereby sowing the seeds for even greater excess in the future – have also been a fact of life for decades.

- While the moral hazard problem is very real, there clearly are circumstances in which central bank intervention to mitigate the damage caused by financial crises is justified.
 - That is the primary reason why many central banks – including the Federal Reserve – were created.
 - Moreover, looking at the history of such interventions over the past 25 years, it can hardly be said that such interventions have protected institutions and investors from losses. For example, the write-down experienced by a number of major financial intermediaries this summer now total more than \$20 billion and the meter is still running.
- Thus, the issue is not whether circumstances will arise in which central bank intervention is wholly justified but rather (1) the skill and discipline with which central banks make the judgment that intervention is justified; and (2) the timing and manner in which that judgment is exercised.
 - It is important to keep in mind that just as there are consequences of a judgment to intervene, there are also consequences of not intervening.

- The decision to intervene or not must always be made on the basis of imperfect information and considerable uncertainty. However, in my experience from the perspective of life on both sides of the street, information gaps can be narrowed by (1) rigorous and ongoing monitoring of markets by central banks; and (2) close and informal communication between monetary authorities and the leaders of key financial institutions. Absent these two conditions, the risk and complexity of the central bank decision-making process rises geometrically.

- Faced with the reality of a financial crisis with potential systemic characteristics, the most difficult judgments that central banks must confront are: (1) the likely speed and reach of contagion; and (2) whether the contagion factor is primarily being driven by market illiquidity considerations as distinct from concerns about institutional solvency.
 - While the liquidity/solvency distinction is never clear cut, I believe it is fair to say that in 1987, 1998, 2001 and this summer, central bank interventions were motivated primarily by liquidity considerations or the need to provide the markets with large amounts of temporary liquidity primarily through the use of open market operations.
 - The use of open market operations provides the advantages that (1) such liquidity support can be reversed with relative ease when the crisis eases; and (2) the marketplace – not the central bank – makes the business and credit decisions as to how that liquidity will be allocated among competing uses.

- Even when intervention is framed around contagion and market liquidity consideration, the moral hazard dilemma does not disappear although the horns of that dilemma are somewhat muted.

- On the other hand, the moral hazard problem is considerably more acute if the issue at hand involves a judgment about intervention growing out of an insolvency question involving one or more important institutions. In these circumstances, decisions to intervene – and the nature of such intervention – must always be made on a case-by-case basis against the backdrop of what, for years, I have called a policy of “constructive ambiguity.” In other words, monetary and governmental authorities should never tip their hand in advance as to what steps they might take in situations that are solvency driven but, by the same token, they should not have unlisted telephone numbers.

To summarize, the moral hazard problem is very real. By the same token, the threat and the reality of infrequent financial shocks will also always be with us. Thus, there will be circumstances in the future in which central bank intervention will be necessary and appropriate even if there should always be a strong bias against such intervention. Finally, in my judgment, it is important to recognize that central banks – by their very nature – are uniquely positioned to play a necessary role in helping to mitigate the damage that can be caused by financial shocks.

V. LOOKING TO THE FUTURE

Since the purpose of these remarks was intended to focus on diagnostics, my observations about lessons learned and areas for potential reform will have to be framed on another occasion. However, I would be remiss if I did not close with a few broad observations for the future.

Specifically;

First, the task of strengthening the shock absorbers of the global financial system is never finished;

Second, despite the turmoil of recent weeks and months, we should not lose sight of the fact that key elements of financial practice worked quite well. For example, counterparty risk management at major institutions appears to have performed very well. Also, despite huge spikes in the volume of activity, our financial infrastructure – the “plumbing” of the financial system – worked remarkably well. I might add in this regard, that these areas were among those singled out for special attention in the July 2005 Report of the Counterparty Risk Management Policy Group.

Third, while there are opportunities to further examine enhancing supervisory policies and market practices, we must guard against over-reaction;

Finally, some of the areas for potential reform such as (1) enhanced disclosure practices for complex mortgages; (2) best practices for price verification as applied to complex financial instruments; (3) capital charges and accounting treatment for certain off balance sheet instruments; and (4) disclosure and diligence standards for certain complex financial instruments. I want to stress, however, that all of these areas are exceedingly complex and must be approached with care and discipline.

All of that being said, this further episode of financial market dislocation reminds us once again that “stuff happens” even as we continue to make progress in our quest to further strengthen efforts aimed at both crisis prevention and crisis management.

Thank you.

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