Causes and Lessons Learned from The Financial Crisis

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The purpose of this presentation is to first catalogue the proximate and underlying causes of the current financial crisis in a summary fashion that is designed to be relatively simple and devoid, to the extent possible, of technical terminology. Clearly, the proximate cause of the crisis was the housing bubble in the United States. There were, however, six more fundamental causes of the crises, each of which had been building up for years and each of which interacted with the others to greatly amplify the duration and severity of the crisis. Those fundamental causes of the crisis are listed below and discussed in section I of this presentation.

- Global Macro Economic Imbalance and Related Capital Flows
- The Mis-pricing of Credit Risk
- Leverage in its Many Forms
- Weaknesses in Financial System Infrastructure
- Shortcomings in Risk Management and Official Oversight
- Distorted Incentives
The Financial Crisis: Causes and Lessons Learned

While some observers may have a somewhat different or a somewhat longer list of the fundamental causes of the crisis, it is probably fair to say – at least with the benefit of hindsight – that there is now a reasonably broad consensus that the factors mentioned above were the main driving forces that caused the crisis. Having said that, a far more difficult – and potentially controversial – subject relates to the lessons to be learned from the crisis. The following analysis identifies five broad categories of lessons learned as follows:

- Factors Relating to Macro-Economic Policy
- Factors Relating to the Financial System
- Factors Relating to Individual Financial Institutions
- Factors Relating to Supervisory Policies and Practices
- Factors Relating to the Ongoing Legacy of the Crisis

In the interest of symmetry and simplification, corresponding to each of these broad categories of lessons learned, the presentation highlights five particular conclusions that warrant high priority on the agenda for reform. Obviously, this “five by five” matrix of lessons learned is somewhat artificial and is neither first nor the last word regarding lessons learned. Hopefully, however, the exercise will help both policymakers and practitioners better focus on the reforms that will foster needed change while minimizing the risks of well intended reform that might harm the financial intermediation process in ways that could undermine prospects for long-term growth and rising standards of living.
The Causes of the Crisis
The Causes of Crisis

I. Proximate Cause

— Most observers readily agree that the proximate cause of the crisis was the housing bubble in the United States.

− The wealth effect associated with the rise in house prices on the upside of the bubble contributed to strong consumer spending and low (or negative) household savings rate.

— The US housing bubble was amplified by a number of inter-related contributing factors including the following:

− The belief in too many circles that home prices never decline;

− The noble, but poorly executed, effort to bring home ownership to an ever larger share of households;

− The progressive deterioration of credit standards especially as applied to increasingly complex mortgage instruments;

− The absence of a coherent framework of official oversight of the mortgage markets;

− The ease with which high risk “sub-prime” mortgages were securitized and transformed into still higher risk pools of highly structured mortgage-related products such as CDO’s, CDO’s squared, etc.
The Causes of Crisis

II. Underlying Causes

It is highly unlikely that the US housing bubble and its costs would have been nearly so severe were it not for the fact that over a long period of time serious and self-reinforcing macro-economic and macro-financial imbalances and excesses were taking hold in the US and around the world. Indeed, it is only with the benefit of hindsight that both the official community and the private sector have come to fully appreciate the manner in which those imbalances and excesses were to interact and produce the most severe and challenging financial crisis since the 1930’s. At the risk of considerable over-simplification there are six highly inter-dependent underlying causes of the crisis as follows:

- **Global Macro-Economic Imbalances and Related Capital Flows**
  - Over the past several years almost all informed observers recognized that global imbalances in trade and current account positions were unsustainable.
  - Indeed, it is highly likely that even without the financial crisis a serious macro-economic correction would have occurred but there is no doubt that the financial crisis made the correction far more serious than otherwise would have been the case.
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- Global Macro-Economic Imbalances and Related Capital Flows  (Cont’d)

  - However, few fully recognized the manner in which the resulting massive flows of international capital would contribute to a surge in a global liquidity that would contribute to an extended period of unusually low interest rates and laxity in credit underwriting standards.

  - In retrospect, these forces were probably amplified by overly accommodative monetary policy in the US.

  - While it was not fully appreciated at the time, these imbalances were directly contributing to the “reach for yield” phenomenon in credit and fixed income markets as virtually all classes of investors sought to supplement returns on credit related and fixed income financial instruments.

  - This “reach for yield” factor played a major role in creating both the demand for and supply of highly structured credit products which, among other things, relied on greater leverage to produce such enriched returns.
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- The Mis-pricing of Credit Risk

  - Gradually at first, but at an accelerated pace in 2005 and 2006, credit risk was being underpriced as suppliers of credit, in an intensely competitive market, were not being adequately compensated for the risk they were taking.

    - Credit spreads across the board reached razor thin margins.

    - Credit terms and conditions in residential and commercial real estate, and in the leveraged financial space, reached the point that could only be justified by a medium-term economic and financial outlook in which virtually nothing ever went wrong.

    - In a related development greater leverage in the LBO and MBO space also contributed to the bidding up of equity prices in an already surging stock market.

    - The result was an unbridled appetite to take on credit risk fostered in part by a failure to recognize that the channel through which the correction in global imbalances would take place was the credit markets.
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Leverage in its Many Forms

- Leverage in its simplest form (the ratio of equity-to-assets) has been a necessary part of the financial intermediation process for centuries primarily because the amount of equity in the financial system as a whole is limited by the fact that most savers wish to hold their financial investments in instruments that have lower risk profiles and higher transactional capabilities than is the case for equity.
  - Because leverage is at the core of the financial intermediation process even Adam Smith recognized that banking must be regulated.

- Owing to decades of technologically driven financial innovation, the once relatively simple task of defining and measuring leverage has long since disappeared. As examples:
  - Reflecting the astronomical growth of “securitization” activities, large classes of activities are conducted in off balance sheet in various special purpose vehicles.
  - Many financial instruments including structured credit products and derivatives contain so called “embedded” leverage which is extremely difficult to understand much less to measure.
The Causes of Crisis

Leverage in its Many Forms (Cont’d)

— In the years leading up to the crisis all forms of leverage increased but, more than that, various classes of leverage were often “layered” or “tiered” upon each other in ways that dramatically increased the risk of loss to even the most sophisticated market participants.

— As an extreme example, a plain vanilla home mortgage having its own leverage is financed by a leveraged bank and then pooled into a leveraged securitization vehicle. Then a slice of the securitized pool of mortgages – typically drawn from the lower credit tranches of the mortgage backed security – is used to create a further leveraged CDO and in some cases, the CDO is then restructured to create a further leveraged CDO squared which is then purchased by a leveraged financial institutions including some “near banks.” Then, one or more tranches of the RMBS or the CDO becomes a “reference entity” for a credit default swap which itself has embedded leverage.

— The above illustration of the tiering of leverage also serves as a graphic illustration of the dangers of pooling very high risk structured credit products which turned out to be a key weakness of the so-called “lend and distribute” model of financial intermediation.

— While reforms in these areas are clearly and urgently needed, care must be exercised so as not to confuse the question of whether the securitization model itself was the problem or whether the problem lies in the manner in which the securitization model was applied to progressively higher risk instruments which also became “reference entities” in the credit default swap market.
The Causes of Crisis

- Weaknesses in Financial System Infrastructure

  - For years, if not for decades, some observers have argued that weaknesses in financial infrastructure (payments, clearance and settlement systems or the “plumbing” of the financial system) were the achilles heel of the global financial system.

    - The validity of that concern was unambiguously illustrated at several points in the crisis including the Bear Stearns episode in March 2008 and the Lehman and AIG episodes in September 2008.

      - Hence, the term “too connected to fail.”

  - As is now universally recognized, the key issue associated with weaknesses in financial infrastructure is the nature and scale of the counterparty risks that are at the center of the global financial system and the undisputed fact that the counterparty credit exposures among relatively small number of large financial institutions – both regulated and sometime largely unregulated – can give rise to systemic risk.

    - The loss in confidence at any one or more of such institutions is exceedingly difficult to unwind in an orderly fashion.

    - Moreover, in the face of the crisis, the virtual financial gridlock that surfaced in mid September 2008 gave rise to a perfectly natural drive by virtually all counterparties to protect themselves by insisting on higher and better quality margin, collateral and/or haircuts while also substantially increasing their liquidity reserves. These perfectly rational “micro” actions by individual institutions interacted with each other to yield the darkest of many dark days experienced over the life of the crisis.
The Causes of Crisis

Weaknesses in Financial System Infrastructure (Cont’d)

- The 2005 and 2008 Reports of the Counterparty Risk Management Policy Group had reasonably well identified the nature and sources of the financial infrastructure weaknesses and recommended a lengthy agenda of steps needed to address these issues.
  - Multiple reports from the official international community are also calling for urgent steps to deal with these issues.
  - Substantial progress has been made in these efforts but clearly much more remains to be done.
- Solutions to the problems can only – for the most part – be made by collective industry-wide initiatives complemented by cooperative efforts with the public sector both of which entail substantial further commitment of resources.
The Causes of Crisis

- **Shortcomings in Risk Management and Official Oversight**

  - It goes without saying that a financial crisis of the scale experienced over the past 18 months has been associated with material shortcomings in risk management in the private sector and official oversight in the public sector.

  - Indeed, as late as the summer and early fall of 2007 only a tiny handful of observers recognized that we were on the cusp of a truly catastrophic crisis.

  - With the benefit of hindsight it is clear that the “wild card” that greatly compounded the systemic characteristics of the crisis was the largely unanticipated manner in which contagion forces triggered by seemingly local financial brush fires erupted into raging financial forest fires.

  - The first illustrations of the contagion phenomenon occurred in August 2007 when the linkages between the asset-backed commercial paper market and the severe maturity mismatches in many conduits and structured investment vehicles came as a wake-up call to many market participants and regulators.

  - The episode, unfortunately, was only the beginning of the process through which contagion amplified systemic risk.
The Causes of Crisis

Shortcomings in Risk Management and Official Oversight (Cont’d)

— While failures in risk management are often viewed as largely technical matters having to do with models, metrics and methods, the experience of the crisis, and period leading up to the crisis, suggests that often such failures were much more fundamental as illustrated by the following examples:

— As clearly outlined in the March 2008 Report of the Senior Supervisors Group both the philosophy and the practices associated with corporate governance varied from institution to institution with particular emphasis on such items as the extent to which the CEO was directly involved in the risk management process and the extent to which critical control functions and personnel were truly independent from income-producing functions and personnel.

— It is also obvious that there were failures in risk monitoring (as distinct from risk management) as well as failures in the manner in which risk taking information was aggregated and reported to the highest levels of management.

— Circumstances would also suggest that supervisory authorities were “behind the curve” in their risk monitoring activities, a situation that reflected in no small way the fact that industry practitioners, themselves were slow in raising concerns about the emerging crisis with their supervisors.
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- Shortcomings in Risk Management and Official Oversight (Cont’d)
  
  - It is also clear that the dynamics of contemporary forms of liquidity disintermediation (the “run” on the bank) were not fully appreciated until it was too late.
  
  - More generally, complexity and speed factors complicated risk management and supervisory oversight in a number of areas including, for example, model risk, basis risk, correlation risk, market liquidity and embedded leverage risk.
The Causes of Crisis

Distorted Incentives

- With the benefit of hindsight it is clear that the design and workings of the system of incentives within the financial sector has contributed to the severity of both the upside and downside of the “boom-bust” credit cycle.

  - The mere fact that the last 18 months has fully reversed the gains in profits realized over the preceding 5 years at some institutions provides ample testimony that something went badly wrong with regard to workings of their system of incentives.

- Understandably much of the focus on incentives has put the spotlight on compensation practices.

  - What is particularly troubling about the incentive question as it applies to compensation practices is the evidence that the linkage between risk-taking and risk-tolerance on the one hand and the amount and timing of compensation on the other was often badly distorted.

    - Robust compensation for profits realized in one year that were fully reversed a year or two later is a vivid example of the distortions in incentives.
The Causes of Crisis

- Distorted Incentives (Cont’d)

- Compensation related issues are not the only example of distorted incentives in the financial sector.

- For example, the framework of incentives at individual firms should help to balance business imperatives by ensuring that the resource base and the recognition/reward system for the support and control functions are such that critical tasks, such as risk monitoring and price verification, are performed in a manner that protects the financial integrity and professional reputation of the institution while also helping to reinforce the culture of risk management.
The Crisis: Lessons Learned
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- **Macro-Economic Policy**

  A. Public officials in general, and monetary authorities, in particular, cannot ignore the potential damage growing out of large-scale asset price bubbles.

  B. Persistent and sizeable global imbalances in trade and current account positions – and their implications for capital flows – are unsustainable even if the channels for adjustment are difficult to anticipate.

    - When the adjustment is accompanied by pervasive excesses in the credit system – as was the case leading up to the crisis – the likelihood of a long and painful adjustment increases geometrically.

  C. Sustained periods of abnormally low nominal and real interest rates in the face of broadly satisfactory patterns of macro-economic performance will, inevitably, contribute to the tendency of financial markets to overshoot.

  D. Perceived structural changes in macro-economic “laws of nature” regarding potential growth, inflation and unemployment are often exaggerated or, even worse, illusory.

  E. The specific timing and triggers of systemic financial shocks having macro-economic and macro-financial implications are, and always will be, virtually impossible to anticipate, thus requiring ongoing initiatives to strengthen the “shock absorbers” of the financial system so as to be in a stronger position to contain and manage such shocks when they occur.
The Crisis: Lessons Learned

Financial System

A. In the United States (and elsewhere) the sharp rise in the size of the financial sector relative to GDP and the even sharper rise in profits generated by the financial sector should have been recognized as prominent “red flags” that all was not well.

B. In comparing, from a distance, the large integrated financial institutions in the US and Europe that experienced major financial problems with the relatively few such institutions that escaped the worst of the crisis, it seems clear that aggressive appetite for risk taking and acute shortcomings in management (broadly defined) not differences in business models among such institutions were at the root of the problems.

C. Weaknesses in financial “infrastructure” – the plumbing of the financial system – were of critical importance in amplifying systemic risk.

D. Disclosure practices across wide segments of the financial system are seriously compromised by “information overload” that is importantly driven by concerns about litigation and regulatory risk. Moreover, even under the very best of circumstances, it is extremely difficult even for highly sophisticated professionals to digest and assimilate information about contemporary financial practices and institutions. In other words, the case for enhanced transparency is overwhelmingly clear but this goal also requires greater clarity and simplification.
The Crisis: Lessons Learned

- Financial System (Cont’d)

E. The emergence of classes of large and often powerful “near banks” altered the dynamics of the overall financial intermediation process in ways that have substantially complicated the channels through which contagion risk elevates systemic risk. Thus, as a matter of public policy, near banks must be the subject of some higher degree of official oversight.

- One result of the near bank phenomenon has been the emergence of a credit system with multiple classes of participants with differing interests in workouts and restructurings.
The Crisis: Lessons Learned

Individual Financial Institutions

A. The precepts of sound corporate governance that require direct and continuing participation of the highest levels of management in the risk management process and the absolute independence of critical control personnel are essential prerequisites for stability that were not always adhered to.

B. While it is self evident that failures in risk management occurred, it is equally obvious – and perhaps more important – that failures in the basics of risk monitoring also occurred.

C. Regardless of the point in the business or credit cycle and regardless of the accounting methods used, the “art” of valuation and price verification requires a huge commitment of highly skilled and independent personnel.

− Accounting practices, including fair value, were not a major cause of the crisis but were contributing factors to the amplitude of the credit cycle.

− At the worst point in the crisis, it was apparent that investors had lost confidence in financial reporting amid concerns that loss recognition on the part of some financial institutions appeared to be subject to elements of uncertainty.

− Looking forward care must be exercised to ensure that efforts to modify accounting policies and practices do not fall victim to the law of unlimited consequences by further undermining confidence in financial reporting.
The Crisis: Lessons Learned

Individual Financial Institutions (Cont’d)

D. All parties to the development and use of high risk structured credit products – including the rating agencies – failed to perform sufficiently rigorous credit and potential loss diligence in a setting in which various forms of leverage were either not understood or were given insufficient weight.

- Structured credit products such as CDOs, CLOs, and their derivatives created a condition in which even relatively modest adjustments in market conditions produced large losses which in many cases will not be reversed by subsequent recoveries.

E. More than a few individual financial institutions did not fully appreciate the dynamics of the relationship between capital contingencies and liquidity contingencies in circumstances in which liquidity disintermediation did result in de-facto insolvency even in the face of seemingly adequate capital.
The Crisis: Lessons Learned

**Supervisory Policy and Practices**

A. As a matter of both policy and practice, the focus on the public policy goal of enhanced financial stability must be elevated so as to better understand and anticipate contagion and systemic “hot spots.”

- While the approaches adopted to achieve this objective will vary from country to country, central banks must play a major, but not necessarily exclusive, role in this effort.

- Under any circumstances, it will be very difficult to articulate the mandate of a “systemic supervisor” and even more difficult to execute such a mandate.

B. In the US, and perhaps in other countries as well, regulatory restructuring is seen as a necessary element of the effort to strengthen financial stability driven prudential supervision. While necessary, restructuring is not a sufficient condition for success.

- What is also needed is to alter the philosophy of prudential supervision in the direction of a much more principles-based – as opposed to a rules-based – framework of supervision. While some rules are necessary, more emphasis needs to be placed on case-by-case judgments concerning the ability of major institutions to withstand severe shocks.

- The recent work of the Senior Supervisors Group is an excellent example of a constructive shift in both supervisory philosophy and practice.
The Crisis: Lessons Learned

- Supervisory Policy and Practices (Cont’d)

C. More effective prudential supervision will also require substantial additional resources with particular emphasis on highly skilled, experienced and well-compensated personnel.

D. Enhanced cross-border coordination of prudential supervisory policy is obviously needed but will be very difficult to achieve in practice, in part, because in the future, issues concerning sovereign prerogatives will command even greater emphasis.

E. There are areas such as capital and liquidity in which simplified and yet more rigorous minimum standards must be developed as a single integrated discipline.
The Crisis: Lessons Learned

The Legacy of the Crisis

A. The necessary and unprecedented scale of central bank and government intervention – particularly in the US – triggered by the crisis brings with it material medium-term risks of higher inflation and a persistently larger role of the government in economic and financial affairs that threatens to crowd out private investment and, worse, private initiative.

B. For this reason, it is not too early to focus considerable and realistic attention on the specifics of exit strategies that will wind-down these official interventions as circumstances permit.

- On the central bank side, exit strategies will – to an extent – be relatively easy because elements of the rise in central bank’s balance sheets will be self liquidating over time.

C. At least in the US, the wind-down of double-digit deficits and federal spending levels relative to GDP that are well in excess of long term experience will be extraordinarily difficult to achieve even as growth returns.

- For a period of at least the next several years, the welcome rise of the personal savings rate will be more than offset by the significant rise in government dis-savings thus leaving the US with a continuing and large negative savings rate.
The Crisis: Lessons Learned

- The Legacy of the Crisis (Cont’d)

D. The understandable political backlash of the crisis directed at "Wall Street" brings with it an element of concern that badly needed reforms could result in regulatory overkill that might compromise the financial intermediation process in ways that could undermine long-term economic performance.

E. As a result of the crisis, the long-standing leadership position of the US on economic and financial affairs has been badly damaged.

  - While this setback is likely to be at least partially reversed over time, the set-back will complicate further the already complicated task of strengthening international economic and financial policy coordination.

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