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# Lessons from the Global Financial Crises

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\*All opinions expressed herein are the author's own and do not necessarily reflect the views of any of the organisations with which the author is affiliated.

## Outline

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- ◆ Introduction
- ◆ What Caused the Global Financial Crisis of 2007-2009?
- ◆ What Caused the European Debt Crisis?
- ◆ Excessive Exchange Rate Volatility
- ◆ What Lessons Can We Learn?
- ◆ Concluding Remarks

# What Caused the Global Financial Crisis of 2007-2009?

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- ◆ The causes can be classified into four categories:
  - ◆ Easy money in the United States
  - ◆ Irrational exuberance unrestrained
  - ◆ Failures of regulation and supervision in the developed economies
  - ◆ Defects in the institutional design of the financial sector

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## What Caused the Global Financial Crisis of 2007-2009? Easy Money

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- ◆ The real rate of interest in the U.S. has been negative for quite some time. Low and often negative real rates of interest encouraged borrowing and the use of leverage and fed the bubble in asset prices, especially real estate prices, in the U.S. and elsewhere.

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## What Caused the Global Financial Crisis of 2007-2009? Irrational Exuberance

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- ◆ Irrational exuberance is not uncommon--economic and financial bubbles have occurred from time to time all over the World for centuries, driven by (initially) self-fulfilling asset price expectations and abetted by the heavy use of leverage.
- ◆ However, bubbles can and should be contained and restrained by the suitable and timely restrictions on the use of leverage. For examples, the loan-to-value ratio of home mortgages can be lowered; the margin requirements for the purchase of common stocks can be raised.

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## What Caused the Global Financial Crisis of 2007-2009? Irrational Exuberance

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- ◆ If bubbles are left entirely to the market, they will certainly eventually burst but then they will have become much bigger and will therefore do much greater damage to the economy.
- ◆ Recovery of an economy from a burst asset price bubble can take years or even decades. For example, the Japanese economy has yet to recover fully from the bursting of its property price bubble in 1990.
- ◆ Unfortunately, the governmental authorities were often unwilling and unable to restrain the irrational exuberance.

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# What Caused the Global Financial Crisis of 2007-2009? Regulatory Failures

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- ◆ Why were the serious regulatory failures that allowed the global financial crisis to occur possible?
- ◆ The first fundamental reason is the overly strong faith on the part of the financial regulators that whatever could go wrong “the market would take care of it.”
- ◆ The second fundamental reason is a phenomenon known as regulatory capture—over time the regulatory agencies have been “captured” by those same firms they are supposed to regulate, through lobbying and other efforts by the latter, and are thus frequently persuaded to relax regulatory requirements in favour of these firms.

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## Areas of Regulatory Failures

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- ◆ Regulatory failures have been manifested in many areas. The principal areas of regulatory failures, in addition to the failure to restrain irrational exuberance, are:
- ◆ (1) Excessive leverage of financial institutions (as well as some non-financial firms) and of the financial sector as a whole;
- ◆ (2) Failure to ensure competitive markets; and
- ◆ (3) Failure to control moral hazard.

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## Excessive Leverage

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- ◆ Excessive leverage of a firm implies that it is more likely to fail because an ever so slightly temporary setback can turn the net worth of the firm negative and hence put the firm into bankruptcy.
- ◆ Moreover, excessive leverage encourages moral hazard (recklessness) on the part of the borrowing firm because the managers/owners/shareholders lose relatively little, with the bulk of the losses borne by the creditors, when the firm fails, but retain the bulk of the profits when the firm succeeds.
- ◆ Excessive leverage also in turn increases the risk of other firms having such a firm as a “counter-party.”
- ◆ Excessive leverage of a firm also magnifies the negative spillover effects of its potential bankruptcy—not only does it have to shut down but its failure also impacts negatively all of its creditors, contractors, lenders and suppliers, firms that may otherwise be well managed but happen to do business with it.

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## Excessive Leverage

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- ◆ When should leverage be considered to be excessive?
- ◆ Leverage is considered to be excessive when the assets-to-equity ratio is greater than 12.5 to 1 for a financial institution (following the currently accepted international practice of 8% capital requirement) and greater than 5 to 1 for a non-financial firm (the norm for New York Stock Exchange-listed non-financial firms is no more than 2 to 1).

# Excessive Leverage

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- ◆ The excessive leverage of banks in developed economies did not just happen overnight. It was the combined result of lax regulation and supervision, “regulatory capture,” and the competitive pressure in the financial markets.
- ◆ Banks compete with one another. If a bank is allowed to have a higher leverage, its return on equity will be higher than its competitors, at least in the short run. In order to compete effectively, its competitor banks will need to emulate the high leverage, resulting in excessive leverage across the board.

# Failure to Ensure Competitive Markets

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- ◆ Markets yield economically efficient outcomes only if they are competitive.
- ◆ Markets are competitive only if they fulfill the following basic conditions:
  - ◆ (1) All market participants and potential market participants have access to the same or nearly the same information (although their expectations of the future can be different).
  - ◆ (2) All market participants and potential market participants are small relative to the market so that no one participant can affect the outcome of the market through its actions or inactions; and
  - ◆ (3) All market participants and potential market participants are free to enter or exit the market at any time.

## Failure to Reduce Information Asymmetry

- ◆ The regulatory agencies failed to demand full and complete disclosure of financial information and large financial transactions, especially transactions conducted off public exchanges, by large financial institutions and other publicly listed companies.
- ◆ They also failed to demand that large investors disclose major positions held on securities and other traded financial instruments by them, as is required for shares and contracts traded on public exchanges, resulting in severe information asymmetry which in turn affects the efficiency and fairness of the markets and the proper governance of firms. 刘遵义 Lawrence J. Lau

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## Information Asymmetry and Off-Balance-Sheet Activities

- ◆ Information asymmetry is also created when the financial balance sheets of a corporation fail to provide a true picture of the corporation's conditions, for example, when the corporation has significant off-balance-sheet activities.
- ◆ Off-balance-sheet activities conducted by Enron Corporation were the principal cause of its collapse. Enron ultimately had to recognise on its balance sheets all the losses incurred in its off-balance-sheet activities. The venerable auditing firm Arthur Andersen was also dragged down along with Enron. It was the largest corporate bankruptcy in the United States before the failure of Lehman Brothers. 刘遵义 Lawrence J. Lau

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# Information Asymmetry and Off-Balance-Sheet Activities

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- ◆ By allowing off-balance-sheet activities, corporations are implicitly encouraged to take “hidden actions,” and that further increases moral hazard. Such hidden actions enable the firm to take on excessive leverage and circumvent regulations on capital adequacy without the knowledge of its board of directors, its shareholders, the public and even the regulatory agencies.

# Information Asymmetry and Off-Balance-Sheet Activities

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- ◆ However, neither the U.S. Securities and Exchange Commission nor the U.S. Congress learnt the lessons of the failure of Enron Corporation and have continued to allow publicly listed companies to engage in off-balance-sheet activities. The Sarbanes-Oxley Act of the United States, which is supposed to prevent a recurrence of failures such as Enron, fails to address this most important issue at all, despite its many costly and intrusive provisions on corporate governance and auditing.



# Information Asymmetry and Off-Balance-Sheet Activities

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- ◆ Many of the world's largest banks, Citicorp, HSBC, UBS, etc. suffered huge losses in this financial crisis because of their off-balance-sheet activities in the form of “special investment vehicles (SIVs)” or “structured investment vehicles (also known as SIVs),” and ultimately had to take these off-balance-sheet activities onto their balance sheets and write off hundreds of billions (US\$) of bad assets.
- ◆ Even sovereign governments such as Greece engaged in off-balance-sheet activities with the help of some financial institutions.

# Failure to Ensure Competitiveness of Markets

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- ◆ Because of the lack of full disclosure of information and the opaqueness of non-public markets, players with large dominant positions can make use of their market power to manipulate the markets without revealing any of their transactions. Under these circumstances, the interests of small investors are not adequately protected.

# Information Asymmetry and Credit Ratings

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- ◆ The credit ratings provided by the credit rating agencies have lost much of their credibility and reliability, further aggravating the problem of information asymmetry. There are good reasons why credit ratings are not as reliable as they used to be. They will be discussed below.

## Failure to Control Moral Hazard

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- ◆ It is well known that moral hazard on the part of the various market participants, if not appropriately recognised, discouraged and restrained, can play havoc with the markets and institutions and increase the overall risk to the financial sector and the entire economy.
- ◆ However, the regulators failed to do so—there is moral hazard everywhere, ranging from the originating mortgage lenders, credit rating agencies, purchasers of credit default swaps, asymmetric incentive compensation of executives of firms, especially financial institutions and hedge funds, and being “too big to fail,” to name only a few. Each of these moral hazards will be discussed in turn.

## Moral Hazard and the Originating Mortgage Lenders

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- ◆ The originating lenders of sub-prime mortgage loans made residential mortgage loans to borrowers with no capacity for repayment of either interest or principal, based only on a vague hope of an appreciation of the price of the property in the future.
- ◆ In the following chart, the Case-Shiller U.S. Home Price Index, which can be taken as a proxy for the speculative asset price inflation in the U.S. residential housing market, is presented. The chart shows clearly that the U.S. Home Price Index began to rise in 2000 and managed to double by 2006 when it reached its peak and began its decline.

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## Moral Hazard and the Originating Mortgage Lenders

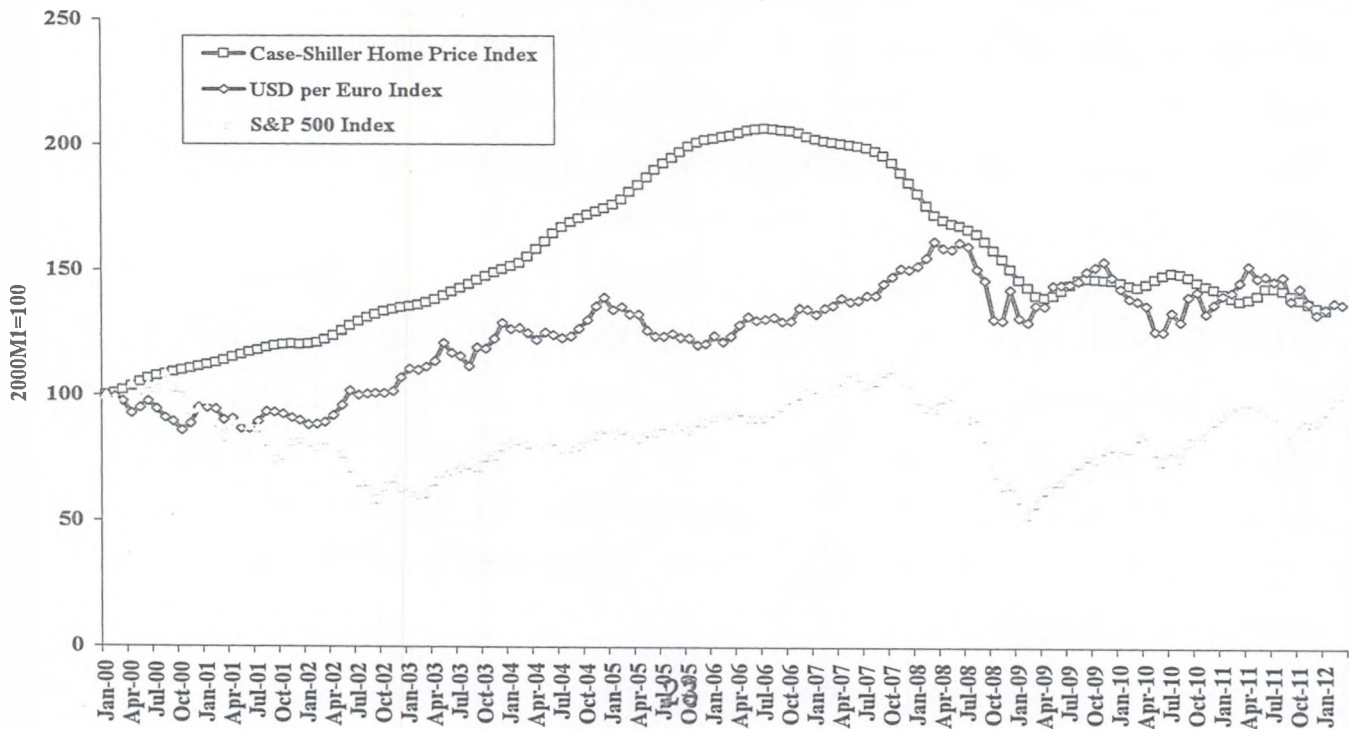
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- ◆ The originating lenders were allowed to sell these mortgage loans off through securitisation with no residual liability. Thus, they had no incentive to make sure that the loan would perform—that the borrower was credit-worthy and had a means of repayment and that the collateral was worth its value. There was no attempt to check the borrower's credit-worthiness or the property's real value, since the mortgage loans would be sold to other investors without recourse to the originating lender.
- ◆ The volume of substandard mortgage loans (including both Alt-A and sub-prime loans) began growing in 2000 and by 2006 accounted for almost half of all mortgage loans made in the United States (see the next slide).
- ◆ It was these sub-prime mortgage loans that drove up the home prices successively in all segments of the market.

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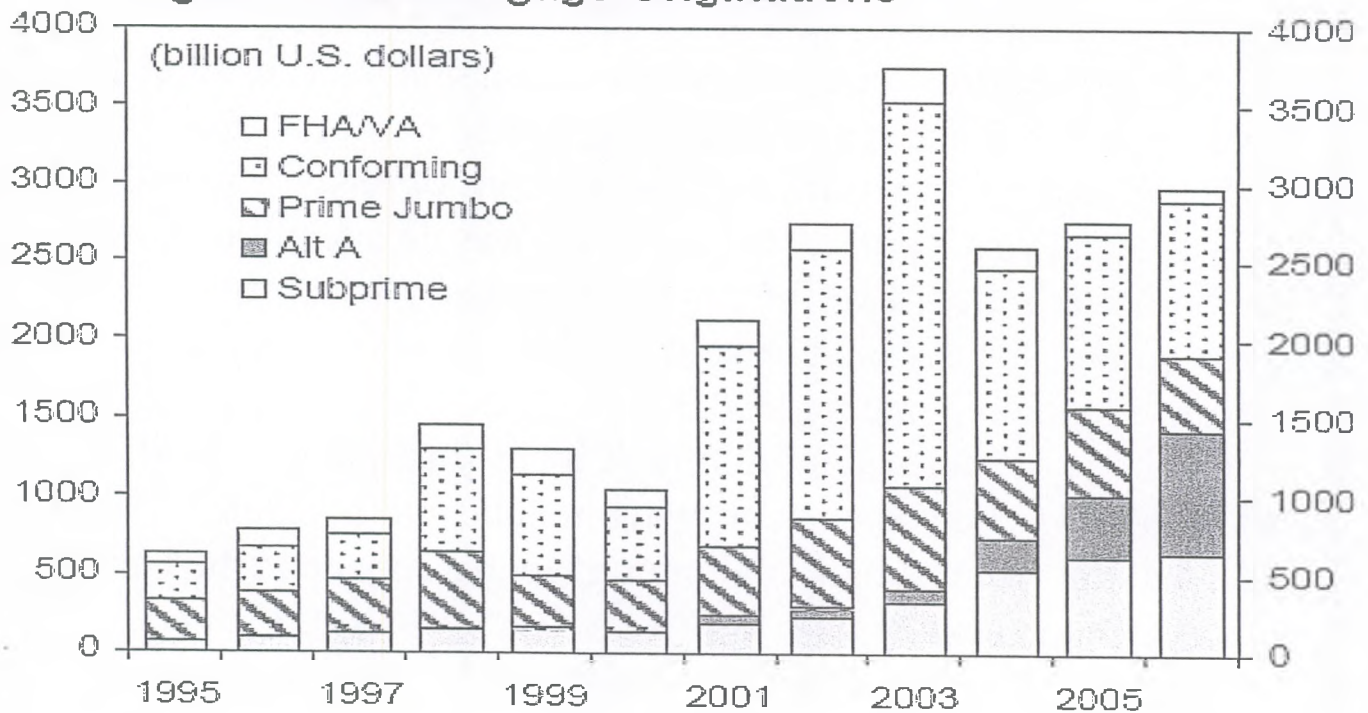
# Case-Shiller U.S. Home Price Index, US\$-Euro Exchange Rate & the S&P 500 Index

Comparison of Case-Shiller U.S. Home Price Index, US\$-Euro Exchange Rate and S&P 500 Index (2000M1=100)



## Growth in U.S. Mortgage Originations: from John Kiff and Paul Mills (2007)

Figure 3. All Mortgage Originations



Source: Inside Mortgage Finance

## Moral Hazard and Credit Ratings

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- ◆ It does not help that the credit rating agencies did not fulfill their function of properly assessing the risk of the sub-prime mortgage loan-backed securities, or for that matter, other similar asset-backed securities.
- ◆ One of the problems is that a credit rating agency is nowadays paid by the firm it rates, but if the firm does not like the rating it receives from that particular credit rating agency, it does not have to pay but can go on to another credit agency until it finds one that will give it a satisfactory rating. But credit rating agencies want and need to be paid, and may therefore compromise their judgment (thus moral hazard once again). Thus published credit ratings are likely to be biased upward.

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## Excessive Leverage Encourages Moral Hazard

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- ◆ Excessive leverage encourages moral hazard and high-risk-taking because it reduces the potential pain that may result from a loss.
- ◆ However, moral hazard, that is, “hidden action,” and lack of full information disclosure, also help to enable excessive leverage. For example, by keeping potential liabilities off the balance sheet of a financial institution enables that institution to have a much higher actual leverage than otherwise allowed by the regulatory agencies.

## Moral Hazard and Credit Default Swaps

- ◆ It is well known that insurance is subject to moral hazard, that is, the insured may for other reasons undertake “hidden action” to trigger the insurance pay-off. For example, a person may set fire to his or her own house, or to someone else’s house on which he or she has taken out fire insurance, to collect the insurance proceeds.

## Moral Hazard and Credit Default Swaps

- ◆ Credit default swaps (CDSs) are new financial instruments introduced in the late 1990s that are totally unregulated. In principle, they are insurance contracts on the bonds, the outstanding obligations, of a firm. The CDSs pay off in the event there is a default on the bonds by the issuing firm.
- ◆ As indicated above, a fundamental principle of insurance is that the insured must have an insurable interest. Otherwise it would encourage moral hazard. (And moreover, to discourage moral hazard, insurance should be less than full.)

## Moral Hazard and Credit Default Swaps

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- ◆ Thus, for example, it is reasonable for someone who owns Lehman Brothers bonds, or who is a contractor or supplier owed money by Lehman Brothers, to purchase a CDS from American International (AIG) Group (an insurance company) up to the amount outstanding. But it is not reasonable for anyone else with no direct exposure to Lehman Brothers, especially if this person has the power to influence whether Lehman Brothers would go into bankruptcy, to purchase CDSs on Lehman Brothers, or to purchase an amount of CDS greater than the actual financial exposure.
- ◆ However, the insurance companies that sold CDSs lost sight of the fact that they were selling insurance. They thought they were just taking bets. Indiscriminate sale of credit default swaps (CDSs) is the principal source of AIG's problems.

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## Moral Hazard and Credit Default Swaps

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- ◆ It is like allowing many strangers to buy insurance on someone's house, creating an incentive for them to set fire to it and collect the insurance.
- ◆ But AIG sold many times more CDSs on Lehman Brothers than Lehman Brothers had bonds outstanding (reportedly much more than ten times). Many purchasers of such CDSs were simply gambling on a Lehman Brothers failure. It would have been better if these purchasers had no influence on whether Lehman Brothers would go under or not.

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## Moral Hazard and Credit Default Swaps

- ◆ One reason why the CDSs were not regulated as insurance is because the U.S. Congress passed legislation in the late 1990s, declaring that CDSs were neither insurance nor gaming, thus effectively enabling CDSs to escape possible government regulatory supervision altogether.
- ◆ In retrospect, the availability of CDSs on Lehman Brothers actually increased the probability of failure of Lehman Brothers rather than decreased it, thus increasing rather than decreasing the overall riskiness of the financial sector and the economy.

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## Moral Hazard and Asymmetric Incentive Compensation

- ◆ The incentive compensation schemes at most U.S. corporations and at many investment funds are asymmetric in the sense that the executive/asset manager stands to reap huge rewards tied to the degree of success over and above a certain benchmark (through stock options and “carry interest”) but does not share in the losses (beyond possibly losing his or her job).
- ◆ These stock options and “carry interest”, which allow executives and asset managers to share the upside but not the downside, also create moral hazard and encourage corporate executives and asset managers to take excessive risks.

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## Moral Hazard and “Too Big to Fail”

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- ◆ Implicit guarantees of banks and financial institutions considered “too big to fail” by governments encouraged moral hazard on the part of the large banks and financial institutions. They took excessive risks with the belief that they will not fail and will not be allowed (by the governments) to fail.
- ◆ No firm, financial or otherwise, should be allowed to become too big to fail. For example, if a bank fails, the depositors should be protected insofar as there is deposit insurance. The secured creditors are compensated in whole or in part by the collateral they already hold. The other creditors presumably have bought the debt of the bank on their own free will, can take the losses. And the shareholders, who will be in the last position, may wind up with nothing. But there is no reason for the bank not to continue operating, under new management and ownership.

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## Moral Hazard and “Too Big to Fail”

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- ◆ A firm is only “too big to fail” if it is heavily leveraged. If it is not heavily leveraged, it can be simply allowed to fail (the shareholders will lose but another firm or investor can take over its functions).
- ◆ It is the excessive leverage of the bank that may make it too big to fail—it may owe other banks and financial institutions, bondholders and other creditors too much money.

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# Defects in Institutional Design

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- ◆ Defects can be identified in the following areas:
  - ◆ (1) The locus of regulation and supervision;
  - ◆ (2) The financial accounting standards;
  - ◆ (3) The form of securitisation of loans; and
  - ◆ (4) The specialisation of banks.

## Defects in Institutional Design: The Locus of Regulation and Supervision

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- ◆ There is no universal agreement on how banks and financial institutions should be regulated and supervised. There are two separate issues: first, whether commercial banks and commercial banking activities are better regulated and supervised by the central bank or by a separate agency and second, whether all banking activities of any kind (commercial banking, investment banking, securities firms and markets, and insurance) should be regulated and supervised by a single, unified regulatory agency.
- ◆ The regulation and supervision of commercial banks by a financial services regulatory agency outside of the central bank has not proved to be a success in the United Kingdom. This is because the central bank has valuable, continuous, real-time information on the state of the commercial banks through its funds clearing and settlement system that is not readily apparent in periodic audits, and that the central bank has the crucial role of being “the lender of last resort.”

## Defects in Institutional Design: The Locus of Regulation and Supervision

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- ◆ In the United Kingdom, the responsibility of regulating and supervising the commercial banks has been given back to a unit within the Bank of England, the central bank.
- ◆ In the United States, regulation and supervision of banks are not unified. The responsibilities are divided among the Federal Reserve Board, the Federal Deposit Insurance Corporation, the Comptroller of Currency (for national banks) and the Banking Commissioners of the 50 individual states. The Federal Reserve Board has de facto, if not de jure, assumed the responsibility of the regulation and supervision of the major commercial banks.

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## Defects in Institutional Design: The Locus of Regulation and Supervision

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- ◆ Such diffusion of responsibility has prevented the regulators and supervisors from acting decisively in a timely manner when crises arise.
- ◆ Moreover, the regulation and supervision of (non-deposit-taking) investment banks, securities firms and insurance companies are frequently scattered among different agencies with little formal coordination. This may work in a Glass-Steagall environment but is woefully inadequate when the Glass-Steagall Act no longer applies.

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## Defects in Institutional Design: The Financial Accounting Standards

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- ◆ First, off-balance-sheet activities of banks as well as other publicly listed corporations are a major cause of the financial crisis. They should be prohibited outright except under the most special circumstances and only with explicit prior written approval of the regulators/supervisors/auditors. All contingent liabilities and significant exposures should be fully disclosed.

## Defects in Institutional Design: The Financial Accounting Standards

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- ◆ Second, mark-to-market rules may exacerbate a crisis because of the uncertainty and volatility in the financial markets. By marking to market, a financial institution may fall short of the capital requirements and be forced to sell assets and contract. Selling assets and contraction may drive asset prices lower, requiring further marking down to market, which in turn may lead to further selling of assets and contraction. It should be possible to suspend mark-to-market rules when market conditions are too volatile and the market prices fail to reflect underlying values.

# Defects in Institutional Design: The Form of Securitisation of Loans

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- ◆ There are two routes to the securitisation of long-term loans-- principally owner-occupied home loans backed by first mortgages-- direct securitisation and indirect securitisation.
- ◆ Direct securitisation takes the form of long-term bonds issued to the public against a package of qualified long-term loans (assets) meeting certain specifications as collateral. The principals of and the interest paid on the loans are owned by the purchasers of these bonds. The bonds may be issued by a financial institution or guaranteed by a financial institution.
- ◆ In the case of many mortgage loans in the U.S., the issuing or guaranteeing financial institution is often either Fannie Mae or Freddie Mac, both quasi-sovereign financial institutions. The bondholders, in the absence of explicit guarantees, primarily look to the package of loans as the underlying security.

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# Defects in Institutional Design: The Form of Securitisation of Loans

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- ◆ Indirect securitisation takes the form of long-term bonds issued directly to the public by a bank, the primary business of which is to purchase qualified long-term loans meeting certain specifications (with the maturities of the bonds matching the maturity of the loans).
- ◆ The bank uses the proceeds from the bonds to purchase these qualified loans from originating mortgage lenders. The loans are owned by the financial institution. The borrowers pay the interest and any repayment of principal on the loans to the financial institution, sometimes through the originating lenders who may be retained as servicing agents for a fee, and the financial institution pays the bondholders, regardless of whether it has been paid by the borrowers.

# Defects in Institutional Design: The Form of Securitisation of Loans

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- ◆ There are several advantages of indirect securitisation over direct securitisation.
- ◆ First, the bonds issued will have quasi-sovereign status if the financial institution is established as a state policy bank (which was originally the case for Fannie Mae and Freddie Mac) and will therefore be able to carry a lower rate of interest. The lower rate of interest will also benefit the borrowers of the owner-occupied residential mortgage loans.
- ◆ Second, there is pooling of the risks of default on the mortgage loans under indirect securitisation, so that the risks are spread and shared by purchasers of successive issues of bonds of the bank, whereas under direct securitisation, there is no pooling across successive packages of loans. The actual risks and returns to purchasers of directly secured mortgage-loan backed securities can therefore vary significantly from package to package.

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# Defects in Institutional Design: The Form of Securitisation of Loans

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- ◆ Third, if the originating mortgage lenders are required to assume a residual liability of say 10 percent of the principal of the mortgage loan they originate (which is good for controlling moral hazard), it is much easier to enforce with the bank as the purchaser of the mortgage loans rather than a group of bond investors.
- ◆ Fourth, in the event of a default by one or more borrowers on their mortgage loans, since the mortgage loans are owned directly by the bank, it is much easier to have a work-out between the borrower and the bank, through the servicing agent, under indirect securitisation. Under direct securitisation, it is much more difficult and costly for the current owners of the bonds to negotiate a work-out with the individual non-performing borrowers. While direct securitisation per se is not to be blamed for the crisis, it greatly complicates the resolution of and prolong the negative impacts of the crisis. Many non-performing mortgage loans in the U.S. remain to be worked out between the borrowers and the current owners of the mortgage loans.

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## Defects in Institutional Design: The Form of Securitisation of Loans

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- ◆ Fifth, under indirect securitisation, there will also be greatly reduced transactions costs and there is no need to rely on credit rating agencies to rate each particular package of mortgages or on investment banks to package and promote and market the mortgage loans to the investing public.
- ◆ Sixth, for the investors and potential investors, the market for these indirectly mortgage-backed bonds will be much bigger as well as more liquid.
- ◆ One possible complication is whether there should be a pre-payment penalty for these loans (there should be, in order to keep the transactions cost and hence the rate of interest low), but the same problem is there whether the mortgage loans are directly or indirectly securitised.
- ◆ The only disadvantage of indirect securitisation is that the investment banks will no longer be able to earn fat fees for securitising these mortgage loans.

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## Defects in Institutional Design: The Specialisation of Banks

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- ◆ Should banks that accept retail deposits from the general public be allowed to engage in proprietary trading in securities for their own accounts? This issue was considered in the recent discussion of financial reform legislation in the United States.
- ◆ In principle, it should be fine if the proprietary trading is done with a bank's own resources and the amount at risk is subtracted from the bank's capital as far as the calculation of the bank's capital adequacy is concerned. The depositors' funds are not used at all in the proprietary trading.

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## Defects in Institutional Design: The Specialisation of Banks

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- ◆ The problem arises when there is potential for conflict of interest (e.g., the bank's proprietary trading unit selling a security that the bank's trust or private banking department is buying on behalf of a bank customer) and when there is illegal use of information on the bank's customers by the bank's proprietary trading unit in its trading. Even though there is supposed to be a "Chinese Wall" separating the proprietary trading unit from the commercial banking unit but experience tells us that these "Chinese Walls" can become very porous.

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## Defects in Institutional Design: The Specialisation of Banks

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- ◆ The same consideration applies to the bank conducting both investment banking and commercial banking activities at the same time.
- ◆ Conflicts of interest can easily arise. For example, the investment banking unit may try to raise capital for a corporation to repay a loan to the commercial banking unit without fully disclosing the true conditions of the corporation. For another example, the commercial banking department may extend a loan to a customer to buy securities being marketed by the investment banking unit.

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## Defects in Institutional Design: The Specialisation of Banks

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- ◆ These problems can be avoided if the banks specialise. But the most compelling argument is that there does not seem to be any real synergy between investment banking and commercial banking if all the laws and regulations on avoidance of potential conflict of interest and sharing of information are properly followed. So why put them together?

## Defects in Institutional Design: The Specialisation of Banks

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- ◆ While many banks are attempting to become whole banks or universal banks, one should also consider the establishment of specialised banks with special missions. These banks can be regulated and supervised differently from the other banks.
- ◆ For example, banks established to promote a particular government policy, such as Fannie Mae and Freddie Mac in the United States, should not be privatised, even in part. This is because once a policy bank is privatised, even in part, the private shareholders will demand short-term profits and returns which may not be consistent with the mandate and mission of the policy bank.

## Defects in Institutional Design: The Specialisation of Banks

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- ◆ If Fannie Mae and Freddie Mac were not publicly listed, it would not have been subject to the pressure of shareholders demanding a financial return, and might therefore have been more prudent in its expansion and acquisition of loans. This might have helped avoid the financial crisis or at least reduce its intensity.
- ◆ The senior management of such policy banks should also be compensated differently from those of private, for-profit, banks so as to reduce the incentive to take risks.

## What Caused the European Debt Crisis?

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- ◆ The source of the problem is the accumulation of public debt, incurred to support a series of government budget deficits, to a level that is beyond the servicing capacity of the country.
- ◆ If the public debt were mostly internal, such as in Japan, which has a public debt to GDP ratio in excess of 200 percent, the problem is manageable. It is a little like debt within the same family. The son borrows from the father. When the father demands repayment from the son, the son goes to the mother and asks for money to repay the father. The mother asks the father for money. Father gives money to mother, mother gives money to son, and son repays the father. This completes the circle. This arrangement can continue more or less indefinitely, especially if the rate of interest is low.

## What Caused the European Debt Crisis?

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- ◆ The problem arises if the debt were mostly external, as in the case of Greece.
- ◆ The other option of solving the problem through printing more money is not available to Greece because it does not have the authority to issue Euros (unlike the United States, which can increase the supply of U.S. Dollars at will).
- ◆ The solution for Greece is therefore severe austerity or exit.
- ◆ It does not help that there are many speculators speculating on an eventual Greek default. The indiscriminate sale of credit default swaps (CDSs) on Greek debt, and for that matter on the debt of other members of the Euro Zone, even to speculators who do not own the underlying bonds, exacerbated an already bad situation.

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## What Caused the European Debt Crisis?

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- ◆ The Euro Zone authorities should have stepped in more decisively and forcefully to maintain confidence in the Euro and Euro Zone debt. Confidence, once lost, is extremely difficult to restore.

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## Excessive Exchange Rate Volatility

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- ◆ Excessive exchange rate volatility discourage long-term international trade and direct investment across currency areas.
- ◆ Long-term (over 24 months) hedges against exchange rate changes are generally not available, and if available are prohibitively expensive, and subject to significant counter-party risks.
- ◆ While excessive exchange rate volatility may be related, in part, to short-term portfolio investment flows, it is caused primarily by volatile short-term (defined as less than 12 months) speculative cross-currency capital flows.

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## Excessive Exchange Rate Volatility

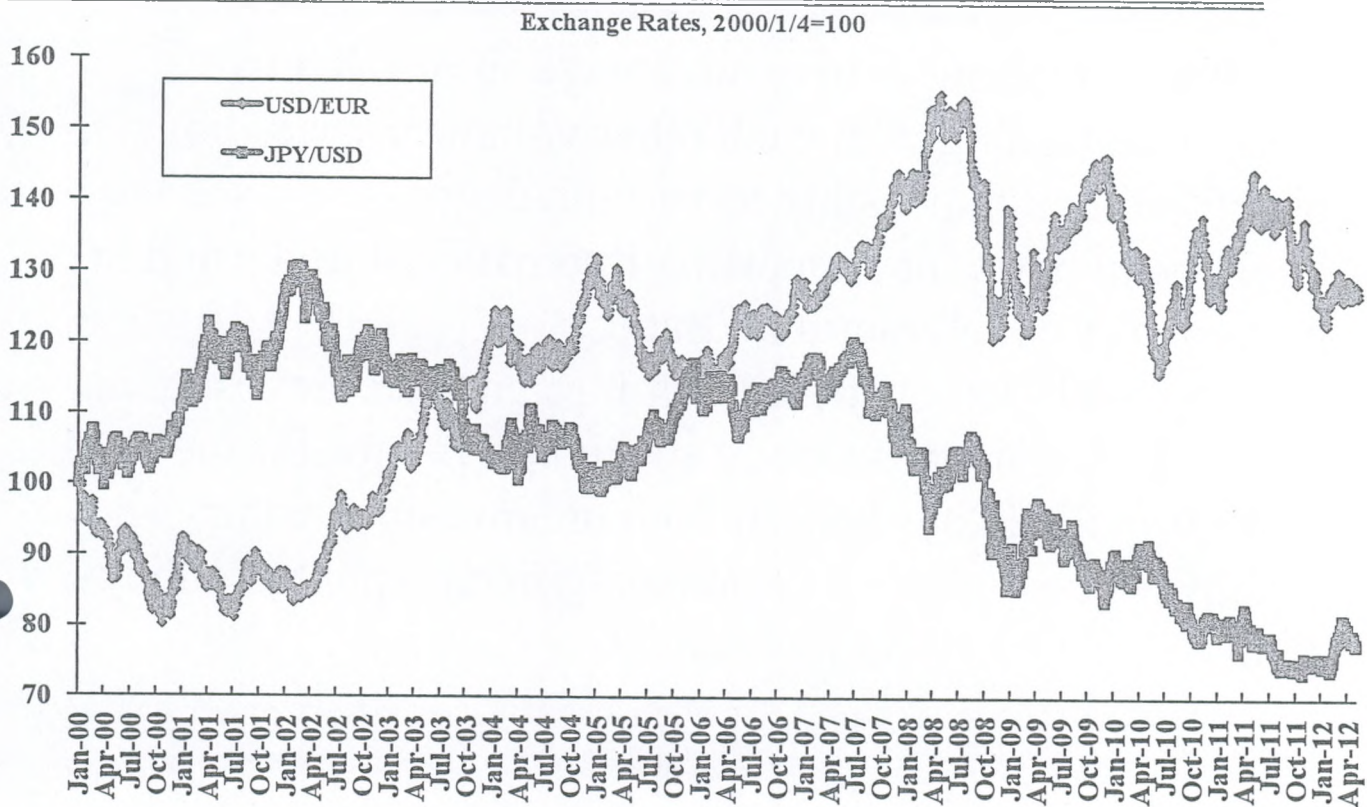
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- ◆ The observed exchange rate volatility today is largely unrelated to international trade flows or to direct investment flows, which have been quite stable on the whole.
- ◆ Moreover, exchange rate volatility in itself also in turn attracts further speculation from hedge funds and other speculators taking advantage of the volatility to speculate on short-term exchange rate changes, and hence may lead to even more short-term international capital inflows or outflows and even greater exchange rate volatility.

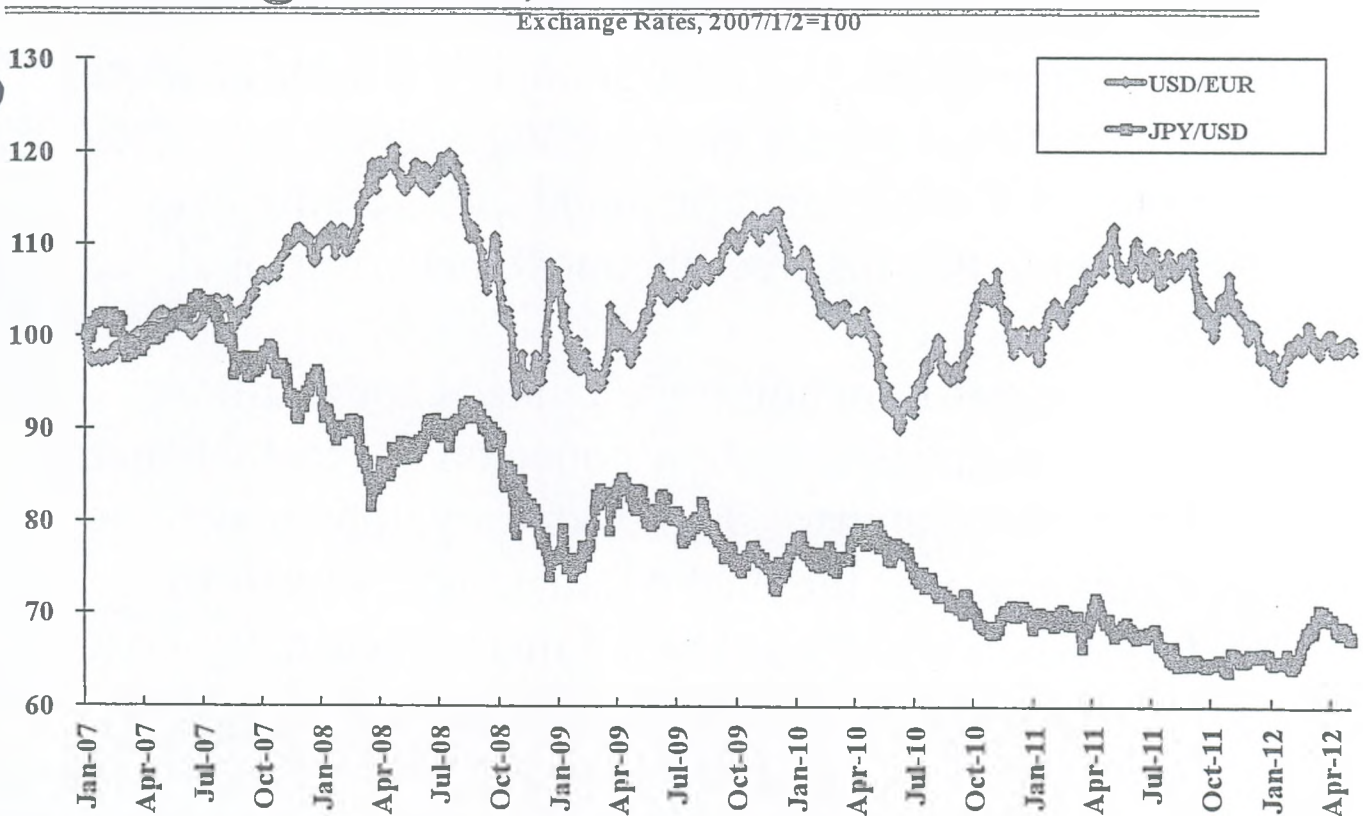
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# Volatility of US\$/Euro and Yen/US\$ Exchange Rates, 2000/01/04=100



# Volatility of US\$/Euro and Yen/US\$ Exchange Rates, 2007/01/02=100



## Excessive Exchange Rate Volatility

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- ◆ The theory of comparative advantage shows that two economies trading with each other voluntarily will both benefit, although possibly to varying degrees. This is the intellectual basis for supporting international trade, and in particular, free international trade.
- ◆ It is also well demonstrated that foreign direct investment undertaken in the absence of special privileges for the investor will always benefit both the investor-country and the investee-country. The same argument applies to long-term foreign portfolio investment.

## Excessive Exchange Rate Volatility

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- ◆ However, there is no similar argument in favour of short-term international capital movements, with the exception of short-term trade-related financing. It is simply an article of faith that the freer the movement of capital, the better.
- ◆ Moreover, short-term non-trade related capital inflows that can be withdrawn at short notice do not really benefit the destination country. On the contrary, they may do it significant harm, as the East Asian currency crisis of 1997-1998 and numerous Latin American currency crises amply demonstrated.

## Excessive Exchange Rate Volatility

- ◆ The problem with short-term capital inflows is that they cannot be usefully deployed in the destination country. When they are used to finance long-term investment in the destination country, they invariably lead to trouble because of the maturity mismatch which is further exacerbated by the currency mismatch.
- ◆ However, as they flow in and out of the destination country, they cause the exchange rate of the destination country to become excessively volatile, inhibiting the flows of cross-border trade and long-term investment to and from the destination country, and disrupting its real economy.

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## Excessive Exchange Rate Volatility

- ◆ It is also not clear what good short-term capital outflows do to the origin country. (Under “Quantitative Easing II” of the U.S., if the liquidity created by the U.S. Federal Reserve Board had stayed in the U.S., it might have done the U.S. economy some good; but since most of it flowed out of the U.S., it is not clear whether and if so how it benefitted the U.S. economy.)

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## What Lessons Can We Learn?

### Appropriate Monetary Policy

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- ◆ In an economy without a stock or security market, the total value of transactions, for a given level of real GDP, is lower than the total value of transactions in an economy in which there are the financial transactions of buying and selling stocks and securities in addition to the real transactions.

## What Lessons Can We Learn?

### Restrain Irrational Exuberance

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- ◆ The financial regulatory agencies should monitor asset (securities and property) markets and take appropriate measures to prevent asset price bubbles from becoming too big.
- ◆ The fundamental idea is to try to influence and modify long-term asset price expectations. If additional supplies are expected to be forthcoming in the future the asset price bubble cannot become too big.



# What Lessons Can We Learn?

## Regulation is Essential

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- ◆ Markets do not and cannot function well automatically on their own. The incentives are too strong for firms, if left alone, to try to monopolise markets or to otherwise benefit themselves at the expense of other market participants (e.g., insider trading, front running). Excessive leverage cannot be left to self-regulation. Information asymmetry can be reduced only through regulatory measures (there is no reason for an investor to disclose information voluntarily to one's potential competitors in the financial markets). Moral hazard must also be explicitly discouraged and controlled.
- ◆ Strengthened financial regulation and supervision is essential to avoid a recurrence of another financial crisis of similar magnitude to the current global financial crisis.

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## Strengthening Financial Regulation and Supervision

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- ◆ What measures should be taken by financial regulatory and supervisory agencies to strengthen financial regulation and supervision?
  - ◆ (1) Restrict excessive leverage;
  - ◆ (2) Ensure competitiveness of markets; and
  - ◆ (3) Control moral hazard.

# Strengthening Financial Regulation and Supervision

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- ◆ If any bank or financial institution cuts corners, its costs will be lower and its profits will be higher. If the regulator allows a bank or financial institution to cut corners, other banks will be forced to follow in order to compete.
- ◆ Thus, in order to reduce systemic risk financial regulation and supervision must be uniformly enforced. It is most important for the regulator not to allow bad practices gradually become industry-wide standard practices. Regulations must be clear and enforcement must be strict. Otherwise all the grey areas will appear white in no time.
- ◆ The regulatory agencies should always remember that their primary responsibility is the protection of consumers (depositors and borrowers), creditors and investors, ensuring the fairness and efficiency of the markets, and the security and stability of the financial system as a whole. It is not their responsibility to assure the profitability of the firms they are charged to regulate.

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## What Lessons Can We Learn?

### Restrict Excessive Leverage

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- ◆ Because of the negative externalities generated by excessive leverage, there is public interest in controlling the degree of leverage of firms, especially financial institutions. Excessive leverage should therefore be tightly controlled. Capital adequacy should be monitored.
- ◆ A firm is only “too big to fail” if it is heavily leveraged. If it is not heavily leveraged, it can be simply allowed to fail (the shareholders will lose but another firm or investor can take over its functions).
- ◆ There must be restrictions on the degree of leverage in the economy, especially for the financial sector.
- ◆ Limits on leverage is easy to enforce and difficult to circumvent provided that off-balance-sheet activities are not allowed.

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# What Lessons Can We Learn?

## Ensure Competitiveness of Markets

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- ◆ The regulatory and supervisory agencies should ensure competitiveness of the financial markets by reducing information asymmetry, increasing disclosure and transparency, and restricting dominant positions of market players.

# What Lessons Can We Learn?

## Reduce Information Asymmetry

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- ◆ The public will be much better informed if off-balance-sheet activities are not allowed for publicly listed firms, including all financial institutions. This will also improve corporate governance, reduce leverage, and avoid negative surprises.
- ◆ The practice of “shadow banking,” which leads to undisclosed “excessive leverage” and increases significant systemic uncertainty should be prohibited—the banks should either make a direct loan to a corporation, or provide an explicit guarantee on the bonds and notes issued by the corporation, all of which will be explicitly on the balance sheet of the Bank. At the current stage of financial development in many developing economies, allowing “shadow banking” will greatly increase systemic risk in these economies.

# What Lessons Can We Learn?

## Increase Disclosure and Transparency

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- ◆ The introduction of the many new financial instruments has created additional problems for the regulators— instead of reducing and sharing risks, they concentrate and magnify risks and increase overall systemic risk.
- ◆ Many of these complex and non-standard financial instruments are priced and traded only privately (e.g., accumulator) and not on open public markets and exchanges. There is a crying need for simplification and standardization of financial derivatives and for them to be traded only on established and publicly regulated open exchanges. This assures some degree of transparency and fairer pricing, safeguards against market manipulation, and helps to reduce counter-party and systemic risks.

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# What Lessons Can We Learn?

## Restrict Dominant Positions

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- ◆ Dominant positions (e.g., over 5% share of any specific traded financial instrument) in any financial markets should be required to be disclosed, as well as any subsequent increase or decrease in such positions. In these instances, the final beneficial owners should be disclosed to avoid the use of multiple names and accounts to circumvent the disclosure requirement.
- ◆ For certain instruments, there should be an upper limit to the market share that can be held by a single person or entity.

# What Lessons Can We Learn?

## Control Moral Hazard

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- ◆ Moral hazard should be controlled and discouraged by the regulators, so that any potential gain is accompanied by potential pain, reducing excessive risk-taking on the part of all market participants.
- ◆ This includes the regulation and supervision of the originating mortgage lenders, credit rating agencies, insurance companies and their products and business practices as well as the degree of leverage of firms, including financial institutions and hedge funds. The goal is to reduce the incentive to take “hidden actions” and/or excessive risks.

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# What Lessons Can We Learn?

## Control Moral Hazard

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- ◆ If Credit Default Swaps (CDSs) were to be introduced in the developing economies such as China at all, they should be sold to only bona fide owners of the underlying bonds. And once the original owners sell the bonds, they should not be allowed to keep the CDSs—they will either have to be sold, with the bonds, to the new buyer, or they should be returned to the insurance company for a refund, if any.

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# What Lessons Can We Learn?

## Do Not Allow “Too Big to Fail”

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- ◆ No firm should be allowed to become too big to fail. For example, if a bank fails, the depositors should be protected insofar as there is deposit insurance. The secured creditors are compensated in whole or in part by the collateral they already hold. The other creditors presumably have bought the debt of the bank on their own free will, can take the losses. And the shareholders, who will be in the last position, may wind up with nothing. But there is no reason for the bank not to continue operating, under new management and ownership.
- ◆ It is the excessive leverage of the bank that may make it too big to fail—it may owe other banks and financial institutions too much money. If excessive leverage is curbed, and the diversified exposure requirement is strictly enforced, that is, a bank cannot be over-exposed to a given customer (with a group considered as a single customer), no bank should be able to become too big to fail.

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# What Lessons Can We Learn?

## Improve the Institutional Design

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- ◆ The risk of systemic failure of the financial sector can be reduced by appropriate choices of features of its institutional design. Here we consider four major areas where improvement is possible:
  - ◆ (1) The locus of regulation and supervision;
  - ◆ (2) The financial accounting standards;
  - ◆ (3) The method of securitisation of loans; and
  - ◆ (4) The specialisation of banks.

## What Lessons Can We Learn?

### The Locus of Regulation and Supervision

- ◆ Regulation and supervision of (deposit-taking) commercial banks are best lodged in a department within the central bank. In any case, close coordination between the central bank and any separate banking regulatory and supervisory agency is essential.

## What Lessons Can We Learn?

### The Locus of Regulation and Supervision

- ◆ While there are calls for the return of the Glass-Steagall Act in the United States, it does not appear likely at this juncture. However, with whole or universal banking, it is necessary that the different regulatory and supervisory agencies—banking, securities and insurance—examine financial institutions jointly to deter the shifting of assets from one unit to another in order to avoid regulatory and supervisory scrutiny and worse, to hide the true state of affairs.
- ◆ Unless there is a determination to bring back Glass-Steagall Act or its equivalent, unified regulation and supervision is absolutely essential and urgent.

# What Lessons Can We Learn?

## The Financial Accounting Standards

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- ◆ The first major regulatory reform on financial accounting standards should be the prohibition of off-balance-sheet activities of banks as well as other publicly listed corporations, except under the most special circumstances.
- ◆ Second, mark-to-market rules should be evaluated as to under what circumstances they should be mandatory and under what circumstances they can be optional. The objective is to present as true a picture as possible and to avoid misleading the investors.
- ◆ Third, quarterly reporting should be made optional for publicly listed firms. Investors can decide whether they will invest in firms that do not report quarterly.

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# What Lessons Can We Learn?

## Improve the Institutional Design

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- ◆ Indirect securitisation is the preferred route to go to support the long-term fixed-interest-rate residential mortgage loans.
- ◆ The “Volcker Rule” protects the interests of the retail depositors and should be adopted.
- ◆ Policy banks should not be privatised, even in part, and in particular should not be publicly listed, so as to avoid shareholders’ pressure for quick returns and potential conflict between the interests of the shareholders and the policy bank’s public policy mission.

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# What Lessons Can We Learn?

## The European Sovereign Debt Crisis

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- ◆ Early and decisive action is necessary in any financial crisis. The most important objective is to main confidence.
- ◆ Expectations, which are often self-fulfilling, are hard to change. Changing negative expectations to positive expectations require decisive action with a large impact. For example, the four trillion Yuan economic stimulus programme rolled out by the Chinese Government in November of 2008.
- ◆ Fiscal contraction at a time of recession feeds negative expectations about the future. It is better to have a short-term fiscal expansion to promote the resumption of growth, coupled with a longer-term plan for achieving fiscal balance in the long run.

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# What Lessons Can We Learn?

## Excessive Exchange Rate Volatility

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- ◆ Excessive exchange rate volatility is a result of the abandonment of the Bretton-Woods arrangement in the early 1970s.
- ◆ A return to Bretton-Woods does not appear likely for the time being. However, exchange rate volatility may be reduced if short-term cross-currency capital flows, which do not benefit either the origin country or the destination country in any substantive way, can be discouraged.

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# What Lessons Can We Learn?

## Excessive Exchange Rate Volatility

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- ◆ For example, this can be done through a Tobin tax, of, say 5 percent, on any non-current account related currency-exchange transactions exceeding a threshold. The introduction of a Tobin tax of say, 0.5-1%, on foreign exchange conversions above a certain threshold amount, say US \$100,000 or US\$250,000 (with a blanket exemption for current account, principally international trade in goods and services, transactions) is one way to discourage short-term speculative cross-currency capital flows.
- ◆ It can also be achieved through some form of exchange rate coordination. The formation of a currency area, such as the Euro Zone, is just a permanent form of exchange rate coordination.

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## Concluding Remarks

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- ◆ In order to avoid future financial crises and to reduce their potential intensity, strengthened regulation and supervision is necessary.
- ◆ Nations should try to put their fiscal house in order for the long term.
- ◆ Reducing short-term speculative capital flows can reduce exchange rate volatility and lessen the possibility of a currency crisis. It can also promote long-term cross-country trade and investment.