

Financial Regulation and Supervision
Post the Global Financial Crisis
(全球金融危机后的金融监管)

by

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Introduction

China and East Asia have survived the global financial crisis of 2007-9 reasonably unscathed. China has achieved a real rate of growth of 9.1 percent in 2009 and 11.1 percent year-over-year in the first half of 2010. Other economies in East Asia, such as Singapore, South Korea and Taiwan, have also begun to recover. India has also performed well. However, the same cannot be said of the United States and Europe, which are still mired in economic recession with low growth rates but high unemployment rates.

What caused the global financial crisis of 2007-2009? The principal causes were: (1) Easy money in the United States; (2) Failures of regulation and supervision; and (3) Defects in the institutional design of the financial sector.

One principal cause of the global financial crisis is regulatory and supervisory failure in the United States and Europe. What lessons can financial regulatory agencies draw from the 2007-2009 global financial crisis? What do financial regulatory agencies need to do to avoid the repetition of the same mistakes and prevent the recurrence of the same crises? This paper will focus on (1) How financial regulation and supervision should be strengthened so as to avoid failures in the future; and (2) How the institutional design of the financial sector can be enhanced so as to facilitate its successful regulation and supervision.

What are the objectives of financial regulation and supervision? They are:

- (1) Protection of consumers (depositors and borrowers);
- (2) Protection of creditors and investors from fraud;

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- (3) Ensuring competitiveness of the financial markets and hence their efficiency; and
- (4) Prevention of systemic failure.

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 U.S. financial regulators that whatever could go wrong “the market would take care of it.” It turned out that the market, in the absence of proper regulatory oversight, could not 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 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.

Strengthening Financial Regulation and Supervision

Regulatory failures have been manifested in many areas. The principal areas of regulatory failures are:

- (1) Unwillingness and inability to restrain irrational exuberance;
- (2) Excessive leverage of financial institutions (as well as some non-financial firms) and of the financial sector as a whole;
- (3) Failure to ensure competitive markets; and
- (4) Failure to control moral hazard.

Irrational Exuberance Unrestrained

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. Other instruments include increasing the stamp duty/transaction taxes, and increasing the capital gains tax rate on assets (property and securities), especially on assets held only for a short duration. There are many other different ways of lowering the expected net after-tax return of speculative investments and thus discouraging them.

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. Pricking a bubble early actually protects the investors who are the least knowledgeable and are often the last to enter the market and hence are “left holding the bag.” Recovery of an economy from a burst asset price bubble can take years or even decades.

Excessive Leverage

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 of a firm also magnifies the negative spillover effects of bankruptcy of the borrowing firm — 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 happens to do business with it. Excessive leverage also in turn increases the risk of other firms having such a firm as a “counter-party.”

Furthermore, excessive leverage, if widespread, enables and magnifies the domino effect of insolvency and bankruptcy of a firm on the entire financial system through the resulting failures of the firm’s creditors, contractors, lenders and suppliers. Their failures may in turn trigger additional failures if they are also excessively leveraged. Excessive

leverage also enables speculators (e.g. hedge funds) to take sufficiently dominant long or short positions in markets of certain financial instruments (for example, credit default swaps (CDSs)) to affect the market outcomes and to engage in predatory speculation on a large scale.

Because of the potentially large negative externalities that excessively leveraged financial institutions can create, they should be prevented from becoming so. The U.S. regulators (Securities and Exchange Commission) made the mistake of relaxing the capital requirement on the U.S. securities firms some time in the early 2000s, which in turn allowed these firms to achieve their high leverage, at the request of a group of large U.S. securities firms. In addition, many financial institutions undertook off-balance-sheet activities (for examples, “special-purpose vehicles (SPVs),” “special investment vehicles (SIVs),” “structured investment vehicles (also known as SIVs),” “shadow banking” and the like) to hide their true “excessive leverage.”

When is leverage 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 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).

Long Term Capital Management (LTCM), a hedge fund, failed in 1998 in part because of its high leverage—at the time it had capital of approximately US\$4 billion but assets of approximately US\$100 billion and even greater potential liabilities. Bear-Stearns and Lehman Brothers had leverages of between 30 and 50 to 1 when they failed. UBS reportedly had a total assets to net worth (stockholders’ equity) ratio of 64 and Deutsche Bank and Barclays had a ratio of 53 at the end of 2007. In financial crisis after financial crisis, it has always been the excessive leverage that causes the domino effect on the rest of the economy. When a badly managed but highly leveraged firm collapses, it brings down with it all of its creditors, contractors, lenders, suppliers, and counter-parties in its financial derivative transactions, in addition to its own shareholders.

The excessive leverage of Western banks 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

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

Financial markets can be efficient only if there is no information asymmetry, that is, only when all market participants have access to the same information. When not all market participants have the same information, the market system is no longer efficient or fair (the playing field is not level). The markets can be efficient only if investors with large positions do not abuse their monopolistic or monopsonistic powers. And large investors should be required to disclose their positions and also when they trade (this rule already applies to investors in publicly listed companies). Regulatory agencies have a responsibility of assuring symmetry of information and full disclosure in order to ensure the competitiveness and fairness of the public markets.

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.

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.

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. 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.

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. This is one of the principal reasons for the high actual as opposed to disclosed leverage of many financial institutions in the 2007-2009 crisis. Even sovereign governments such as Greece engaged in off-balance-sheet activities with the help of some financial institutions. Had off-balance-sheet activities been outlawed, Greece might still be in trouble, but the problems would have come to the surface earlier and it would not have been in such bad shape.

The regulators did not learn their lessons and allowed the same mistakes to be repeated in an even bigger way. If publicly listed companies were forbidden to engage in off-balance-sheet activities, all of these losses could have been avoided, and the securitised sub-prime mortgage loans would not have found such a ready group of purchasers. Moreover, a great deal of the shadow banking activities, e.g., those involving the so-called auction-rate securities, had the implicit and explicit support of the major banks but were not regulated nor reflected as potential or contingent liabilities of the banks.

Information Asymmetry and Lack of Full Disclosure

In most public markets, disclosure of significant ownership interest is required of a single investor or a group of investors acting in concert (e.g., over 5 percent ownership of a publicly listed company). When one market player has a large enough market share to influence the market outcome, but fails to disclose it, the market outcome is neither efficient nor fair. This requirement, however, has not been extended to markets for certain forward and futures contracts and financial derivatives.

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. There should be some rules as to the maximum share of a given financial instrument that an investor is permitted to hold at any given time in certain markets, like the rule that no firm is permitted to bid for more than 25 percent of a given U.S. Treasury issue, for example, in the oil futures market for delivery or settlement as of a certain date.

There may be serious conflicts of interest if a market participant is simultaneously acting as a principal for its own account and as an agent for others, for example, when a financial institution promotes a security but at the same time sells it from its own proprietary portfolio without disclosing it. Such potential conflicts should be disclosed ahead of time. Off-exchange transactions are often not disclosed. For example, when the same financial derivative instrument is sold to different market participants at different prices at the same time (which can happen since the transactions are not executed on a public exchange), the market will fail to be efficient.

One area that deserves some thought is the disclosure of exposure to counter-parties with whom the firm has transactions. There is a limit to how much a well-managed bank can lend to a single customer at any one time as a percentage of the bank's net worth, a cap on the degree of exposure to the customer. However, no similar limit exists on its exposure to a single counter-party. The bank should know its counter-party's total outstanding potential liabilities relative to the counter-party's net worth. There should be an explicit limit on the degree of exposure to individual counter-parties based on information on their credit-worthiness and aggregate exposure, beyond simple reliance on their credit ratings.

Information Asymmetry and Credit Ratings

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

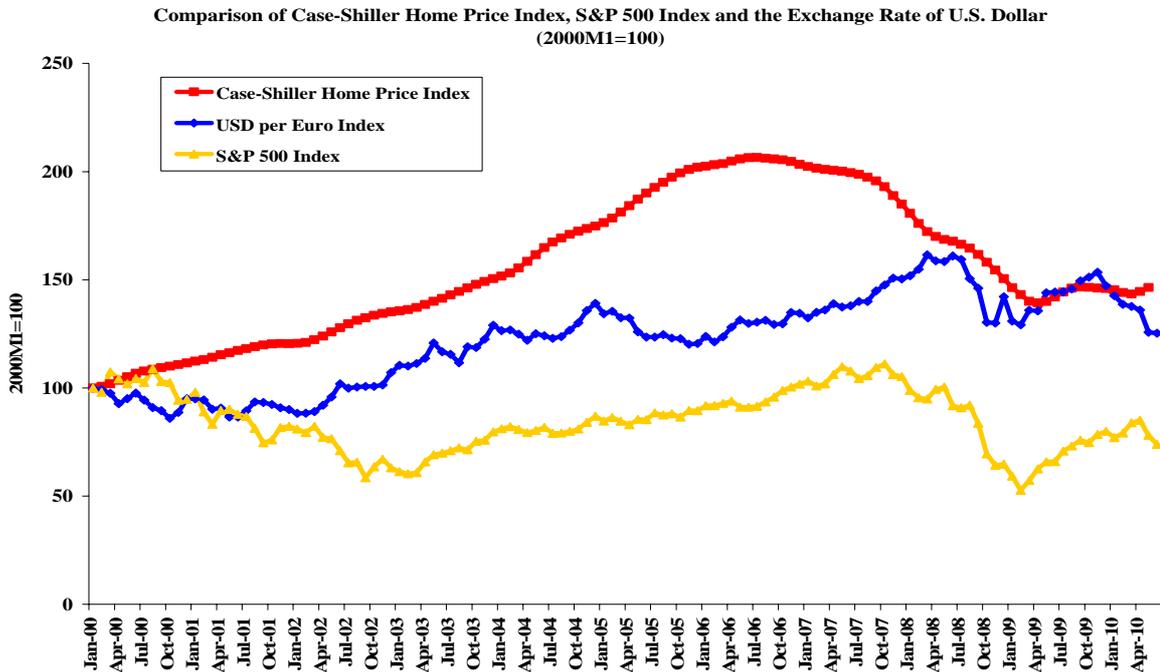
It is well known that moral hazard, if not appropriately recognised, discouraged and restrained, can play havoc with the markets and institutions and increase the overall risk to the financial sector and the entire economy. The regulators should develop rules and

regulations and promote practices that discourage moral hazard on the part of the different market participants in the financial sector. 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 (信用违约交换), 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

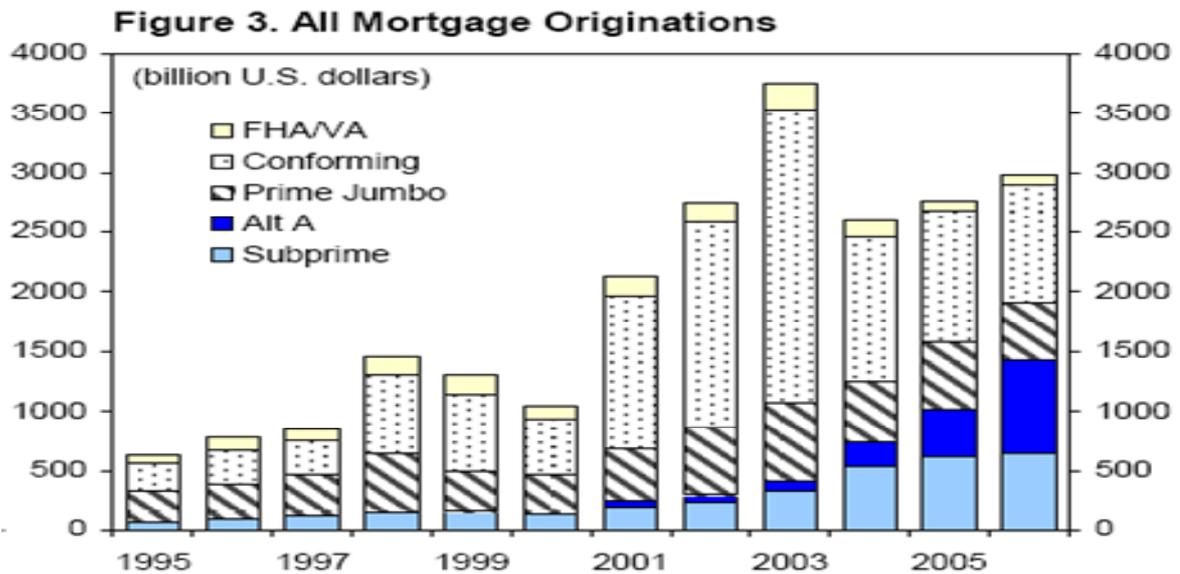
The sub-prime mortgage loan crisis in the U.S., which was the beginning phase of the 2007-2009 global financial crisis, was possible in large part because of the failure of the regulators to control the moral hazard of the originating mortgage lenders. The originating lenders of sub-prime mortgage loans 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. The Index has begun to stabilise somewhat recently, in part because of improved credit conditions for the housing market. But it is not expected to rise again any time soon.

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



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.

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



Source: Inside Mortgage Finance.

If the originating mortgage lending institution were required to retain some residual liability, e.g., a mandatory buy-back if the loan does not perform during the first three years of the life of the loan, or a holdback of 15 percent of the value of the mortgage loan for three years, contingent on loan performance, or a requirement to hold say 10 percent of the mortgage loan itself for the life of the loan, subordinated to the buyers/owners of the rest of the mortgage loan, it would have been much more careful and discriminating in making the loans and the sub-prime mortgage loan crisis could have been largely avoided. Provisions such as these have been introduced in the recently proposed reform of financial regulation in the United States.

Securitisation without any residual liability encourages moral hazard on the part of the originating mortgage lenders. Ultimately the purchasers of these sub-prime mortgage loan-backed securities could only rely on the ratings given by the credit rating agencies on these securities. But the credit rating agencies also had no liabilities for mis-rating, but were compensated for providing ratings satisfactory to the issuers of these securities, creating yet another potential moral hazard.

Moral Hazard and Credit Ratings

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. These credit ratings can therefore sometimes be worse than worthless. The information embodied in the credit rating is unreliable and misleading and give investors and potential investors a false sense of security.

In any case, credit rating agencies are probably not very useful ex ante; because if they are really good at discriminating between the good and the bad securities as to their true relative riskiness, they should be in the asset management business, investing real money for clients and making a great deal more money for themselves in the process and not in the credit rating business. Credit ratings of firms and securities are most often down-graded only after the whole World knows of their problems. The credibility of credit rating agencies is not helped by their not being able to “put their money where their mouths are.” Credit ratings are most typically used by asset managers to defend themselves when things turn sour — “The securities were rated AAA. What could I have done?”

In as early as 2007 the interest rate spread between junk bonds (and sub-prime mortgage loan backed securities) and U.S. Treasury was less than 100 basis points. This should not have been possible because no matter how clever one might be in financial engineering, someone has to wind up assuming the bad risks. The credit rating agencies might have contributed to this super-thin risk premium on junk bonds with their in-retrospect overly optimistic credit ratings.

The credit rating agencies need to be regulated, or better yet, reformed. In particular, the moral hazard can be greatly reduced if the firms being rated are not permitted to “shop” the rating, that is to have a choice whether to pay the firm doing the rating

depending on the result. One may need to develop a penalty regime for credit rating agencies so that they will have to pay for their over-rating mistakes (just like the auditors for their auditing mistakes).

However, since credit rating agencies never have to put their money where their mouth is (they do not suffer any financial loss if their ratings prove wrong), so it is difficult to design an incentive system for them to improve the accuracy and hence usefulness of their ratings. Ultimately, it may be more useful to require the underwriters of a bond issue to retain 5 or 10 percent of the entire bond issue in their own portfolio for the duration of the maturity of the bonds. This way, they will have an incentive to do proper due diligence and they will no longer be underwriting “junk”. This should give potential investors in the bonds much more confidence than an AAA credit rating.

Excessive Leverage Encourages Moral Hazard

Excessive leverage encourages moral hazard and high-risk-taking because it reduces the potential pain that may result from a loss. If a firm with net equity funds of \$1 million operates with a debt-to-equity ratio of 50 to 1, a 10% return on assets (after interest payments) translates into a profit of \$5 million and a 500% return on equity; but a -10% return, which means a loss of \$5 million, will only result in a loss of \$1 million to the shareholders of the firm (the firm will of course have negative net worth and be in bankruptcy). Thus, controlling excessive leverage also reduces moral hazard. 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. Excessive insurance or over-insurance, that is, insuring a property for more than its true market value, is an open invitation to the insured to trigger the insurance pay-off, as the insured can benefit more from the insurance pay-off than from maintaining the status quo.

The insurance companies have learned from bitter past experience that this may happen, and generally will insure only those who have an insurable interest, for example, they will only sell insurance to the actual owner of a house, or to the bank with the mortgage loan, but not to others, and often to offer only less-than-full market-value insurance (the insurance payoff is always with reference to the current market value). Less than full market-value insurance amounts to a form of co-payment and can discourage moral hazard. For example, if the insured of a house can only recover from insurance proceeds less than the full market value and hence will have no incentive to burn down his or her own house to collect the insurance, and will in addition exercise due care for the house to prevent the occurrence of a fire.

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.)

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, like Ladbrokes (but even Ladbrokes does not itself take a position on a bet). Indiscriminate sale of credit default swaps (CDSs) is the principal source of AIG's problems.

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. Or a pirate buying insurance on someone else's ship from Lloyds and then sinking it to collect the insurance. This is the well known problem of moral hazard in insurance that every insurance company should know and avoid. 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. Or if AIG does not take a position itself, merely squaring those who bet that Lehman Brothers would fail with those who bet Lehman Brothers would survive, letting the market determine the odds.

Unfortunately, that is not the case. AIG took on the bets itself, and many of the purchasers of the CDSs had the power to help force Lehman Brothers under, for example, by massively shorting its stocks or bonds, so that Lehman Brothers would be effectively prevented from accessing the capital and credit markets. The total amount of all CDSs outstanding has been estimated to be approximately US\$50 trillion, relative to the total amount of the underlying bonds outstanding of only one-tenth of US\$50 trillion. In other words, the insurance companies collectively sold US\$50 trillion worth of insurance on bonds that are only worth US\$5 trillion.

A simple way to look at the problem of CDSs is to imagine everyone in the U.K. being allowed to buy fire insurance on Buckingham Palace, in addition to Her Majesty the Queen. There will be a strong incentive for those who have bought insurance and who do not have to live in Buckingham Palace to get together and try to burn it down, and collect the insurance. And the insurance company will then have to pay each insured individually the total value of Buckingham Palace, in addition to paying off Her Majesty, resulting in losses to the insurance company many times over the value of Buckingham Palace.

In retrospect, even considered as insurance, the CDSs on Lehman Brothers were not priced correctly. The price of the CDSs did not reflect adequately the probability of its failure, given its high degree of leverage and potential liabilities, and moreover did not take into account adverse selection—people buy insurance only because they have reason to expect that there is a high probability that they will be able to collect the insurance.

Furthermore, the insurance industry is normally regulated by the government to ensure that the insurance companies have adequate reserves to pay the claims if and when they arise. In the case of CDSs, adequate insurance reserves were never properly established. That is one reason why AIG is in so much trouble today. 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. CDSs, if sold indiscriminately, can provide the instruments for a form of predatory speculation—hedge funds and other investors seek relatively weak firms, buy their CDSs and drive them into bankruptcy by selling short (often naked) their bonds and stocks.

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.

Stock options, which provide only upside but no downside for the option grantees, are ideal for venture capital and for start-ups because these are inherently high-risk ventures

but with really no down-side that is not already expected and will be shared by investors and executives alike. However, stock options may not be appropriate for mature enterprises because there may be a significant downside for the owners and shareholders of the firm which may not be shared by the executives granted the stock options.

The high fees, including the so-called “carry interest,” charged by the managers of investment funds, have the effect of causing these asset managers to take excessive risk because they would share a significant proportion of the upside but not the downside. Typically the fee structure of investment funds (including hedge funds and private equity funds) is 2 and 20—2 percent of the value of assets under management and 20% of the returns above a certain threshold, but the carry interest can go all the way up to as high as 44 percent. This incentive scheme encourages risk-taking on the part of the asset managers because they stand to gain significantly if they make it big but lose very little if their investment strategies fail. To be fair, there are asset managers who cap the upside of their fees, thus reducing their own incentive to take excessive risks.

“Heads I win, tails you lose” is neither effective nor efficient as a method of incentive compensation for corporate executives and asset managers—it greatly encourages moral hazard and reckless behaviour. Incentive compensation of senior executives should not be based on short-term results but instead should be based on long-term performance of the corporation, including the performance over a period after their retirement from the corporation. In this way they will have the incentive not to pursue quick short-term profits but to invest for long-term sustainable earnings as well as to help choose their successors carefully. An alternative is to require the executives/managers to own outright shares in the corporation or the investment fund that constitute a high proportion of their personal net worth. That will help align their interests with those of the shareholders/investors and discourage moral hazard and excessive risk-taking.

Moral Hazard and “Too Big to Fail”

There was also a widespread belief, based on past experience, in the ability of Dr. Alan Greenspan, the former Chairman of the Federal Reserve Board—that whatever goes wrong, the Chairman would be able to fix it. (Complacency is also a form of moral hazard.)

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 to fail. The United States, the largest provider of international liquidity, is itself in crisis, but it is really “too big to fail.”

Strengthening Financial Regulation and Supervision

Markets do not and cannot function well automatically on their own. Regulation and supervision are essential for the well-functioning of the market. 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., front running, insider trading, market manipulation, spreading rumours). 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.

What measures should be taken by financial regulatory and supervisory agencies to strengthen financial regulation and supervision?

- (1) Restrain irrational exuberance;
- (2) Restrict excessive leverage;
- (3) Ensure competitiveness of markets; and
- (4) Control moral hazard.

Restrain Irrational Exuberance

The financial regulatory agencies should monitor asset (securities and property) markets and take appropriate measures to prevent asset price bubbles from becoming too big.

Instruments include controlling the loan to equity ratios and loan ceilings in real estate markets and margin requirements in stock markets. Other instruments include the pricing, quantity and timing policies of land sales and the pace of initial public offerings as well as more opportunistic additional public offering through the use of “shelf registration.” 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.

Restrict Excessive Leverage

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.

Ensure Competitiveness of Markets

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.

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.

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.

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.

Control Moral Hazard

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.

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.

Incentive compensation of senior executives of firms and asset managers should be based on long-term performance of the corporation/fund, including the performance over a period after their retirement from management, so that they will manage the company/fund on the basis of longer-term considerations and that they will have an incentive to help choose their successors carefully. Stock options which provide only short-term upside but no down-side should be used very sparingly. Instead, senior executives/managers should be encouraged to own equity (through recourse loans if necessary) in the corporations/funds where they work so as to align their interests with those of the corporations and their shareholders and investors in the funds.

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.

Enhancing the Institutional Design of the Financial Sector

The risk of systemic failure of the financial sector can be reduced by appropriate choices of features of its institutional design. There are four major areas where enhancement is possible:

- (1) The locus of regulation and supervision;
- (2) The financial accounting standards;

- (3) Direct versus indirect securitisation; and
- (4) The specialisation of banks.

The Locus of Regulation and Supervision

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 to periodic audits, and that the central bank has the crucial role of being “the lender of last resort.”

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, the Federal Reserve Board has de facto, if not de jure, assumed the responsibility of the regulation and supervision of the major commercial banks. In any case, close coordination between the central bank and any separate banking regulatory and supervisory agency is essential.

While there are calls for the return of the Glass-Steagall Act in the United States, it is not 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.

The Financial Accounting Standards

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 and only with explicit prior written approval. All contingent liabilities and significant exposures should be fully disclosed.

Secondly, 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. Mark-to-market rules should be suspended when market prices are too volatile and fail to reflect underlying values.

Mark-to-market rules should not be applied to long-term investment, regardless of whether they result in an accounting gain or loss—for example, a long-term direct investment by IBM Corporation in Japan should not have to be written up and down based on the current end-of-quarter Yen-Dollar exchange rate. When market prices are volatile, marking long-term assets to reflect short-term price fluctuations misleads rather than informs the public investors. Moreover, they may lead to either false alarms or a false sense of security. (This is similar to the distinction between the accounting of hold-for-trade and hold-for-investment assets.) Firms should be given a one-off choice on whether to adopt the mark-to-market rule on any given investment, a choice which should be left unchanged for the life of the investment. Apparently such a change in the rules has already taken effect in some jurisdictions since 2008.

Mark-to-market rules may also create problems and confuse investors when valuation is done not with reference to arms-length open market transactions but through an untested model. As the value of financial derivatives, especially customised ones, rises as a proportion of total assets, their precise valuation will have a material impact on the balance sheet of the firm.

Thirdly, quarterly reporting should be made optional rather than mandatory for publicly listed companies. The information content of quarterly reports is in general very low. Quarterly reporting does nothing more other than putting pressure on executives to perform short-term, which may actually work against the interests of the shareholders. In any case, an investor always has a choice to invest only in companies that report quarterly or not report quarterly.

Direct versus Indirect Securitisation

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.

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.

Owner-occupied residential mortgage loans are different from other mortgage loans because their default rate is much lower than those of non-owner-occupied residential mortgage loans taken out by investors and speculators. It is therefore possible, under indirect

securitisation, for the bank issuing the bonds to bear the risks of loan defaults. It is justifiable to have a policy favouring owner-occupied home-ownership but not favouring investment in or speculation on non-owner-occupied residential property.

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.

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.

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.

The Specialisation of Banks

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.

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. But the most compelling argument is that there does not seem to be any synergy between investment banking and commercial banking if all the laws and regulations on avoidance of potential conflict of interest and use of insider information are properly followed. So why put them together?

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. These problems can be avoided if the banks specialise. Again, there does not seem to be any real synergy between the two types of business if they are not permitted to share information and everyone complies with the law.

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.

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.

It is also possible to envisage the emergence of a new type of “narrow” bank, or “transactions” only bank, that Prof. James Tobin, Nobel Laureate in Economic Sciences, once advocated. Such a bank only takes deposits, but does not make loans. It can offer its customers a debit card but not a credit card. It offers interest-bearing current deposit accounts as well as term deposit accounts. It invests its deposits entirely in central government securities (hence no credit risk) of appropriately matching maturities (hence no asset-liability maturity mismatch risk). Even deposit insurance should not be required. As such a bank has virtually no risk, it should therefore be subject to only minimal capital and reserve requirements. Its assets are entirely invested in central government securities and hence will also have the highest possible liquidity. (So perhaps a 2% capital

requirement and a 2% reserve requirement will be sufficient.) It may have to meet a liquidity requirement based on the volume of transactions cleared every day.

The postal savings banks of many countries can be quickly transformed into such “transactions only” banks by basically allowing the use of checks and electronic transfers of funds on their existing accounts. The “transactions only” banks can provide a secure depository institution and an efficient, low-cost transactions account for the average citizen. Such banks, appropriately regulated and supervised, should be immune from any systemic crisis.

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. 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 strictly limited, 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.

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

Concluding Remarks

As the Chinese and other developing economies continue their rapid growth and “financial deepening,” they must continue to strengthen their regulatory and supervisory capacity to deal with new situations and new financial instruments. They must learn from

the lessons of the past mistakes made by regulatory agencies both domestically and abroad. The competitive market system has many advantages but it must meet certain conditions in order for it to produce economically efficient outcomes. The market left to its own cannot ensure that these conditions are met. Thus, regulatory and supervisory oversight continues to be important for China and other developing economies. The “visible hand” and the “invisible hand” must work together, hand in hand.