Financial Markets under Stress*

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Thank you. It is a great pleasure for me to be here and to speak to an audience with so many familiar faces in it. I wish the timing and the subject was a little more cheerful but it is a good time for us to think about where we are in the world and what it means. I am going to talk more about what is happening in the rest of the world than Korea. But hopefully that will provide you with a base to think through the situation you face here at home.

In July of last year-fifteen months ago-financial strains began to appear as it became evident to those in the markets that credit risk had become seriously underpriced globally. The spotlight fell on sub-prime mortgages in the United States, where default experience had turned much worse than previous experience had led investors to expect and, on leveraged loans to finance buyouts by private equity funds. An explosion of buyouts had created a large backlog of undistributed credit on banks' balance sheets. Those of us close to the markets saw a "repricing" coming-a move toward a higher price for taking credit risk and therefore a fall in the price of existing assets. We expected considerable pain for households and mortgage holders from the correction of a housing bubble that had already peaked nearly two years, but with Fed support in providing liquidity to the markets, we thought markets would find a stable base in a few months. That was fifteen months ago. The financial damage would be contained. Most US corporations were in a very strong liquidity position and emerging market countries, which can be vulnerable to higher credit costs, were almost all in strong financial positions. So we did not foresee a chain reaction. What has played out since then has been quite different. It has become commonplace in the United States to call what is happening the deepest financial crisis since the Great Depression of the 1930s. This is no exaggeration.

We have seen the failure, government takeover or forced merger of iconic institutions in the US, Bear Sterns, Lehman Brothers, Fannie Mae and Freddie Mac, Washington Mutual, AIG and Wachovia. We have seen the disappearance of the freestanding

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investment bank. The last ones-Goldman Sachs, Morgan Stanley and Merill Lynch-have become or joined bank holding companies. Securities markets have dried up, commercial paper outstanding shrank by 30 percent, high-yield bond issuance globally, not just for the US, is down 73 percent this year and global corporate investment grade debt issuance is down for the year by 20 percent and has slowed to a trickle in recent weeks. Bank loans and leases have been virtually flat since spring and may be turning down. The stock markets held up relatively well for almost a year as financial distress deepened and widened, but from May through last week the US market lost more than one-third of its value or more than $6 trillion.

In early September the ongoing financial distress became more acute. Problems have become more visible in Europe. The spillover to emerging markets has become greater. Despite strong policy responses and provision of support on an unprecedented scale, stabilization remains in doubt. How did we get to this state of affairs? Where are we now and when and how will markets stabilize? What kind of world will emerge afterwards? I can't say I have certain answers to these questions and definitely not to the third. But I will share my thoughts with you as someone who has followed a number of financial crises, including the one experienced by Korea almost eleven years ago.

How did we get here?

The problems in the sub-prime mortgage market, which became evident last summer, exposed over the following months wider problems in the US financial system. We have seen sectors of the financial system fall one-by-one like a line of dominos, sub-prime mortgages, leveraged loans, asset-backed commercial paper, an alphabet soup of hi-tech financial vehicles like CDOs, CLOs, SIVs, monoline insurers of financial paper, auction rate preferred securities, monoline investment banks, money market mutual funds and depository institutions.
When I look at these, I see one or more of three systemic failures at work, indifference to consumer protection, failure of risk management and failure to recognize the systemic fragility of liquidity.

Consumer protection

We know that the marketing of many sub-prime mortgages exploited the lack of financial understanding of the borrower. People were pushed into mortgages that were not suitable for them by high pressure salespeople working on commission. Mortgage structures became so complicated that even a financially sophisticated person had trouble making a good decision and the borrowers in the sub-prime mortgage market were not financially sophisticated. We are learning that it was not uncommon for people to be sold mortgages that were more expensive than others that they could have qualified for. And mortgage originators encouraged borrowers to misrepresent their qualifications or even did it for them. These practices became common in an environment in which consumer protection got almost no attention from the authorities. The view that people could take care of themselves prevailed. We, in America, have learned an expensive lesson that people will be taken advantage of if the government doesn't look out for them

Failure of risk management

Bad decisions by borrowers would not have led to a financial calamity if investors in the mortgages had been more careful about what they had bought. Why weren't they? The other factors seem to have been at work. There is and will continue to be strong debate on what specific market failures gave rise to each; there were almost certainly multiple factors whose relative importance will never be known for sure.

I see three ways that risk management failed, allowing the conditions for a crisis to develop.

First, there was an astonishing loss of information along the intermediation chain. As I have already noted, documentation of the original loans was often deficient. The loans were then packaged and sliced and repackaged into complex instruments. Buyers who were sophisticated asset managers all too often outsourced their due diligence-they took ratings agencies' assessments as all they needed to know. The ratings agencies relied on models that did not take account of the deterioration of standards in origination and insufficient account of the deteriorating housing market. Some argue that ratings agencies had incentives to rate the mortgage instruments generously. This may have been an element, but the ratings agencies have always been paid by issuers. What was new was the complexity of the instruments and the complacency of the investors, who did not look at what they were buying.

Second, there was an over-reliance on quantitative statistical models to assess risk to the neglect of the macro forces that could change behavior. Under pressure to quantify risk, managers ignored even well documented vulnerabilities of their models-the tendency for correlations across markets to increase in times of stress and the fact that extreme events happen more often than models using normal statistical distributions would predict.

Third, asymmetrical risk taking also seems to have been a factor. Where things turned out badly we often find investment strategies that were seeking relatively small return enhancements. Managers then leveraged their positions to increase returns while exposing themselves to devastating losses that might have small probability. These risks should not have been ignored. Were people short sighted? Did their compensation structure encourage them to make as much as they could as long as they could, knowing that the end would come? Were they simply guilty of tunnel vision-focusing on the returns in front of them while overlooking the risks in the background? It was probably some of all of these. And senior managers proved unable to see the problems, not just in one or two institutions, but across the industry. The asymmetrical returns in trading strategies are a problem that should get a lot of attention from risk managers and those responsible for market oversight going forwards.

There is no doubt that financial innovation contributed to misperception of risks. Things happen in an unfamiliar environment that no one sees coming. There is a tradeoff between the gains for the system from innovation and the hidden risks that it carries with it. This is not a new problem, I wrote about it twenty-one years ago. We need attentive regulators to spot vulnerabilities before they become systematic. But they will not easily spot risks from innovation-the counterparty risks of dealing with hedge funds for example. The regulators deserve some credit for the fact that hedge fund failures have not been a source of systematic difficulty, at least until now. But they did not see clearly enough the extent to which risks were being hidden in the packaging and repackaging of CDOs (collaterized debt obligations) and other innovations. Risks build up when there is very rapid growth in new markets. The danger signs were there.

Behind these risk management failures was a dynamic that may reflect human nature. One might, as a consequence, see what has happened as inevitable at some point. But if we recognize human weakness, we are better able to protect ourselves from them. A period of quiet good fortune gives people a sense of invulnerability. We had been through a long period of growth in the United States. We had absorbed the crash of the dot.com bubble without spilling far beyond the IT sector, economists wrote about the “great moderation”. And in this environment investors sought returns by leveraging more. Hyman Minsky was an obscure economist who developed a “financial instability hypothesis” in the 1960s and 70s. I remember listening to his ideas about the inherent tendency of financial markets to go to excess in tranquil times. He got a hearing from only a few of us young economist then. People today are pouring over his work. If his thinking had been taken more seriously sooner, the alarm might have sounded more loudly sooner. We might have averted at least some of what we are going through.

The factor that has magnified the costs of failures in the consumer protection and risk management far beyond the inflation and deflation of house prices was a failure to recognize how vulnerable the financial system had become to a collapse of liquidity. Financial institutions and market participants had come to rely on liquid markets to sell assets if they needed cash to meet an obligation. People took the functioning of markets for granted, expecting central bank provision of funds to the market when necessary would keep them functioning. Things had worked this way for 75 years. But this time, actions by the Fed-from cutting the Federal funds interest rate, to expanding access to the discount window, to widening the paper that it would buy to an extent previously unthinkable-failed to reserve the collapse of liquidity. The implosion started, as investors, having seen the risk in mortgage backed paper, became concerned about other paper that they realized they didn’t fully understand. A runoff in asset-backed commercial paper a year ago was an early example of this. As problems have widened and caution deepened, liquidity has disappeared from market after market. Financial structures that depend on market liquidity-like structured investment vehicles, auction rate securities and money market mutual funds-have come under pressure even when the credit quality of their paper was sound. The US Treasury implemented emergency insurance for money market mutual funds a few weeks ago to head off a run on them. The disappearance of liquidity has been the most critical concern for the financial system in recent weeks, affecting institutions in Europe and even Korea. We are in a time when investors no longer ask “how can I get a return on my capital?” but only ask, “How can I get my capital returned?” The slightest doubt means that paper cannot be sold at anywhere near a normal value.

As the distress gathered momentum, a vicious cycle of capital loss and deleveraging in the financial system took hold and increasingly stressed credit availability to consumers and business. We found that mark-to-market accounting and fixed capital ratios imposed by both regulators and ratings agencies reinforced each other to shrink financial intermediation capacity. At a time when banks should have been called on to step up lending as securities market windows closes, as they did in 1970 when the bankruptcy of the Penn Central Railroad triggered a collapse of the relatively new commercial paper market, banks sought to shrink their balance sheets. This further depressed loan prices, which led to capital markdowns and another round. I am not enthusiastic about doing away with mark-to-market accounting, but it does not give the right picture of when markets aren't working. What we need are regulators who recognize the limitations of any accounting rule for assets; we need regulators who set capital standards that are counter-cyclical not pro-cyclical whatever the accounting rule. Ratings agencies and the market will take their lead from them.

Where will markets stabilize?

The financial authorities in the United States have acted forcefully and repeatedly to counter the crisis. The early responses targeted markets lowering the Fed funds rate and setting up new facilities to broaden access to liquidity. A second phase was reached in March with Federal Reserve support for the takeover of Bear Stearns. Policy focused on individual troubled institutions including Indy Mac, Fannie Mae and Freddie Mac, Washington Mutual, AIG and Wachovia. Only Lehman Brothers was left to file for bankruptcy. While there was a good case for not treating Lehman as to big to fail, its bankruptcy added to the momentum of the heard racing for safety. There has been a lively debate about whether it was right to let Lehman fail. In hindsight the shock to the system suggest that Lehman was too big to fail. But there is a good case made by some that the authorities would not have been able to gain public support for actions taken earlier if the costs of a hands-off approach had not been shown to them.

Treasury Secretary Paulson was quickly driven to look for a systemic solution. The TARP (Troubled Assets Relief Program) to buy up the $700 billion in assets without good secondary markets was his answer. But by the time it was enacted after first being rejected by the House of Representatives, it was becoming clear it would not be enough. Money markets were frozen. The Fed responded quickly to this with a new Commercial Paper Funding Facility to ensure a market for the commercial paper of high quality issuers. These measures did not stabilize markets.

The crisis is no longer largely confined to the United States. While the initial sub-prime losses affected some institutions around the world, signs of systemic distress were visible only in Europe and even there they remained bottled up until recently. Other countries were concerned about the effects on them of a US slowdown but the financial distress did not spill over to the rest of the world until recently. It is now spilling over, especially in equity markets, and this has highlighted that not only does Main Street in the US have a stake in the what happens to Wall Street, but so too does Oxford Street in London, Ginza in Tokyo, Queens Road in Hong Kong, Nanjing Road in Shanghai and Myeongdong in Seoul. The problem in Europe has become extremely serious. Iceland has banking problems that are far beyond its capacity to manage.

Economies, including that of the US has been remarkably strong, given the financial distress until very recently. Continued global growth created a commodity boom that lasted into late summer. Many central banks had to tighten policy. But the clouds are getting darker as credit markets tighten and the premium on liquidity and optionally grows. Although hard data is not in, available indicators point to the US having slipped into recession in the third quarter. Large parts of Europe also appear to be entering recession and growth is slowing almost everywhere.

Last week markets went into a tailspin. Passage of the $700 billion TARP program to buy troubled assets did nothing to slow the decline. Fear gripped investors in the United States, from hedge funds to retirees. And fear spread around the globe. Mistrust of even safe havens was building. As the weekend approached, even the most ardent advocates of free markets were calling on governments to do something.

It so happened that last weekend was the occasion of the annual meetings of the World Bank and IMF in Washington. Finance officials, central bankers and private sector bankers normally spend their time at the meetings discussing arcane issues like the next capital increase of the World Bank or the governance of the IMF. This year, the meetings were like no other in the 35 years that I have been attending. The 1997 meetings in Hong Kong are the closest parallel, but then the full scale of the calamity that was playing out was not yet evident. There was debate on how to respond then.

Last weekend everyone I talked to agreed that coordinated action by governments was needed to create a base from which markets could be rebuilt. Three elements were seen as essential. One, government recapitalization of financial institutions to halt the deleveraging that was beginning to choke off credit to even the soundest business.

Two, government guarantees to enable financial institutions to raise deposits and borrow funds and third, additional measures to provide liquidity in order to unfreeze money markets.

Starting with the G-7 meeting on Friday, governments began to put together a response. In the world we live in, where national governments are responsible to voters and control budgets, national action is the channel through which things get done. But global markets demand a coherent global response. Officials did a pretty good job of reconciling this tension as they agreed on broad principles in the G-7 and the IMFC committee and then went home to translate these into national actions. The Europeans stopped in Paris to further coordinate Euro area with UK action.

By Monday morning markets had a clear sense of what was coming, although full details have rolled out since then. I won't go into specifics, but I do want to emphasize the scale of what is being implemented. Over $600 billion of capital injections into banks in the US and EU, trillions of dollars of assets that will carry a government guarantee and unlimited liquidity facilities. The support of financial institutions by governments is also spreading beyond the G-7. Australia, New Zealand, Saudi Arabia, Russia and Hong Kong are among those that have adopted new support policies. This is important to keep a country's banks from being disadvantaged because others are receiving support. So I expect more. And efforts are underway in the IMF and World Bank, in the ASEAN plus Three and bilaterally to reinforce the capacity of countries to provide support.

Will these actions do the trick? The initial sings have been mixed. It is essential that confidence be restored and both equity markets and debt markets have responded positively. But any renewed confidence is fragile. It will have to be nurtured through unfailing implementation and supported with further interest rate cuts in the months to come. Any hint that governments are not following through with what they promised would be disastrous. And another unseen shock could also start a new decline in markets. But governments have shown that they know what needs to be done, and after fifteen months we have reason to believe that big buried problems have been unearthed. We can be hopeful but not sure of a return to financial stability.

But the wealth losses and credit constraints that have already been experienced makes it likely that the recession that seems to be starting in the US will continue into next year and quite possibly to midyear. Europe will take some time to turn up too. This will mean slower growth in Asia. The slowdown may be limited if fiscal measures to boost domestic demand are taken in China, where the budget surplus gives ample room for action. Korean business will find it challenging to navigate these challenging markets. But Korea has broadly diversified export markets and has shown the capacity in the past to shift focus from US markets to Europe to the Gulf, to Asian neighbors as demand shifts around the globe. It will need to do so again.

What kind of world will emerge afterwards?

What is happening right now is an historical turning point. A tide that has been running for thirty years towards deregulation and privatization has turned. On Tuesday, the former CEO of Goldman Sachs, the icon of American capitalism, presided over the partial nationalization of the US financial services sector, including Goldman Sachs. Secretary Paulson said “Today’s actions are not what we ever wanted to do-but today’s actions are what we must do to restore confidence to our financial system.” He clearly saw that the world he lived in, like Scarlet O’Hara’s, was “Gone with the Wind.”

For a number of years, at a minimum, governments will play a more active role in the economy than they have for a long time in most countries, although this may not be as unfamiliar to Koreans as it is for Americans. The allocation of resources to industries and to companies will be politicized, so too will be hiring, firing and compensation of workers and tendencies to think in terms of favoring and protecting national champions will be reinforced. We will also see a revival of regulation and it is not likely to be confined to the financial services sector. There were tentative signs that the world was moving in this direction for several years; the financial crisis has made it an inescapable reality.

What the path will be once markets have stabilized and economies are recovering is far from clear. The picture I am going to paint is as much hope as predication.

The lessons that markets are subject to the failures that I described earlier will stay with us for a long time. But we also know about the failures of government. It was less than twenty years ago that the socialist economies crumbled. One of the few remaining examples, North Korea, is a constant reminder of the complete failure of this approach.

The way forward to stronger, more stable economies would seem to be to give markets and governments roles that suit their strengths. Private businesses operating in markets are unchallenged in their capacity to harness human ability and energy to deliver goods and services. But they can take advantage of human nature, they can mismanage risks and they can underweight risks of extreme events to the detriment of others. If economic activity is thought of as a game of baseball, to pay tribute to the Korean Gold Medal in baseball, the role of governments should not be to take part in the game as governments do in socialist systems-as both player and umpire. Private businesses should be the players competing in the game. But government does need to make the rules to keep the game safe, and it must rigorously enforce the rules as an umpire to ensure that the game is fair. It is going to be critically important that these two roles-player and umpire-be kept separate.

As we move into this new world, the forces of national protectionism will be reinforced and must be fought. With governments taking ownership of business, the instinct will be to protect their own. But this would do tremendous damage to economic prospects everywhere. It has been the opening up of markets over the past fifty years that has fueled growth and development. The current crisis is not the result of globalization. The US crisis was made in America. The vulnerability of Europe, with over-leveraged banks and housing bubbles of their own, would have soon been exposed even without the sparks from across the Atlantic. Turning inward is not the answer. We know what happened when borders were closed in the 1930s. We must not let that happen again. The cooperation that we saw this past weekend gives me some hope that it will not.

So we stand at a turning point. What was done last weekend will be long remembered and even longer studied. What new course we will move along is not clear at all. But we have a choice. We can press our governments to build a stronger market regulation role than they have had in the past, but to withdraw from business as owners and managers as soon as possible. It will take strong leaders to follow this course.

Questions & Answers

Q Some people say another time bomb is waiting in the US consumer sector, especially with respect to credit cards, do you think this will be a problem? Also a number of Asian countries like Singapore, Malaysia and Taiwan provided a deposit protection between banks and borrowers and inter-bank lending. Korea has not done this yet but if it were to do so would that show some weakness. Would this show the wrong signal?

A On the consumer credit situation, I am quite confident-although I have been wrong quite a number of times in the past fifteen months-that there are no big surprises in the consumer credit area. What we do know is that with the economy turning down, the losses in credit cards and other consumer credit are going to rise. I haven’t seen the details but in our earnings release yesterday we have called for a lot of attention from reserves because we can see the consumer credit situation deteriorating as the economy deteriorates. We spent a lot of time looking at it for over a year now and these are going to be predictable cyclical developments. It is going to be another negative, it is going to be painful depending on how big and on how deep the recession is and how prolonged. But I don’t see the big surprise like with sub-prime lending. You can see this with the 2006 vintage mortgages that as this market exploded, the fundamental standards for giving credit in that market changed from 2005/6 and nobody noticed, so as the fault rate doubled, it took people a while to realize it. I don’t see that in the consumer markets, when the market conditions change consumers are going to become more under stress, no doubt about that. My prediction is that is what is going to be expected, a bomb in financial markets is something you did not expect. But the passage of time and the period of stress does expose them and we are going to have some numbers so there is some confidence.

On the other countries, Singapore, Malaysia and Taiwan, as I mentioned Australia and New Zealand have supported their banks. I think it creates a difficult situation for other countries that are in disadvantage, as they do not offer support. And I think the Korean authorities do need to look closely at the advisability of offering comparable support to banks. It is extremely important to get the message out correctly about why you do it, that it is not because you see the weakness in these banks but because you want to put them on a level playing field with these other countries. And I think that if the measures are taken they are taken to be the same as those other countries and not something that is fundamentally different and if you are going to do it, do it quickly because being in the same time frame is reinforcing why this is being done. Korea is not the only one, many countries are facing the same challenge as well. I recognized this would be a risk that was going to build up that if G-7 did this then the rest of the world would have to do it and people talking to the World Bank that shouldn't they have the facilities to reinforce some countries capacities to do this. You have $250 billion worth of reserves in this country so you are not in the same position as other countries.

Q This is the time now for the change of the financial regulatory system, going from the Chicago free to choose school to the Keynesian government interference. I would like to ask same questions about this. Don't you think some of the control mechanisms were more selective rather than general controls? On the financial supervision side, I believe there is no control body for sub-prime mortgages, don't you think that this should be changed? About 60% of sub-prime mortgages are done by non-name financing, isn't this one of the causes of the problem?

A I, as a Federal Reserve staff member, worked hard to advise the board to get rid of some of those controls. They were creating a lot of distortions and they gave rise to a lot of the problems we had with the last financial mess we had in the 1980s. I think bringing back that approach is the right way to go as opposed to "these are the rules", "you can do this and you can't do that". We are going to need a lot of financial supervision. I think there was just horrendous number of problems in mortgage market supervision area, as you said these independent people were not being effectively supervised although the Fed did have the legal authority to do much more than it did do and has since this year, closed the barn door as we would say and has done some things to bring those under closer surveillance.

I think that the no-doc loans are a prime example of a market that had gone to ridiculous excess. It was a huge market and they were just trying to create as much paper as they could to put into all of these CDOs that were being created. They set up offices around the country, hire people who didn't know anything, train them up quickly and would get them to take mortgages and would pay them on the basis of how large a fee mortgage they could get out there. So basically the mortgage broker and the person running the mortgage conspired together to create a system in which information was misrepresented, misrepresentation in the documentation became widespread. It was a terrible scandal that was allowed to go on under a Board of Governors which was one of Alan Greenspan's failings who thought that the competitive markets would help people choose the best product despite lots of financial research that shows people don't make good financial decisions, especially when they are subjected to high-sales pressure techniques and I think that is an area where we are going to have to need a lot more supervision.

You said that supervision should become more conservative. An old friend of mine, who was influential in 1970s and has written a new book which said that the mistake was to think that banks are like any other business and should be thought of as public utilities, that they serve a public purpose and that they should not be there to maximize profits. We may get back to that model, that banks are public utilities to generate profits and are regulated so that they are not there to maximize every penny they can make. I think that means there is another part of the financial system where money is invested more with the seeking of return and more market-orientated. My bet is that the hedge funds will find a lasting place alongside that. Hedge funds should be regulated in that they can't go out making rumors and then sell stocks, they should be regulated that they can't gang up with another and take over a company. So they should be regulated like any other financial transaction but their business should be regulated not they as financial entities.

There is also an important need to collect data and I indicated this back when I was in the Treasury. I think if you are going to play this overview systemic monitoring role that the Fed needs to play, you need to have sense of what are the positions in the market, when are trades getting crowded that is everybody is in the market subject to blowing up. Only by having information on the structures in the market can you do this and I think that is important.

And there are two things people do reflexively, the first one is they say "this crisis means we need to bring back "Glass Steagall" which means the separation of investment banking and commercial banking. In fact, what this crisis has show is that investment banks by themselves are vulnerable enterprises and, in fact, getting rid of Glass Steagall does map the way to our way of the future which is a universal bank. And second thing they say is, "this shows we have to regulate hedge funds". Well, you might want to regulate hedge funds but there is nothing about this crisis that suggests hedge funds are at the center of the problem.

Q You have given us a very comprehensive review of the crisis so far and I liked your succinct conclusion of what the role of the government should be. Strengthen the regulations and rules but do not become a player yourself. I have a few questions. What would be your expectations of the value of US dollars for next year or so? Secondly, this was mentioned before but Korea ranks sixth in terms of the size of foreign reserves it holds but one impact of the US financial crisis has been to cause quite a panic in Korea's foreign exchange market and our currency has destabilized very much. It comes to us as a great puzzle, we believe our fundamentals are good and we thought that we had large enough reserves but then we have come under the fear that we could run into another financial crisis. How do you explain this? What is Korea's vulnerability that could be creating this panic in the foreign exchange market? The Korean government tries to blame the foreign press but I think that only scratches the surface, there must be something wrong fundamentally with the Korean economy or with the way the Korea monetary authorities have been behaving or talking. What would be your frank assessment?

A Well, what I say should be taken with a grain of salt. I read the press and our research reports on what is going on in Korea but I am not down there in the trading room so I don't have a sense of what the forces are in the market and what there is that has created this situation. It was not too long ago, just earlier this year that people were worried about the Won, which was running ahead of all other Asian currencies and was terribly strong. And you have gone from having that problem to having the opposite problem in a short period of time. I have not looked close enough to know what is happening. Part of it is a reflection of what we are seeing around the world, in the fact that as money markets have frozen, dollars have been hard to find, people have been trying to get whatever they could get, if you are a Korean bank you get Won, if you are a French bank you get Euros and selling them to get dollars. And that has been making the dollar strong against the Won and the Euro. Korea being a smaller financial market and system, those forces are amplified.

I don't think that reserves should be thought of as a fundamental tool to manage the exchange rate. You let the markets go and they come back and you hope that the business has facilities to hedge at least their short-term implications against that. That is a very superficial level and I can't say that is what is happening to Korean Won at the present time. The dollar books of Korean financial institutions are in a time when liquidity is bad, it's not because the loans are bad or there is problem with the institution, today you have trouble getting dollar funding and that is affecting Korea today.

In terms of where the dollar is going to go, back in the 1970s when I worked in the Fed they made fun of my efforts to generate dollar forecasts and they did research that you may know, by Macey and Rogoff which showed the best forecast for the exchange rate tomorrow is what it is today which beats even the forward rate. That is a high variance guess. I think for the dollar-euro, I wouldn't want to take a position. Back when it was up 1.50-60s I would have said it would not last but now in the 1.30s, who knows whether it is going to strengthen again or weaken its position. That depends on the underlining economic conditions. I think the long-term trend against the Asia countries is for them to strengthen against the dollar and when I was here nine months ago and I would make that statement I would have said that with the exception of the Korean Won which has already strengthened. But now the Korean Won has weakened so much I would say now the Korean Won especially. That is because there have been major efforts in Asia, especially in China to slow or resist the rise of a currency, which is typical with an emerging country. And in time we are going to see that with the Asia currencies, strengthening against the dollar.

Q Thank you for your presentation, I would like to ask three questions. You covered the major causes of the situation that we are in now and I was very struck that you didn't mention that much about the role Greenspan played in this crisis. Wasn't there too much excess liquidity to ignite the fire?

My second question, you said that China has a lot of room in responding to this crisis because its fiscal position is sound. But we also know that China's financial system is very weak in the sense that the system represents the case of repression. The government controls the interest rate, the exchange rate and even the allocation of credit. We had that sort of system before our financial crisis. So if you have a very repressed financial system, the problems tend to be hidden. The strong fiscal policy is very good for dealing with problems after they have broken out. So I would like to hear your comments about the strength of China to bear the current financial crisis.

And my third question relates to your observation that Korea is relatively well positioned because its experts are very well diversified. As Koreans, we feel very good when an observation like that is made by somebody like you. On the other hand we have to realize that the problem is not regional, the whole world is subject to the financial crisis. And when you think that the US is in trouble, Europe is in trouble so that is already two-thirds of the world economy. When these two economies are in trouble, it means the Middle East is also in trouble. So in this situation is there room for Korea to try to manage its economy with emphasis on stimulating internal sectors when it is raining outside?

Q We are concerned that the US's rescue package of $700 billion might actually cause some inflationary problems. How would you comment about that?

A It is true that the whole world is going to slow down but the timing is going to be different and some more than others. So there is some help from this capacity to focus on some different markets. And I was wondering if I was going to be exaggerating it a bit, especially since I learned this morning that the price of oil has dropped another 10 dollars and is now in the high 60s per WTI. And that is going to reduce the amount of money that will flow into the Middle East, it is still high by historical standards but it has fallen by half since last summer so there is not going to be this gush of money flowing into the Middle East as before. Korea is the economy most affected by commodity prices, every model in the world I know shows that and you coped with the commodity spike pretty well. And now the fact that that is now in reverse, it strengthens your capacity to do what you were recommending which is to focus on domestic demand and hopefully in a way that long-term investments has value to them and not building "bridges to nowhere" as we do in Alaska. And I think that the benefits from domestic demand for the Korean economy will be important because the global economy is going to be weak.

To turn to China, I think it is the least constrained economy despite its domestic weaknesses. If you look at its reserves, if you look at its huge current account surplus, after all Korea has a small deficit, which may now disappear with the change of oil prices. It has a government sector surplus of several percentage of GDP, it has problems in the pollution areas, education, health care and infrastructure areas, there is a lot they can do to meet the basic needs and desire of the Chinese people with these resources and stop the almost total focus on exports. If they do that they might find that they have made a lot of lending to exports that for market conditions and prices aren't going to hold and there are going to be more bad loans. I think the Chinese have gone a long way to working off the legacy of bad loans and problems in the financial system before. Some of them are going to come back and they would be a lot better off if they had undergone some of the adjustments you suggested. I do think they have the capacity to absorb those shocks and still stimulate the economy very strongly. And if they do that is going to spill over to the rest of Asia. China is the second largest importer in the world right now, it is more important, in the global scheme of things, than Japan, even though its GDP isn't as big. That means we should all watch closely what China does.

Greenspan's role and we would even have to have to say early Bernanke's role. I think if things go on calmly for too long you get trouble and it is not Greenspan's fault that he managed to keep economic conditions so good for a while. I think it is the Fed that failed to respond to consumer protection needs in the mortgage market and I fault Greenspan for that. There was a problem that liquidity was flowing to some places where it shouldn't have and that should have been dealt with on regulatory front rather than on a monetary front. If you look at the whole US economy until the problem started we didn't have an overall inflation problem, we didn't have stock market that was running away. So I don't fault him for that but I do fault him for failing to act to keep the mortgage markets under control which meant that liquidity was flowing all into one pocket and not spreading around.

Interestingly as this crisis began, the Fed began to pump up liquidity, which I think was the right thing to do. But it was not filling the hole in the US economy and the banking system and banks were still being careful about credit, rather it was flowing out of the country to Hong Kong, Korea and elsewhere feeding the demand growth and this commodity inflation we had. So I do think that this commodity inflation was created by the Fed because they were trying to create liquidity for the US, which had a hole in it, but what they were doing was creating liquidity for the whole world and creating this commodity boom. It was created by the commodity markets it was a monetary problem like in the 1970s. I don't blame the Fed for that because they had to act and they had to create domestic conditions. I do blame countries in the Middle East and China for pegging their exchange rates to the dollar rather than absorbing some of that by letting their currency strengthen further.

We are creating a lot of liquidity now but it is official liquidity to compensate for the destruction of liquidity in the markets. CPI came out this morning saying it was zero percent change for the last month, that of course reflects the coming off of commodity prices as things have slowed down around the world. But even core inflation was 0.9, which is the best I can remember for quite a long time.

I think Bernanke is winning his bet. I was skeptical about this six months ago. I think that he is winning his bet that the underlying inflation situation would come under control and he could provide this kind of liquidity. It will be important for him to go into reverse once the economy starts to work, that is the real test and I think he can and he will do it, he knows it. But the idea that what is being done is going to feed excess inflation is being said by some market people, I think it is crazy. Yes, the gold prices are high but that is because people want to put their assets in where it is secure not because they are worrying about inflation.

Q The Korean government is going to relax the regulations on Chinese industrial conglomerates and financial institutions. By allowing these conglomerates plus pension funds to share up to 10% of the shares in financial institutions. Are we moving in the right direction for this? The basic justification for this is to enjoy economic scale and basically to avoid foreign domination on the financial sector.

A I think the last reason is not a good reason.

Q The foreign share of Korea's portfolio market reached 40% and when I pointed this out by Eisuke Sakakibara, he said you Koreans are playing a real dangerous game. The Japanese foreign exposure is roughly about 20%. Korea is well ahead of the rest of Asian economies. Obviously this excessive foreign share when compared to other countries can be a nightmare with the foreign exchange rate volatility. Is there any empirical benchmark in which there is an optimal level for foreign shares in a stock market?

A I don't know if there is an optimal level, it depends on the size of the economy and the level of financial development and the way in what portfolio holders need in terms of global diversification. I remember back when a foreign share was so high and people would ask me about that. I am a holder in the Korean stock market and that is because I have stronger belief in the Korean economy than the Koreans do and they don't put the money in there themselves. And for a while we saw the share go down as Koreans were bidding for it. I don't see why people should be concerned about it and I suppose you would take a look at it if it was hedge funds taking obviously short positions but if they are broad based holders and people like me who are in mutual funds. Then I would take that as a sign of foreign faith in the economy and one ought to take pride in it.

I don’t know about the law that is being done here so I won’t comment on it specifically. I am cautious, this is an old fashioned central banker’s view but I do believe in the separation of banking and commerce. And you can’t have an iron separation between them and it is big a difference when there is control or not in share trading. We are liberalizing in the US to get more capital in the system to allow more private equity funds to take positions in the banks. So there are changes you have to make in light of economic conditions. But as a general matter, history shows that very close relationships between groups whose main business is manufacturing and banks leads to connected lending and other practices that are hard to control and should be done with care.

Q In spite of the big rescue plans still financial turmoil goes on. How long do you expect the current financial turmoil to last? And my second question is there were so many famous economists including Nobel Prize in Economics winners who failed to predict the current financial crisis. As I know there were no meaningful warnings from any economists, what have they been doing before the current financial turbulence took place.

A How long? I can’t say with any confidence. Where we are now is gradually consistent with our base forming taking us into early next year before we can look back with confidence and say we are out of the trough. And there is a risk that we drop into another hole again, I hope that won’t happen but I just can’t be sure.

Now why haven’t our Nobel winning theorists gotten it right? In a way, you see, their job is to make breakthroughs in theories of the economy not to predict it. They are more like engineers of the economy. I have probably more to say for not seeing it clearly coming than perhaps my teacher Joe Stiglitz does.

On the other hand there are economists who have been saying for a long time that there are problems coming, one of the most prominent is Shiller over at Yale who wrote first about the dot.com bubble and then about the housing bubble and has been right both times. Nouriel Roubini at NYU, who I have been arguing with because I thought he was being too extremist but is now looking to be right. And the third one is someone who was saying everything was not right last summer just won the Nobel Prize, Paul Krugman. So you are a bit out-of-date, Krugman gets some credit for being an early person to see it coming. I am very proud that he was an undergraduate at Yale and he took his first classes in macroeconomics from me when I was a graduate there.

Q I have a question about the effect of the US Presidential elections on the global financial crisis. Which candidate do you think has the strongest economic plan that takes into account the balance between regulation and the free market? And if that candidate wins what affect do you think his policies will have on the global financial markets.

A I think it is interesting to date the effects of the financial crisis on the next Presidential candidate have been much greater than the effects of the presidential election on the financial conditions and it has been a factor that has strongly supported Obama who represents the clearest prospect for change from the previous government. If you look at my bio you won’t be surprised about who I am supporting this election and it has pleased me very much. But both candidates have rightly both endorsed the Paulson approach to the problem and I think it is great that we have not tried to play party politics with the issue, it is a tribute to both of them, cause either might have been tempted to go off one way or another.

The kinds of things you say on the campaign trail are different because voters don’t understand the whole complexities of how to put together a financial program. I believe in Obama’s wisdom, I know the people he has as advisors and are close to him and I am sure he will do a good job of it and I believe he will do a stronger job than McCain. But in fact, neither candidate is saying things right now that would provide the objective basis for saying which one has the answer and the other doesn’t.

Q My question is this, last month a French intellectual came here and criticized the media for over exaggerating the financial crisis. So I wanted to know if the news media plays a role in stabilizing or destabilizing the financial crisis. And what experience do you have in dealing with the press?

A We at Citi feel exactly the same way as the Korean government does. The truth of the matter is you have to put your story out there and the media sometimes gets it wrong and it is a fact of life and you have to live with it. Hopefully you are being objectionable and tell it to the Korean people the right way. Some people in the press have been way too extreme in portraying the crisis, then it turns out some of them have been more right than I was. And I don't think it is right to bottle them up and constrain them, we all have to hear what people say and think it through ourselves.

Q What do you think has been the implication of the Gramm-Leach-Bliley Act in contributing towards this financial crisis? That act has done something that we Koreans have been trying to emulate and as part of that effort, a new law, the Capital Market Consolidation Act will go into effect next February. In Wall Street and Korea there are now calls to reconsider doing that, what would be your assessment?

Yesterday President Lee Myung-Pak said to the world that existing international institutions have proven inadequate, in the sense that they have allowed this existing financial crisis to happen and therefore we should allow for the creation of another international economic organization. What would you say to him?

A Gramm-Leach-Bliley was not part of the problem. Lots of people in the US are saying that it is. And as I said earlier, the strong and stable institution that is emerging from this is one that will take Gramm-Leach-Bliley and stabilize it. I think it is a red herring.

As for needing a new organization, well a lot of people have said this, Prime Minster Brown in the UK said that we need a new Bretton Woods. I think it is reasonable for political leaders to look for ways to make the system stronger. I wouldn't, I have lived through too many rounds of this and tend to, as a technocrat, find ways of making the institution work better and is probably the best thing to do. But at a time like this I don't think there is anything wrong with going back and looking to see if we can make it better.