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**Financial Crisis Inquiry Commission**

**Closed Session**

**Ben Bernanke**

**Chairman of the Federal Reserve**

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***** Confidential *****

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CHAIR ANGELIDES: Welcome, Mr. Chairman.

MR. BERNANKE: Nice to be here. Thank you.

CHAIR ANGELIDES: Good.

So thank you for joining us today. And as we spoke, as you know, we are underway with our work now. And we wanted to ask you to come by today to give us your perspectives on the crisis, the causes. And I thought what we'd do is, per our discussion, perhaps you would make some opening remarks of whatever is comfortable, 15, 20 minutes; and then we spend the balance of the time asking questions.

MR. BERNANKE: Sounds great.

CHAIR ANGELIDES: And I should add, before you start, that we are recording this for the archives for our work.

MR. BERNANKE: Good. Thank you.

Thank you for again giving me this opportunity.

I’m sure you will hear so many of the common themes, so I thought I would just focus on some areas which I might have slightly different perspectives than some others.  So let me just go through a few areas.

One general area you’re going to want to look at is the macroeconomic context, the macroeconomic background that led to the risk-taking and so on of the crisis.

So let me just identify some hypotheses which you’ll want to look into.

So why did risk-taking increase?

One hypothesis is the so-called great moderation.  In a way, this suggests that monetary and fiscal policy were too successful during the eighties and nineties in creating a very stable environment, low inflation.  And that it was that sense of excessive security that led to risk-taking.  That’s one hypothesis.

A second hypothesis, which I have advocated in a number of speeches, which has been greatly expanded and worked by Martin Wolf, the journalist, and others, is what's called the global savings glut. And the idea here basically is that after the Asian crisis in the nineties, many developing emerging-market economies became capital exporters rather than capital importers. That was because either they had large savings and investment differentials, as in China, for example; or they had lots of revenue from commodities, like the oil producers; or they were acquiring large amounts of foreign exchange reserves, which was a lesson of the nineties, that that was supposedly a way to protect themselves against the exchange-rate problems. All those things created large capital inflows into the Western industrial countries, notably the United States.

It's a common observation in the context of emerging-market financial crises that they're often preceded by large capital inflows from abroad and that the problem is that the local banking system can't handle the massive inflow of capital. So by analogy, sort of a similar story may have happened in the United States.

A particular feature of that is that what may have mattered under this story is not just the net inflows, but the gross inflows. People like Ricardo Caballero of MIT, have argued that the emerging markets were looking for high-quality, safe assets, like Treasuries, for example. So there were huge amounts of inflows that were only partly offset by U.S. investment abroad. And that, indeed, once there became a sort of shortage of Treasuries, that there was strong incentives to U.S. financial institutions to create, quote, *"safe assets."* And that's where the securitized AAA credit assets came from.

By the way, the savings glut idea doesn't necessarily mean that there was a lot of extra saving, per se, but, rather, that savings and investment were out of balance. So part of the reason for the savings glut was -- by this story -- was that investment in the emerging markets dropped after the crisis, and that was part of the reason for the imbalance.

The third explanation, which I'm sure you'll investigate, has to do with monetary policy in 2003, 2004, 2005. Interest rates were down to 1 percent during that period for reasons having to do with both the slow recovery from the recession and because of concerns about deflation at that time.  Some have argued -- and I'm sure you'll look at it -- that those low rates contributed to the risk-taking.

We are working on a staff paper that goes into this in some detail, which will be ready by the end of the year.  And I'm going to give a speech on this topic around New Year's.  So we will try to provide you with some information on this general topic to give you our perspective.

I think there are a lot of different components of this issue - if I could just sort of illustrate why there are a number of different questions to be looked at.

The first question is, was, in fact, this policy the cause or a major cause?  And as I said, there are some alternative hypotheses, like the savings glut and some other things.

A second question is, if it was a cause, you know, was it a knowable problem?  Was the Fed doing the best it could given the information it had, or was it neglecting information it should have used? And that's a second question.

And related to that is the general issue, which has become very hot in monetary policy circles, which is, should monetary policy be used to try to knock down bubbles or not?

Just for the record, my view is that it can be a backup, but that the first line of defense ought to be supervision/regulation.

And then I guess the last point I would make about this -- and, again, this will be explored in more detail in our paper -- is the following: Even if you believe that the Fed's monetary policy was a contributor to the bubbles, it should be noted that even the people who are most critical of the Fed's policy acknowledged that it was only -- it was not a large mistake. It was a percentage point or two relative to, say, what the Taylor rule, which is the standard measure of interest rate policy is.

And so then the question is, you know, how can you have -- if you have a situation where a relatively small mistake -- if it was a mistake, I'm just accepting that hypothesis -- leads to the biggest financial crisis since World War II, I mean, what does that say? They say that the system itself was inherently unstable and that a relatively small shock was enough to knock it off the pedestal.

So I guess my own view is that if the system had been adequately stable, had strong enough supervision, et cetera, et cetera, it could have dealt with this problem or other problems without collapsing. So that's the general topic of macroeconomic context, which I'm sure you'll want to look at.

A second area, I'll call the *"shadow banking system."* I'm sure you'll look in detail at housing finance, at the GSEs, at subprime mortgages. So you don't need me to go through that, other than to note that the Fed is one for two on those. The Fed was concerned about the GSEs and their capitalization and their financing for a long time. Chairman Greenspan testified about that way back in -- you know, 15 years.

So we were right on that one.

But, you know, we've acknowledged that we didn't do enough to prevent the subprime lending crisis, in particular, since we had the authority to put some rules against some of the practices that occurred.

What I'd like to call your attention to is the broader phenomenon of the so-called *shadow banking system,* which subprime mortgages were only one type of asset which were bundled together into securities, and then these securities were then sold through various legal off-balance-sheet type mechanisms to investors, usually with AAA ratings from the credit-rating agencies.

Among other things, a striking aspect of these securitizations is that these vehicles, these special-purpose vehicles, et cetera, typically held long-term assets, like mortgages, but were financed by very short-term, overnight type money, commercial paper, et cetera. And there's some interesting analysis to this. One example is some work by Gary Gorton, G-O-R-T-O-N, at Penn. He might be at Yale now. I'm sorry.

CHAIR ANGELIDES: Yale.

MR. BERNANKE: He was at Penn before.

And he points out that it's like an old-fashioned bank before deposit insurance, that the depositors in that bank, as long as they think the bank is 100 percent safe, they'll leave the money in. But as soon as they get some loss of confidence, they're going to pull their money out. When the subprime mortgages began to go bad, a number of us, like myself and Paulson, were wrong in saying that this was a contained problem. And the reason we were wrong was that subprime mortgages themselves are a pretty small asset class. You know, the stock market goes up and down every day more than the entire value of the subprime mortgages in the country. But what created the contagion, or one of the things that created the contagion, was that the subprime mortgages were entangled in these huge securitized pools, so they started to take losses and in some cases, the credit-rating agencies, which had done a bad job basically of rating them began to downgrade them. And once there was fear that these securitized credit instruments were not perfectly safe, then it was just like an old-fashioned bank run. And the commercial paper market began to pull their money out. That created huge problems for the financing of these things. It forced the banks to take them back on their balance sheets or to support them and so on. So there was an old-fashioned bank run, which I think is a really interesting factor.

Of course, again, flaws in the securitization process. I'm sure you'll want to look at the credit-rating agencies. There were a lot of things they did wrong. There were issues of conflict of interest. There's issues of whether they used the right models. Clearly, they did not. They did not take into account the appropriate correlation between -- across the categories of mortgages and so on.

A third category of topics has to do with regulation. Regulatory structure, which I will distinguish from supervision in a moment.

There were a number of aspects here, which I won’t go into in any detail. One -- they mentioned three subheads.

One is gaps in coverage. AIG is a great example. AIG was overseen by the Office of Thrift Supervision because they held a little thrift, and there was nobody really looking at that company and the risks they were taking.

Another example is the investment banks, which were a huge problem, of course, Bear and Lehman and Merrill, et cetera. They were not officially, legally supervised by anybody. Only through a voluntary arrangement with the SEC did they become under the SEC’s oversight, but the SEC is not an examination agency; they’re an enforcement agency. They did not really examine those firms in the way banking agencies did.

So gaps is number one.

Number two, I would mention capital and liquidity. You know, was the Basel framework adequate? I’m sure you’ll look at that.

I think one of the things that struck me the most about this, though, was liquidity which, again, we saw in the crisis in September and October. We saw what are, again, old-fashioned bank runs, except they were much more sophisticated. For example, runs in the tri-party repo market, where what we used to think was very stable funding, which is funding through repurchase agreements where the investment banks would put out assets overnight and use that as collateral, they thought that was a pretty much foolproof form of short-term funding. But in a crisis where people began to doubt the liquidity or the value of those assets, the haircuts went up and you got into a vicious cycle which led to the Bear Stearns collapse and was important in the Lehman collapse as well.

There’s been some interesting work on this. There’s Markus Brunnermeier at Princeton, along with Charles Goodhart and others have written some nice papers on this. Gorton, again, has shown some good papers on this. But, again, liquidity issues were just as important as capital issues, I think, in the fall last year.

And finally, under the heading of regulation, *“too big to fail,”* you’re going to look at that, I’m sure, in great deal. You know, why did the firms become so big? Why did they become so interconnected?

From my own experience, trying to deal with the crisis, by far the worst problem was the lack of an appropriate framework for dealing with failing non-bank firms. So we have an FDIC framework for dealing with failing banks, but the general public does not clearly distinguish between banks and bank holding companies, but they are very different institutions legally and structurally.

We do not have tools for dealing with bank holding companies. So the ad hoc responses to Lehman and AIG, et cetera, were essentially forced, I would argue, by the lack of appropriate tools.

A couple of other things. If you looked at the weaknesses in financial management, if you look at the private sector for a moment, there were a lot of problems. But I think a very important area was weakness of risk management. So these firms became very big and they became very complicated. They got involved in many activities.  And they simply did not -- and, of course, the supervisors bear some responsibility for not insisting appropriately that they do it -- but they did not have, and some of them still don't have to our satisfaction, the management information systems, the techniques, and so on, in order to look at their risks across their entire business.  Not just in each individual subsidiary, but across the entire firm.

So liquidity was an issue there, measuring liquidity.  But, you know, one of the -- I'll just give you one example, which is that there was a view -- and some people at this table have spoken against this view correctly -- that the derivatives and so on were going to create much more risk-sharing, you know, spreading risks out, so that even though there were a lot of risks in the system, they would be held by lots of different investors.

It turned out that, in many cases, large institutions were exposed to risks in very concentrated ways that they did not even appreciate, they didn't even understand.  So one part of their business would be holding subprime mortgages, another would be exposed to another company that was vulnerable to subprime mortgages. A third would have exposures to a SIV which held subprime mortgages, et cetera, et cetera. And they had no way of abrogating all of that.

Supervision, two comments: One is, we had –- under Graham-Leach-Bliley, we had consolidated supervision, and the Fed is the umbrella supervisor of bank holding companies and financial holding companies. The Graham-Leach-Bliley law, however, was ambiguous in that it was not clear to what extent the Fed could override or even be involved in the supervision of the subsidiary companies which were, according to the law, primary supervisors were the functional regulators, like the SEC or the OCC. So there was a certain amount of uncertainty about to what extent the Fed should be looking at non-bank subs, et cetera.

We have since, in the last year or two, become much more aggressive in doing that; but that was clearly a problem with the law.

Another aspect of supervision is the lack of what has become known as *"macroprudential"* or *"systemic"* supervision. There was too much focus on individual firms. Sort of a typical thing would be, you know, this firm owns subprime mortgages, they've now gotten rid of them, so we're fine. But nobody asked the question: Where did they go and how did it affect the system? And we saw in the crisis lots of systemic risks that arose because of weaknesses in the infrastructure of the system, interactions between firms, contagion, and so on, which weren't looked at adequately.

The Fed is currently revamping its supervision to take into account more macroprudential types of oversight.

And the last comment -- and with Ms. Born here and others that I don't need to go into in much detail -- but obviously OTC derivatives were a problem. They may not have been a causal problem, but they transmitted stocks. There were problems with the clearing of settlement of OTC derivatives. And there were problems with the risk management, AIG being the poster child example of that.

And, of course, the Administration's proposal and proposals from other bodies have tried to increase the use of central counterparties and other mechanisms to make the derivatives a safer instrument.

That's a very quick overview of some of the themes that I would just put before you.  And I know you've got a lot of others to think about.

Vice Chairman Thomas:  Should we look at this list in any particular way?  Is it hierarchical, is it ranking, or is it just --

MR. BERNANKE:  No, just an intent to list the major themes that I think you ought to put in your hopper.

Vice Chairman Thomas:  So do we want go through, and do 1, 2, 3, 4, 5?

MR. BERNANKE:  Well, I don't see how you can avoid --

Vice Chairman Thomas:  There isn't a consistency in terms of what you're looking at?

MR. BERNANKE:  Yes, looking at the macroprudential part.

Vice Chairman Thomas: Right.

MR. BERNANKE: I think the issue of the shadow banking system is very important and the role of the maturity transformation, the fact of the use of the short-term financing is something that focus on, say, subprime lending might miss, and I think you need to think about that. And I think that really was a very important element in the crisis, as was liquidity problems associated with -- you know, with Lehman and Bear Stearns and so on. So those are some things you might otherwise perhaps miss.

I think you'll obviously have to look at both the risk management in the private sector and the supervision regulation of the government regulators. So I don't think -- I'm sure you'll have to look at those things as well. But I wanted to point out a few things from a perspective that you may or may not have otherwise looked at.

CHAIR ANGELIDES: All right, I think what we'd like to do is go around and pose questions to you for the time you're here.

MR. BERNANKE: Okay, great.

CHAIR ANGELIDES: Peter, why don't we start with you?

COMMISSIONER WALLISON: Okay, I'm interested in what happened with Bear Stearns, Lehman, and AIG, and your perspective on why Bear Stearns was rescued, Lehman not, and then AIG rescued.

And if you could, be as specific as you can about what is expected to happen if one of those companies failed, why something you thought would happen with Bear Stearns but you didn't think would happen with Lehman, and so forth.

MR. BERNANKE: Yes. So let me first say that the toughest choice we made was the Bear Stearns action. It was the first one. And it came in the middle of a very sharply intensifying financing crisis in March of 2008. What we were seeing at that time was exactly this cycle of worsening haircuts, that is, where the financing -- so that Bear Stearns was the weakest of the six or five investment banks. The investment banks relied on this repurchase agreement, overnight tri-party repo financing model.  And this is when that model was really beginning to break down.

And as the fear increased, the lenders, via the tri-party repo market and other short-term lending markets, again, began to demand larger and larger haircuts, premiums, which was making it more and more difficult for the financial firms to finance themselves and creating more and more liquidity pressure on them. And it was heading sort of to a black hole.

Considered at the time of Bear Stearns -- and I think we'll want to give you a much fuller answer at some point -- was that the collapse of Bear Sterns might bring down the entire repo market, the entire tri-party repo market, which is a two-and-a-half trillion-dollar market, which was the source of financing for all the investment banks and many other institutions as well. Because if it collapsed, what would happen would be that the short-term overnight lenders would find themselves in possession of the collateral, which they would then try to dump on the market.  You would have a big crunch in asset prices.  And probably what would have happened would -- our fear, at least -- was that the tri-party repo market would have frozen up. That would have led to huge financing problems for other investment banks and other firms; and we might have had a broader financial crisis.

It helped that we had a solution which was obviously not a perfect solution, but -- in fact, what we thought we had was a solution that didn’t involve any government money, which involved a merger, an acquisition by J.P. Morgan of Bear Stearns.

In the end -- as you know, we came down to the end -- and in the end, we ended up financing $30 billion of assets to moderate the risks associated with the acquisition for J.P. Morgan. At that time, I think we had sort of felt that we were committed to doing this, and we were fearful of the effects on the tri-party repo market on financing in general of a collapse of Bear Stearns.

And, you know, following the rescue, the markets did improve quite a bit. Then we had for a number of months a considerable increased stability in funding markets.

So that was a very important decision. We made that collectively, that including, of course, the Treasury Department.

And again, to answer your question most directly, I think we were primarily focused on the potential collapse of the short-term funding markets, particularly the overnight repo markets and tri-party repo markets, which would have created a contagion to many other firms.

Subsequently, of course -- we didn’t mention Fannie and Freddie, but Treasury took over Fannie and Freddie. We felt at that point, you know, that the implicit guarantee of the government on all of Fannie and Freddie’s MBS and debt was there, and that this was so globally held in such large amounts, that the loss of confidence in that would have basically been a huge problem for the stability of the financial system.

We were able to do that because Congress had passed a month earlier, it passed the HERA law, which gave the government the authority to go in, and the

Federal Reserve was supportive of FHFA and the Treasury in its operation, which I think, you know, was at least successful from the perspective of stabilizing the firms and avoiding financial calamity. But, of course, it's been very expensive.

So now we come to this very intense period in September and October. As a scholar of the Great Depression, I honestly believe that September and October of 2008 was the worst financial crisis in global history, including the Great Depression. If you look at the firms that came under pressure in that period. . . only one . . . was not at serious risk of failure. [] So out of maybe the 13 -- 13 of the most important financial institutions in the United States, 12 were at risk of failure within a period of a week or two.

Globally -- I gave a speech in Jackson Hole in August, which sort of tried to put a global perspective on this. And the fact is that globally, somewhere in the order of 15 to 18 major firms were bailed out, rescued, saved by their governments in Europe and in the UK. So it was very much a global phenomenon, and in that respect also extraordinarily important.

So let me say now for the record, for the tape -- you know, I’ve said the following under oath and I’ll say it again under oath if necessary -- we wanted to save Lehman. We made every possible effort to save Lehman. We sent –- we called together –- we had a meeting together all weekend at New York Fed in New York. We asked the CEOs of all the major firms to come to New York Fed. We worked with them. We had two possible buyers. We worked with them. We met with the risk managers and the other senior staff of the major financial firms.

We knew -- we were very sure that the collapse of Lehman would be catastrophic. We never had any doubt about that. It was going to have huge impacts on funding markets. It would create a huge loss of confidence in other financial firms. It would create pressure on Merrill and Morgan Stanley, if not Goldman, which it eventually did. It would probably bring the short-term money markets into crisis, which we didn’t fully anticipate; but, of course, in the end it did bring the commercial paper market and the money market mutual funds under pressure. So there was never any doubt in our minds that it would be a calamity, catastrophe, and that, you know, we should do everything we could to save it.

We could not. We did not have the legal authority to save it. And I will explain the difference between Lehman and AIG in just a moment.

We made every effort possible. But when the potential buyers were unable to carry through, in the case of Bank of America, because they changed their minds and decided they wanted to buy Merrill instead; in the case of Barclays, [][because they withdrew] -- we essentially had no choice and had to let it fail.

Two days later, AIG, again, we felt that its failure would threaten the stability of the global financial system. Among other things, they had as counterparties many of the world's largest bank financial institutions, many of the world's largest banks. The uncertainty in the markets about the financial impact of the collapse of AIG on so many large financial institutions in this period of intense crisis already, plus the impact on insurance markets, et cetera, et cetera. And, again, we could provide you much more detailed documentation on exactly what our analysis was and how we worked through this. But we were, again, very, very concerned that the failure of AIG would have enormous consequences for the global economy and global financial stability.

Now, why AIG and not Lehman? The problem was -- well, to give you a broad perspective, around the world, the United States was the only country to lose a major firm. Everywhere else, countries were able to come in, intervene, prevent these failures.

And I think, politically speaking, this is one place where the parliamentary system probably worked better because the prime ministers and the parliamentary leadership were able to get together over the weekend, make decisions, and on Monday morning, able to take those choices. And, generally speaking, the central banks, although they were involved in Switzerland and other places, in finding solutions, were not leading the efforts to prevent the collapse of these institutions.

But in the United States, as you know -- of course, we don't have the political flexibility for the government -- quote, unquote -- to come together and make a fiscal commitment to prevent the collapse of a firm. And so basically, we had only one tool, and that tool was the ability of the Federal Reserve under 13(3) authority to lend money against collateral. Not to put capital into a company but only to lend against collateral. That, plus our ingenuity in trying to find merger partners, et cetera, was essentially all -- that was our tool-kit. That's all we had.

In the case of AIG, the reason AIG was set up the way it was originally, the financial products division, which did the CDS, attached itself to AIG precisely because it was a large, highly-rated insurance company with lots of assets. Therefore, it could sell CDS without what would otherwise be sufficient capitalization and protections because the counterparties would know that this was a highly rated firm with lots and lots of assets. It was precisely because of that reason when financial products had to sell -- had to come up with collateral and was facing a run on its positions, that the Fed -- that there existed the collateral, the assets, that the Fed could lend against.

So we were able to –- we made a loan -- we didn’t put capital in, we made a loan against the assets of the entire company. And the fact that they had the collateral put up, meant that we were able to put in the cash liquidity that allowed them to pay off their collateral that diverted the bankruptcy.

In the case of Lehman Brothers, there was just a huge hole. I mean, they were insolvent and they had a thirty- to forty-billion-dollar hole in their capital structure.

At one point, we got an offer from Bank of America. They said, “We’ll buy them if you’ll finance” -- I’m making up numbers now, but rough order of magnitude –- “if you’ll finance an $80 billion portfolio for $80 billion,” except its actual market value was $50 billion. So in other words, they wanted a

$30 billion gift, essentially, in order to make that acquisition. We did not have the legal authority to do that, not to mention the political backing.

Vice Chairman Thomas: And you wouldn't have done it, anyway.

MR. BERNANKE: That's right. And it would have been a bad decision, anyway, because we had so much -– so many other firms already on the brink, coming down the pike. So I will maintain to my deathbed, that we made every effort to save Lehman, but we were just unable to do so because of a lack of legal authority.

I also want to say a couple other things really quickly -- I know this is taking too much time on this topic, but it's obviously a very important one.

First, is that *"viewed too big to fail"* is a very, very serious problem, and one that was much bigger than was expected. And I think it's absolutely critical that if we do only one thing in financial reform, it is to get rid of that problem. It has to be possible for firms to fail. But in the context of the financial crisis last fall, it was our judgment, which was -- in my opinion, was vindicated by subsequent events, that the collapse of one of these firms would have had very serious effects, not only on other financial firms but on the whole economy.

The other comment I would make is that there is a view out there which says, “Well, the problem wasn’t the failure of these firms, but the fact that people didn’t know what to expect. People thought that Lehman was going to be protected and, therefore, when it failed, it was a huge shock, and that led to the worsening of the crisis.” I find -- I’m very skeptical of this point of view. I don’t think it has any real basis. And I would just point out as evidence that prior to Lehman’s failure, the CDS spreads were blowing out, that everybody -- every creditor was running to pull their money out of Lehman. The stock price was plummeting. This doesn’t sound like a situation where people thought that Lehman was going to be protected. There was truly a lot of uncertainty, a lot of fear that Lehman would not be protected. And, in fact, it was that very fear and uncertainty that forced us into the situation in the first place.

So while I certainly recognize that the rescues were not done in the cleanest way one could imagine, I plead two points:  One is that we just didn't have the powers; we did the best we could with the limited authorities we had; and, secondly, that I think the events have vindicated the view that, while it was an extraordinarily unpleasant situation and one where we shouldn't have been in in the first place, the failure of those firms, particularly Lehman, created a huge amount of chaos in the financial system which spilled over to  a very sharp decline in economic activity around the world.

CHAIR ANGELIDES:  Thank you.

Douglas?

COMMISSIONER HOLTZ-EAKIN:  I want to go to this notion of a gap in the regulatory structure.  If you could bring the clock back to where there was a macro prudential regulator, what would they have done that would have helped you and how would they have identified the *"too big to fail"* folks?

MR. BERNANKE: Well, I think the most elementary thing they could have done would have been to put together a list of the biggest, most complicated central firms. Anybody on Wall Street could put that list together in 30 minutes. And then they should have reviewed -- they could have reviewed the system of supervision for each one of these firms and had asked for reports on what are the principal risks, you know, within these firms, et cetera.

So, again, the case that keeps coming to mind is AIG. I think a careful review from a systemic point of view of the major institutions would have identified AIG very quickly as being one where there was not adequate protection against not only the firm’s own safety, but for the system as a whole.

COMMISSIONER HOLTZ-EAKIN: But one of these –- I just want to understand this -- is that no one could understand basically the panic in the tri-party repo. That the run on the repo market really is what drove the spreading of the crisis.

Would anyone have been able to anticipate that? You didn’t seem to.

MR. BERNANKE: No. So maybe not. Maybe not. I mean, I think a thorough review of the system would have identified this as a critical piece of infrastructure that required careful attention. But it’s possible that it might not have been identified specifically. But, of course, that was then, this is now.

COMMISSIONER HOLTZ-EAKIN: Right.

MR. BERNANKE: We now have the benefit of the crisis.

You’re absolutely right, I mean, that there’s no guarantee that a macroprudential approach will identify every possible crisis. But clearly, where we can, we want to strengthen the system, we want to create as many ways of identifying problems as possible. And a lot of what is proposed, for example, by the Administration, the Fed, and others, is about making the system stronger, and strengthening the infrastructure, central counterparties, et cetera, so that no matter what happens, whether it’s a 9/11 event or whatever, the system will be more resilient and able to deal with whatever kind of shock occurs.

CHAIR ANGELIDES: Byron.

COMMISSIONER GEORGIOU: Back in last September, when you created -- you began to supervise Goldman Sachs as a single bank holding company at the Fed. Do you regard that as a temporary condition or a permanent one? And if temporary, you know, when would it end? If permanent, what steps are being taken to reduce the risk? How long will they have access to the Fed window and so forth, since it’s an institution that will be regarded as so large as to be required to be protected forever?

MR. BERNANKE: Okay, well, there’s several parts to that.

So, first of all, under current law, Goldman Sachs is a bank holding company so under current law, the Fed is the umbrella supervisor of Goldman Sachs. Not under any special emergency provision, but under current law. And as long as they’re a bank holding company, as long as the law is not changed, we will do our best to be the umbrella supervisor of that company. And I have to say, given what's out there, that we are the most qualified agency to supervise them.

Now, of course, there may be changes in that structure, there may be changes that the -- Congress may require changes in the complexity, size, all those different things. Those are things we can talk about.

You used the word *"protection."* My view is that, going forward, that the firms that are systemically critical -- and Goldman Sachs is one of them -- should, on the one hand, receive tougher, more comprehensive oversight than other firms. Because not only are they -- not only do we need to protect them themselves, but because of the damage they would do to the broader system if they collapsed.

Moreover, tougher, more comprehensive oversight, including higher capital liquidity requirements and so on makes it less attractive to be big. And so only firms that have strong economic rationales to be big would therefore be big. And there would be an incentive to shrink if, in fact, you could escape some of this intrusive oversight.

The other part, though -- and, again, I just want to say this as strongly as possible -- the reform will be a failure if we could not contemplate the failure of Goldman Sachs. That is, there needs to be a system by which Goldman Sachs will go bankrupt and Goldman Sachs' creditors could lose money. If we don't have that, then we might as well treat them as a utility, because that's what they are.

COMMISSIONER GEORGIOU: Right.

MR. BERNANKE: So if we want them to be a free capitalist company, then they have to be able to fail.

Vice Chairman Thomas: Downsize.

MR. BERNANKE: We don't have -- there are many ways to do it. You can downsize them, many things -- and we can discuss that, and certainly we'll have plenty of opportunity to discuss that. But one way to do it, is to have a special bankruptcy regime which comes in, is not constrained in the same way that we were last fall by these standard bankruptcy laws, and is able to impose losses, is able to create a bridge bank that allows the critical parts of the company to continue functioning, is able to override existing collateral or employment agreements, et cetera, et cetera, to avoid any cost to the taxpayer but allow -- and avoid at least severe damage to the financial system, but allow for them to fail. And I just think that's absolutely essential.

COMMISSIONER GEORGIOU: But we don't have that in place yet. So if something happened -- if we faced a similar crisis today to what we faced two years ago, we're really not equipped to --

MR. BERNANKE: We are not. That's why we must -- I think it's important to deal with this as soon as possible.

CHAIR ANGELIDES: Senator?

COMMISSIONER GRAHAM: I'm concerned with the difference between what is happening in the United States and what has happened in certain European countries relative to employment during this period of financial crisis. Were there some options that were available that might have elevated the policy focus on employment and had the potential of reducing the current level? And what were those options and if they existed, and why were they not accepted?

MR. BERNANKE: Well, I think, first of all, you have to recognize that the crisis originated in the United States, for the most part, although Europe and the UK were also very much caught up in it. And the impact it had on our economy was greater than on most other economies. That's a little bit of a complicated statement because some countries like Japan had very sharp declines after Lehman, but then they began to bounce back. So that the impact on the U.S. economy was quite severe and quite broad-based.

We had sectors like the housing sector and so on that shrunk and lost a huge amount of jobs just because that was part of the crisis itself.

The other thing I -- so the severity is a big part of it.

Another part of it is that in Europe, in particular, there are a lot of -- the labor markets are different. They are, generally speaking, more regulated, which we have at various times viewed as being a negative for them relative to us because we're -- they've had, for example, much higher average unemployment for 25 years than the U.S. because the markets are much less flexible, you can't fire people, therefore, you don't want to hire them, and so on. But in this case, it looks like that those subsidies and so on may be at least delaying some of the employment effects of the crisis. In particular, for example, in Germany, firms are subsidized to keep workers on the payroll, and they're subsidized to use work-sharing, short hours split among workers.

So the conventional wisdom from my German colleagues, Bundesbank and so on, was: Right, we haven't seen that much increase of unemployment in Germany yet, but we anticipate a big increase that will go into 2011 and even beyond.

Now, recently, as the European economy looks to be coming back some, they've become a little bit more optimistic about where that's going to go. But I guess my point still stands, that in the U.S., late '08 and early ‘09, employers became very, very worried about the broad economy, and they cut workers very sharply. If you look at a graph of the depth of recession against the amount of unemployment loss, this one really stands out. Not only is this a bad recession, but even given the depth of the recession, the employment loss is worse than -- much worse than usual. Now, that may mean that things will snap back better, we don’t know, in the future.

But in Europe, they didn’t have as big a cut. And I think initially, at least, that was because of government subsidies of various kinds.

Given that the economy now -- now there’s more confidence that we’re not going into a second Great Depression, and Germany and Europe, in general, are growing again, maybe they have avoided some of that big, sharp decline. But I don’t think I would want to trade our labor markets, in general, for German labor markets. They’re less efficient and they have higher average unemployment rates over longer periods. But they may have cushioned some of the effect of the shock this time.

Vice Chairman Thomas: The problem is, you just increased that structural arrangement, which means you carry it out over a longer period of time.

In part, along Bob's line, you know how much we tried to figure out how to deal with international trade, and cooperation and the rest. I think one of the things that happened, especially with AIG -- and I'm just judging by the way people talk to me -- they were just absolutely shocked when you put the money into AIG and it's like a bucket, and where the money flowed, all these European folks and the rest of it really brought home, I think, for some folks for the first time how interdependent we are. And Great Britain is looking at doing some things to their banks far greater than we've begun to talk about doing, although maybe the impact wasn't as great.

Do you have any concern about how now, at least knowing the reasons for it -- and we're going to try to go through a regulatory structure to help correct that -- that there's enough international discussion, a willingness to cooperate, to create a structure so that you don't get the effects that we had? Or do you see people saying, "It was our fault, we're lucky, and we don't need to worry quite as much as they do"?

MR. BERNANKE: No, I think the Europeans and the British, in particular, are quite taken by the severity of the crisis, and they recognize that some of the problems were homegrown as well as imported from the U.S.

I would have to say that, broadly speaking, financial regulation is one of those areas where there's more international cooperation than in almost any other area of regulation. You know, we regularly go to Basel, they talk of the Basel Capital Committee, and they have many other subcommittees and various other types, and there's called the Financial Stability Board, which is a body that brings together the regulators and the central bankers from around the world. So there's a lot of standard-setting and rules and so on which are set up on an international basis. And then each country has to decide whether to implement them or not.

So there is a lot of coordination in that respect, and I think that's probably a good thing.

One area which is going to be a big problem, though, is I've talked fairly optimistically about this special resolution regime and bringing -- unwinding global, large, integrated complex companies.  We can kind of imagine doing that.  But one real big problem is going to be coordinating that internationally.  What happens if, you know, Citigroup has companies in a 109 -- has subsidiaries in 109 countries?  How are we going to manage that?  That's going to require a lot of international cooperation, some development of some treaties or other sets of rules that govern how we coordinate on that.

If we can't do that, then what may happen is that we may go to a world where large companies are required to separately capitalize their subsidiaries in each country.  So, for example, Citigroup owns Banamex, which is a big Mexican bank.  Under the kind of provision I'm thinking of, Banamex would have to have its own capital, its own liquidity.  And so if there was a failure, Banamex itself could stand on its own and the Mexican government would worry about Banamex, and we would worry about the rest of Citigroup. Now, that would actually greatly simplify the process of bringing down and closing a global company.

The open question -- and I've heard arguments on both sides -- is to what extent would that change, reduce the ability of global firms to operate effectively internationally, to bring capital across borders, to operate as counterparties to international firms, et cetera, et cetera, would that substantially reduce the effectiveness of globalized finance? Maybe it's worth it, even if it does. But I think that's something we have to look at.

And as I said, people have different views on that.

Vice Chairman Thomas: A quick follow-up on that.

MR. BERNANKE: Sure.

Vice Chairman Thomas: If you take a look at AIG, you had the ability by virtue of how successful the rest of them were to go and put money in.

Was there any discussion about cutting that leg off, since the rest of it was stable? And if you were worried about *“too big to fail,”* that cutting a leg off isn’t failing?

MR. BERNANKE: The financial products division?

Vice Chairman Thomas: Yes.

MR. BERNANKE: That was not within our legal authority. The financial products was --

Vice Chairman Thomas: The only way you could was to move -–

MR. BERNANKE: The only way, what gave financial products its AAA rating was the full faith in credit, essentially, of the whole AIG company.

Vice Chairman Thomas: Of the whole company.

MR. BERNANKE: There’s no way to say that financial products is bankrupt without bringing down the whole company, and that was the dilemma.

CHAIR ANGELIDES: All right, Mr. Chairman, so we obviously want to get the best understanding of what occurred here in the sense we're undertaking an autopsy. So actually before you came in, we had a fairly robust debate about the best way to slice this, to get the best window on what happened.

One of the things you've talked about today is you've talked a lot about institutions that have systemic risks associated with them. You talked about, within institutions, institution-wide risk. You've actually talked a little bit about J.P. Morgan as an institution conducting itself differently, I think, or at least being the one out of 13 that didn't have an immediate liquidity, I guess, or cash pressure in that particular window.

And then finally, you spoke about, on a going-forward basis, your view that as you look at the marketplace, there's particular attention to institutions that have a systemic challenge.

So this is really -- it's going to sound like a process question, but it's really trying to -- I'm trying to figure out, as one commissioner and as the chair, how we get the best look at what happened.

And I guess I'd ask you to inform us a little about whether we ought to be looking at this as a set of separate issue strands or product lines, or the extent to which we've got to look at it on an institutional and systemic basis.

And to what extent were these, in your view, were the problems caused by specific lines of business or was it the aggregation or the interaction of those? And that's kind of a sub of that.

MR. BERNANKE: I think, unfortunately for you, it's the latter. I think, one of the --

CHAIR ANGELIDES: The latter being?

MR. BERNANKE: The integration, the interaction of all these different factors.

So one of the reasons -- so, again, I fully admit that I did not forecast this crisis. And in defense, for what it's worth, is that, again, if you just thought about this as a subprime mortgage crisis -- I mean, clearly, you want to understand why subprime mortgages did what they did and why they were such a problem and so on. But it wasn't subprime mortgages per se.  Subprime mortgages were just the trigger that set off a whole bunch of other bombs.

So I think -- what's the name of the author who wrote *"Airport"* and --

CHAIR ANGELIDES:  Hailey?

MR. BERNANKE:  Yes, yes.  So you know how he writes his books?  You know, he's got these different characters.  You know, there's this long discussion of Character A, and then completely separate, Character B, and then all of a sudden at the end there's some kind of huge crisis and they're all squished together?

CHAIR ANGELIDES:  I've only seen the movie.

MR. BERNANKE:  All right.  So I think because the -- I think the only way to do this, from my perspective, would be to identify major topic areas, the macroeconomic context, evolution in the types of businesses, and their risk management, et cetera.

CHAIR ANGELIDES:  What do you mean by *"types of business"*?

MR. BERNANKE:  I mean, how does Goldman Sachs look different today than it did ten, 15 years ago, and why?

CHAIR ANGELIDES: Okay.

MR. BERNANKE: And how did they manage the risks that –- the risks, liquidity issues, and so on -- how did that all change, and was it created by innovations of various kinds, was it a function of regulatory change, et cetera? What was happening to the regulatory framework over this period?

I would talk about the shadow banking system; I would talk about supervision.

Vice Chairman Thomas: The perfect storm of all of these.

MR. BERNANKE: And it’s a perfect storm, is what it was.

And then after having laid out how each of these areas evolved, and what the main forces were, then if I were doing it, I would then sort of do a kind of a narrative and sort of say, how did these things interact with each other to create this perfect storm? And I think unless you identify it, there’s no single simple thread, linear thread, that will let you do it. You’ve got to identify the major categories of developments and then talk about how they -- how factor X -- so in our case, what's the connection between Lehman Brothers and General Motors? Lehman Brothers' failure meant that commercial paper that they used to finance went bad, which meant that the reserve fund which held the Lehman commercial paper broke the buck, which meant there was a run in the money market mutual funds, which meant the commercial paper market spiked, which was problems for General Motors. So these connections are very complex, and the only way to do it is to understand the main threads and then to try to tell the narrative.

Vice Chairman Thomas: I find it's fairly easy after the facts.

MR. BERNANKE: Well, after the facts, yes.

CHAIR ANGELIDES: And I want to ask one follow-up.

To what extent do these come together in certain mega-institutions -- these threads?

MR. BERNANKE: Well, I mean, clearly, the mega-institutions were the focus of the crisis. I mean, that's not a necessary thing. We've had other crises, like the savings and loan.

CHAIR ANGELIDES: But in this one. In this one.

MR. BERNANKE: In this one -– I'm saying, but in this one, the mega-institutions were, in some sense, the heart of the crisis. And all the things I'm talking about, one way or another, impacted on their stability and on the stability of the system.

So there were things like over-the-counter derivatives trading and things of that sort, which reflect interactions between firms. There were some medium-sized firms that were involved, the Indy Macs and the WaMus and things like that. But basically, it was the complexity of large firms.

And think of it as -- and, again, it was our -- but it was part of our problem, that we were looking at this firm [in the fall of 2008] and saying, "Citigroup is not a very strong firm, but it's only one firm and the others are okay," but not recognizing that that's sort of like saying, "Well, four out of your five heart ventricles are fine, and the fifth one is lousy." [] They're all [][interconnected], they all connect to each other; and, therefore, the failure of one brings the others down.

CHAIR ANGELIDES: All right, Heather?

COMMISSIONER MURREN: Actually to follow on that thread, there's been a lot of discussion about the term *"systemically important"* or *"system risk,"* but I haven't seen anyone define it yet. And what characteristics would you say would define a financial institution that is systemically important and how would you measure those?

MR. BERNANKE: That's a great question.

There is some research that does that, and there's some papers. I think the Cleveland Fed has some papers. There were a number of articles out there that try to do it. We can probably dig some of that up for you. So people have taken a serious hit at this.

One lesson from those exercises is that simple size, for example, is not enough. That's one of the reasons that just having a size limit on firms is probably not adequate.

So by definition, a systemically critical firm is one whose failure would create broad problems for the financial system and the economy. And then you want to think about the mechanisms for that happening.

One would be size and, therefore, the number of counterparties that it has, the number of customers and counterparties and creditors and so on that it has. That's certainly one dimension of it. Another element with the word that comes up a lot is interconnectedness. Which means, for example, Bear Stearns, which is not that big a firm, our view on why it was important to save it -- you may disagree -- but our view was that because it was so essentially involved in this critical repo financing market, that its failure would have brought down that market, which would have had implications for other firms.

COMMISSIONER MURREN: So a disproportional involvement in a particular segment of the financial markets would be the way to define that?

MR. BERNANKE: Particularly -- so there are parts of the system which you can call the plumbing or the infrastructure, and those have to do mostly with funding, financing, or simply trading in and price discovery and clearing and settlement. Anything that threatens the integrity of those infrastructure things is very dangerous.

So, fortunately, J.P. Morgan was pretty stable. But J.P. Morgan actually is the bank that runs -- one of the two banks -- that runs the tri-party repo market.

J.P. Morgan’s failure would have been a huge problem because that market would have essentially been inoperative because there are only two banks that run in that market, and they don’t have compatible computer systems. So that’s an example.

Another example is AIG -- well, so AIG is big. But I’ll give you a smaller one, like some of these companies that were mortgage insurers, which are pretty small companies. But, you know, their failure required by accounting rules would have forced the markdowns -- serious markdowns of many of their counterparties who had used them to insure their mortgage positions, for example. So they were connected to a large number of other firms.

And then I think -- so size, interconnectedness -- size in terms of both assets, liabilities. Interconnectedness in terms of the creditors, the connection to key markets and infrastructure. And then the third would be provision of critical services, like the J.P. Morgan example.

One of the -- this is an example from 1987 -- but one of the things that was of real concern during the ‘87 stock-market crash. Stock-market crashes don’t usually cause problems in an economy. But one of the concerns was that losses be taken by participants in the Chicago Exchange, which traded the stock-market futures might have caused the failure of the exchange. And the Fed was involved 22 years ago in making sure that banks were providing sufficient credit to the exchanges and to their participants to make sure that didn’t happen, because the collapse of the exchange itself, which after all was a company, would have had, I think, very serious implications.

So companies that either are closely tied to or perform critical market functions, like exchanges or clearinghouses, are also very important.

One of the -- just a plug, one of the things that the Fed has asked for, and is in the Administration proposal, is to have a more consistent system of prudential oversight of critical infrastructure, payments and settlement systems, which currently we have a very patchwork kind of system where can we have different overseers for different types of exchanges and so on.

So, anyway, there are attempts to measure systemic risk.

Another criterion that's been used by some scholars is correlation. If the stock price of this company falls, what happens to other stock prices? If it's highly correlated, it might suggest there's a connection and correlation across those firms.

It's obviously not rocket science, but there is some work trying to do that, and I was just trying to identify some of the key ones.

COMMISSIONER MURREN: Thanks.

CHAIR ANGELIDES: Keith.

COMMISSIONER HENNESSEY: Derivatives, just focusing a little more narrowly. Obviously, credit default swaps were a big concern as a transmission mechanism, and then obviously the toxic assets themselves were asset-backed and mortgage-backed securities and CDS and all those. But there are lots of other kinds of derivatives that I never remember coming -- you know, stock options, interest-rate swaps, and currency swaps, all of those other kinds of things.

To the extent that there were specific problems over the last couple years, were they just in CDS -- I'm sorry, within those universe of derivatives, was it CDS and asset-backed securities, or were there broader problems or problems with other subsets of the derivative world?

MR. BERNANKE: I think the biggest problems were in those two categories you mentioned. There are two related -- well, the problems that arose were, first, where derivatives, for whatever reason, were thought to be creating risk-sharing and they weren't for one reason or another -- and so the complexity of the derivatives positions.

In some cases, you know, for banks, we have simple leverage ratios.  For hedge funds and so on, it's almost impossible to figure out what their true leverage is because derivative positions create effective -- you know, de facto leverage, and so on.  So figuring out exposures and leverage and so on is much more complicated because of the derivatives and the inability -- more particularly, the inability of the firms themselves -- in principle, you could model for different scenarios, for different kinds of shocks, you know, how your position would change, taking fully into account all the derivatives positions.  But that wasn't done well.  And so it was a layer of complexity.  It wasn't really fully accommodated by the risk management. So that's one element.

COMMISSIONER HENNESSEY:  So just to repeat, that said, the two that I described, and then a general problem of measurement having to deal with leverage ratios and capital, right, which is -- it’s hard to value the derivatives --

MR. BERNANKE: Right.

COMMISSIONER HENNESSEY: -- to figure out how much from X is leverage.

MR. BERNANKE: Right.

COMMISSIONER HENNESSEY: Okay.

MR. BERNANKE: Now, the other problem, though, which distinguishes credit default swaps from interest rate swaps, for example, has to do with how they are traded and cleared. So the CDS market grew really, really quickly from nothing, and didn’t have an appropriate infrastructure for -- I mean -- to give Tim Geithner credit, when he was at the Federal Reserve Bank in New York, the Federal Reserve Bank in New York was working really hard on a voluntary basis with all the CDS dealers in New York to try to set up a rational system just for keeping track of trades. I mean, they were doing everything on paper, and it was days behind and nobody knew who owned what or who owed what to whom.

They were assigning contracts to others without telling the original -- et cetera, et cetera.

So just the basics of having a well-working infrastructure for trading, clearing, and settlement was missing in that huge, rapidly expanding sector.

Vice Chairman Thomas: So I can stay with you on this --

MR. BERNANKE: Yes.

Vice Chairman Thomas: -- why was it expanding so rapidly? Because there was no tent to put it under?

MR. BERNANKE: Well, it's actually a -- from a finance theory point of view, it's actually a very clever instrument.

Vice Chairman Thomas: Oh, yeah?

MR. BERNANKE: What it does, it allows you very cheaply and efficiently to insure yourself against the credit risk of a particular firm or even an index of firms. So --

Vice Chairman Thomas: Give me -- in theory? In theory or in reality?

MR. BERNANKE: Well, in reality, if you use them right.

So to give you some examples, if you're making a big loan to Ford, you want to protect yourself, you can buy some, you know, credit default swaps that pay off before it goes bankrupt as a way of hedging. So in principle, it should help you manage your risk.

More generally, you know, it's kind of expensive to buy and sell corporate bonds. You can buy it -- it's much cheaper to buy and sell to CDS, which have the same risk. And if you want to bet on Ford, instead of buying a Ford bond, you can just insure Ford against –- you know, insure against Ford credit risk. It's essentially the same bet. It's the same reason why people use S & P futures instead of trading a basket of 500 stocks. It's just much more efficient to do it that way.

So -- or even more generally, suppose that you have bought a lot of stock in auto-parts makers. You can hedge that by appropriate CDS, you know, bets on Ford and GM, which are going to be correlated in certain ways.

So it’s a very -- in principle, it’s a very efficient instrument.

Vice Chairman Thomas:  And, therefore, used by a lot of people very quickly.

MR. BERNANKE:  Used by people, and grew very, very quickly.  And became -- frankly, the regulators probably didn’t help here.  Because in the sort of capital regulation of banks, to the extent that banks can show that they have hedged their risks, they can hold less capital.  So if I made a loan to Ford and I have a credit default swap that protects me against Ford’s loss, I could say, “Well, I don’t have to hold any” -- but, of course, the other problem here, besides just the primitiveness of this system in which they cleared and settled, was that the counterparty risk wasn’t taken into account.

So people who lost -- you know, you could lose money because you took a bad position on Ford, but you could also lose money because you made that bet with AIG and they couldn’t pay off.

So the advantage of interest-rate swaps, for example, is that they are traded on sophisticated, mature exchanges where everybody knows what the price is, the price discovery process is clear, the clearing and settlement is well-understood, rapid. And most important, there being a central counterparty, you don't have to know who you're trading with because the central counterparty will, through use of margins of capital, et cetera, will make sure that if your counterparty fails, you won't even know it, you'll still get paid off. And that would have -- you know, those kinds of arrangements, so long as those counterparties themselves are well-managed and have enough capital, et cetera. Because if they fail, then you're really in trouble. That protected the -- so that the CDS, a new instrument, did not have the same level of counterparty protection, exchange, and so on, as mature instruments like interest-rate swaps.

COMMISSIONER HENNESSEY: Thanks.

CHAIR ANGELIDES: All right, Brooksley.

COMMISSIONER BORN: Thanks.

We have talked a lot about -- and you've talked a lot -- about the need for a systemic risk supervisor and the need to understand the exposures of big institutions and their interconnectedness.

I'm a little concerned still about systemic risk that comes from financial products or financial markets that aren't adequately seen or understood by a banking supervision kind of institutional approach. And I wish you'd comment on that. I mean, nobody really, totally saw the problems with securitization or OTC derivatives.

MR. BERNANKE: Right. So -- I actually gave a speech about that.

So financial innovation we all thought was a great thing -- or maybe we didn't think it, but most people thought it was a great thing. But it obviously had a downside, which like any other invention, it can blow up if it hasn't been safety-tested sufficiently. And that clearly turned out to be an issue in the consumer level, for example. You know, there was a lot of -- there are a lot of people who argued that subprime mortgages were a big innovation, that they allowed people who couldn’t otherwise afford homes, to get homes; and, you know, it was a wonderful thing. So clearly, you know, people didn’t understand the vulnerability of, say, 3/27 ARMs to a downturn in house prices, for example.

So I guess what I would -- this goes back to my answer to Doug, which is that I do not think that there’s any foolproof way to avoid financial crisis in the future, although we could do all we can to make them smaller and less damaging.

But I would think that there would be some regular process -- I don’t want to be too prescriptive here -- but where, say, a consumer agency would look at new consumer products and sort of look at them, anyway, where regulators would look at big innovations in types of financial products, financial instruments. And not so much to be –- I don’t necessarily mean to say that the regulator would say, “You can’t do this one.” The key is that if you’re going to introduce some kind of product with complicated payoffs, that you are able -- that you can measure the risks associated with it in a very satisfactory way, both to your own satisfaction and to the satisfaction of the regulator.

So, yes, I think we need to have a somewhat more balanced view about the effects of financial innovation, that there are times when it can be dangerous.  And, again while, without promising, by any means, that we can identify all the problems, at least some attempt to look at things and road-test them and look at how they interact with other markets and ask some hard questions, would be at least a step in the right direction.

CHAIR ANGELIDES:  Finally.

COMMISSIONER THOMPSON:  So no calamity of this magnitude occurs without there being some early signals that something's going wrong.

In the case of this calamity, what were the signals?  Why did we -- and had we acted on them, might we have averted the disaster?

MR. BERNANKE:  Well, I don't know, I have to think about that.

I think there were people -- there were people saying -- including people at the Fed but others as well -- saying, in the year before the crisis, that risk was being underpriced, that spreads were very narrow, that markets seemed ebullient, that liquidity was, in some sense, excessive.

There were -- you know, the way I would put it is, I think there were people -- not necessarily the same people -- identifying various parts of the problems. You know, there were people who were concerned about derivatives, there were people that were concerned about subprime mortgages, there were people concerned about the overall credit environment, there were people who were concerned about off-balance-sheet vehicles.

But I think notwithstanding the claims of one or two people out there who are now sort of living on the fact that they, quote, anticipated in the crisis, I would still say that the interaction of these things, the “perfect storm” aspect was so complicated and large, that I was certainly not aware, for what it’s worth -- and it could be just my deficiency -- but I was not aware of anybody who had any kind of comprehensive warning.

There are people identified -- and the trouble is -- and particularly in this blogosphere we live in now -- at any given moment, there are people identifying 19 different problems, crises.

Vice Chairman Thomas:  And they may be right at some point.

MR. BERNANKE:  And this is the thing, one of them is probably right, but you don’t know who in advance.  So that’s something you ought to look into.

But I would be very skeptical -- there are people like -- you know, even -- take somebody like Robert Shiller who is now pretty famous for identifying the stock market and the housing bubbles; right?  A great economist.  I have great admiration for him.  He’s a very serious guy.  But he identified the stock market crash when the Dow was at 7,000.  So it went a lot further after that.

And he was pretty open-minded in 2002, 2003, whether there was a housing bubble or not.

So people that, quote, identify a problem, but they don't get the timing and the magnitude right. So I welcome your -- you know, your attempts to unravel this.

Again, consistent with what I've been saying, which is that a consistent systemic risk council would probably be able to identify some of these things and, you know, approach it systematically and so on.

So while I can point to a number of different things that various people said, I don't know of anybody who really anticipated the --

COMMISSIONER THOMPSON: So there were no actionable signals?

MR. BERNANKE: Well, no, I don't think that's true. I mean, I think -- well, so it's always a question from a legal perspective, if you're trying to figure out intent, and da, da, da, what did you know and when did you know it. It may be that very few people fully appreciated the risks of subprime lending in 2001 or 2002.

If we had been smarter or more systematic, might we have identified them? Possibly, yes.

So I think rather than saying, you know -- obviously some folks are going to come out looking bad or whatever based on what they saw or didn't see. But I think instead of relying on the future on particularly perspicacious financial geniuses who identify these problems accurately in advance, I think we just need to have a more systematic government or whatever structure that will at least make an attempt to look at the possible problems and --

Chairman Angelides: Can I ask a quick follow-up to what he said?

So what you said earlier, J.P. Morgan out of 13 was in a different position. Was there something that they saw or did that was definitively different in terms of market practice as an institution?

MR. BERNANKE: So J.P. Morgan was never under pressure, to my knowledge.

Goldman Sachs, I would say also protected themselves quite well on the whole. They had a lot of capital, a lot of liquidity. But being in the investment banking category rather than the commercial banking category, when that huge funding crisis hit all the investment banks, even Goldman Sachs, we thought there was a real chance that they would go under.

So I think the answer is that there were folks like Jamie Dimon, who -- you know, there is this classic thing that Chuck Prince said about having to dance when the music is playing. But that was exactly the wrong attitude. I mean, basically, if you were thinking about a longer-term -- a longer-term stability to your company, you want to think about what you have to do to make sure you’ve got plenty of reserves and protection against bad events and so on.

So there were some -- obviously, this -- to quote somebody else, Buffett: *“When the tide goes out, you see who is swimming naked.”* This was the thing that really separated the sheep from the goats. And the really strong people who really protected themselves came out better, and the ones who were relying on the general boom to sweep them along, they were exposed.

CHAIR ANGELIDES: Doug.

COMMISSIONER HOLTZ-EAKIN: I want to ask the flip side of John's question on the actions that could have been taken and just to toss you the softball to sort of just address this narrative, that it was the Fed/Treasury policy and these actions that made this worse. And I think you know this story: Rates too low for too long, creating a housing bubble, failure for supervision oversights, standards on mortgage origination, misdiagnosing a counterparty risk, lack of transparency and liquidity problems, the notion that post-Lehman credits were in fact tightening, markets recovering, and then the TARP request comes, and then the things explode.

How do you respond to that?

MR. BERNANKE: Okay, so –--

COMMISSIONER HOLTZ-EAKIN: Just quickly --

Vice Chairman Thomas: Just a conspiracy ball of wax.

MR. BERNANKE: Just very quickly, I think the answer is –-

COMMISSIONER HOLTZ-EAKIN: A softball, huh?

MR. BERNANKE: Well, this will go into more detail.

COMMISSIONER HOLTZ-EAKIN: We could get more later.

MR. BERNANKE: I think the Fed -- the Fed made some mistakes. But I think the current attitude in Congress that somehow the Fed is now the scapegoat, I think that's quite unfair.

The Fed, I don't think that our interest-rate policy was a big source of the problem, both because I don't think it was obviously the wrong policy, and also because, again, as I said, if the system had been incredibly fragile, you know, it wouldn't have caused anything.

We are, to some extent, culpable for not doing the subprime mortgage regulation. Small defense. The system was set up in a crazy way, which was we were supposed to make rules for mortgage brokers, et cetera, which we do not examine nor regulate. So it was a little hard, the visibility issue was a little bit of a problem. But nevertheless we did have ways of knowing that. And Graham, Luck and Greenspan should have gotten together and done something about that.

Supervision: We did a relatively good job on supervision. If you look at the companies that failed, []. And the Fed didn't do a perfect job, but -- and lots of things that we see now that can improve and are improving. But I don't think we were particularly culpable on the supervision part relative to the rest of the world.

On -- let's see, what else should I have?

COMMISSIONER HOLTZ-EAKIN: One big softball.

MR. BERNANKE: So I do -- I mean, I do believe that we were incredibly handicapped by lack of proper authorities in that the *"too big to fail"* problem, while extremely unattractive, was there, it was a real problem. I did, on numerous occasions, ask for better authorities in advance of Lehman, including in June of '08, for example, in a speech with FDIC. But it's clearly even ex post, you see it's not coming. So ex ante was never going to come.

So I think, you know, we live -- we were in a battlefield, and I think we did the best we could.

I know there are people, probably even on this commission, who believe that Lehman could have been allowed to fail without -- or Bear Stearns -- without real consequences. I don't believe that myself. I base it on historical knowledge, and I base it on our detailed analysis of the individual markets and interactions.

And I'll say one other thing about that, which is that, in looking at AIG -- think about this in a cost-benefit perspective. Looking at AIG, I thought to myself -- and I believe now -- that if we let it fail, that the probability was 80 percent that we would have had a second depression.

Suppose you believe it was 5 percent. I don't think any rational person could say it was less than 5 percent.

How much would you pay to avert a 5 percent chance of a second depression? $5 billion? That's probably what we'll end up paying.

So I think that those are the right decisions to make, and we did the best we could given the limited powers we had.

So a mixed record, but I think we played important roles in saving the situation. And I hope we'll play an important role in trying to get an improvement in our structure so that in the future we won't have a problem.

Vice Chairman Thomas: I know you will answer this from your current job because you've had so many different ones and you've also been able to step back and take a look at it.

One of the things that shocked us on the 9/11 information and the rest was not that we didn't have structures gathering information, but the absolutely incredible inability to communicate so that you had an overall picture.

One of the main points you mentioned was the global savings plan. I mean, you know, you're watching your monetary drop, we used to watch our fiscal drop. Now, here was this -- somebody was accounting for it, somebody was examining the profile and sovereign funds and the rest.

Was there any real collection of the amount of money coming in, where we were turning little, bitty dials, and there was a hose coming in from the private sectors --

MR. BERNANKE: We knew all those numbers, of course. But a lot of smart people -- and you asked the question about anticipation, people like Paul Volcker and others thought it was going to cause a crisis. But they got it wrong. They thought it was going to cause a dollar crash. It didn't do that. It caused a different kind of crisis. Just another example of how difficult it is to predict.

COMMISSIONER GEORGIOU: The dollar crash is just slower or --

MR. BERNANKE: Well, it hasn't happened yet, but it didn't happen in the early part of this decade.

COMMISSIONER GEORGIOU: Right.

MR. BERNANKE: Which is what Volcker at one point said there was a 75 percent chance of a dollar crash within two years, whatever. So he's been proven wrong on that.

VICE CHAIRMAN THOMAS: But that was the dials that he had, in the structure that he was looking at.

MR. BERNANKE: But essentially right.

The example I would give, would have been the silo mentality of the regulators, that I'm looking at this company, I don't care about their counterparties, I don't care about the markets they're involved in. I'm not thinking about -- there's a difference between -- if there's a common risk -- if there's a common exposure across the whole system and that goes bad, that has a much different implication than if it's an uncorrelated risk across the system.

But for an individual regulator looking at one company, they don't distinguish between those two, but it's a critical distinction. That's why you need some kind of interaction among the regulators.

VICE CHAIRMAN THOMAS: Or a bigger, comprehensive, more-umbrella regulatory structure.

MR. BERNANKE: Right -- well, macroprudential.

VICE CHAIRMAN THOMAS: Which one would you prefer?

MR. BERNANKE: I think you've got to be careful not to create a situation where you've got somebody -- something that's so big and broad-picture that it loses the confidence of the individual ability to deal with individual -- because we have a very complex system.

VICE CHAIRMAN THOMAS: Sure.

MR. BERNANKE: So I would prefer having a systemic risk council which is responsible for the overall system and looks for emerging risks and coordinates and shares information, et cetera, et cetera. But underneath that, you've got specialists.

Think of them as divisions of the financial services authority, if you wish, which do look at broad sectors, and then they talk to each other.

VICE CHAIRMAN THOMAS: They talk to each other?

CHAIR ANGELIDES: All right, why don't we take one final question? Because I know the Chairman does have to depart at 2:30.

You would be the final questioner.

COMMISSIONER GRAHAM: Well, I want to come back to my employment question. One of the criticisms of the current banking system in many quarters is that while we have been saving the banks by shoring up their balance sheets, that we haven’t been creating incentives for the banks to return to their traditional levels of lending, particularly the smaller companies which are a large employer.

A: do you think that is a legitimate criticism? And, B, if it is a legitimate criticism, are there any steps that might be taken in a future crisis to calibrate the policies to save the banks, to also include some policies to save customers of the banks and the employees of those customers?

MR. BERNANKE: So at my speech in New York yesterday I talked about your two topics, unemployment and small-business lending, which are both big problems.

COMMISSIONER GRAHAM: Could I get a copy of that?

MR. BERNANKE: Yes, of course, we’ll provide you with one.

So, of course, and again this is where the Fed and the communication has failed, is that the public still thinks that “Wall Street was bailed out. We weren’t bailed out.”

The reason we bailed out Wall Street -- I hate that terminology -- but the reason we did it was to avoid a collapse of the broad system, and so on. So the critical thing -- the first important achievement was to prevent the meltdown of the global financial system, which we did, in the fall and early into this year.

Given that we did that and the financial markets are improving, the credit situation is, broadly speaking, is improving slowly. It’s still tough. It’s better, certainly, for larger firms than it is for smaller firms.

But let me make one observation from my own experience, which is one of the things that my historical studies has helped me with is, recognize the politics is part of the dynamics of a financial crisis. In the 1930s, after the crisis got bad, then they had these Pecora hearings, where they were -- J.P. Morgan got the -- the midget sat on his lap and all kinds of funny things happened. But it’s sort of predictable that there’s going to be a political reaction. There’s been a very seriously political reaction. And Sheila Bair said yesterday that she thought that TARP was a mistake completely because of the bad politics that have come from it.

I don’t think that’s true because the alternative would have been to let the system collapse, which is not what we wanted to do. But it’s true that the politics have been bad.

And the reason why I’m raising this now is that the original concept of the TARP -- not the original-original -- but the one associated with the capital injections -- remember, there was a big program called the CPP, the Capital Purchase Program, the point of which was to put capital into otherwise healthy banks. Not to bail out banks or to save banks, but to add capital to otherwise healthy banks. And something like $200 billion money was put out the door that way. The reason for doing that, besides just generally strengthening the system, was to give banks capital in which to lend.

Unfortunately, the politics has been so poisonous -- you know, both at the congressional level but also at the local level, where people have accused bankers of taking TARP money, of all kinds of horrible things -- that the general response of bankers has been to give the money back as fast as they can; or if they have to keep it for some reason, not to base any lending on it.

So, unfortunately, the second function of the government capital, which was to provide a basis for more lending, has become pretty much impossible because of the political environment.

CHAIR ANGELIDES:  Well, can I just challenge that a little?

MR. BERNANKE:  Yes.

CHAIR ANGELIDES:  On what basis do you make that observation?  As a practitioner of a real estate market, I mean, the liquidity is extraordinarily constrained.  But, I mean, on what basis do you say it's because of the poisonous political environment?

MR. BERNANKE: Oh, that’s not the only reason -- I’m sorry. So -- he’s asking about policy specifically.

So there are a lot of reasons why credit is constrained. Many of them have to do with just the severity of the recession and the fact that the balance sheets have been damaged and credit quality has worsened and credit -- so we’ve done some studies at the Fed of the determinants of the terms and conditions of lending. And what we found is that, even given the depth of this recession, banks have tightened their standards even more than you would expect, given how bad the recession is.

So there’s a lot of things happening on the supply side, including capital. But there are a bunch of things going on. Banks are worried about what’s going to happen to capital requirements in the future.

CHAIR ANGELIDES: Okay.

MR. BERNANKE: They don’t know -- they’re very unsure about the speed of the recovery, and many other things that are affecting that lending. So I do need to say --

CHAIR ANGELIDES: Yes, the only thing -- I'm really focused on our mandate, which is examining the cause to the crisis. I just want to put a little point in, that I'm not really sure that the absence of lending is the result of popular anger over people losing jobs and homes.

MR. BERNANKE: No, no, no. But I think one factor -- one piece of policy was an attempt to try to get banks to lend more by giving them more capital. That part has not worked.

CHAIR ANGELIDES: I don't disagree on that.

MR. BERNANKE: But I will say that there are other things, like the Fed's TALF program -- actually, in my defense, I should have mentioned a lot of the other things we did to protect the asset-backed securities market, the commercial paper market, money market mutual funds, et cetera, et cetera, and our monetary policy.

So there are improvements, and the supervisors are working with the banks to improve that situation. But there’s no magic bullet on that.

And the unique aspect of this crisis, which was the capital injections, did stabilize the system. And now, a great, good sign is that the banks are raising large amounts of private capital and paying back the government capital. That’s a good sign. But it was not a particularly useful thing as far as stimulating small bank lending, small business lending.

CHAIR ANGELIDES: Terrific. Thank you very much.

Just a couple of things to close up here.

If we were to submit some written questions to you, we would hope that you would respond to those.

MR. BERNANKE: We gave you a -- did we give you the name of our contact person?

CHAIR ANGELIDES: Yes, I believe we have --

MR. BERNANKE: William Nelson?

CHAIR ANGELIDES: Yes, William Nelson.

MR. BERNANKE: Bill R. Nelson.

CHAIR ANGELIDES: Okay.

MR. BERNANKE: And we will provide you with whatever you need.

CHAIR ANGELIDES: Okay, terrific.

And then as you indicated when you first came here, at some point I know we'd like to have you back, perhaps both in private as well as public session, as we do our work.

MR. BERNANKE: Okay.

CHAIR ANGELIDES: We'll be mindful of all the duties you have.

VICE CHAIRMAN THOMAS: Do you have your distribution list, whatever speeches you make, and you send out in your normal network, are we on that list so that we can get all your stuff?

COMMISSIONER HENNESSEY: It's on the Web.

MR. BERNANKE: It's all on FederalReserve.gov on the Web. But we will –- what would you like?

CHAIR ANGELIDES: We'll go there.

COMMISSIONER HENNESSEY: It's all there.

CHAIR ANGELIDES: Thank you so much. Thank you so much, Mr. Chairman. We appreciate your time.

MR. BERNANKE: Thank you.

*(End of Closed Session with Mr. Bernanke.)*

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