**Transcript of Research & Statistics Centennial Conference: Role of R&S in Financial Crises and the Fed's Role as Lender of Last Resort**

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MIKE GIBSON. The session title for our next session is "The Role of R&S in Financial Crises and the Fed's Role as Lender of Last Resort." And we have a great panel discussion with some current and former Fed people here up on the podium to help us cover that topic.

So let me introduce myself. I'm Mike Gibson. I'm the director of the Division of Supervision and Regulation here at the Board. And before that, I was in the Division of Research and Statistics for many years, I guess maybe 13 years. And before that, I actually started in the Division of International Finance. So I'm on my third division here at the Fed and, over my career, spanned a bunch of different things, which we'll get into. I'll talk about a little bit of that when we get into the session.

Let me introduce our other panelists. Sitting next to me, Don Kohn from the Brookings Institution. Gosh, are you going to introduce yourself? I didn't have an introduction for you. It's in the book—a lot of important roles here at the Fed, Bank of England, other places. Then, going down, Andreas Lehnert, currently the director of the Division of Financial Stability, but also an alum of the R&S Division. And then at the end, Pat Parkinson, my predecessor as director of the Division of Supervision and Regulation and, before that, a longtime officer in the Division of Research and Statistics and another person who started in the Division of International Finance. So we've got a great, great range of experiences up here, and I know we're all looking forward to talking about a few, I would say, stories about our time in R&S and things related to the topic of the session around financial crises, the Fed's role as lender of last resort, things that we've all worked on to a greater or lesser extent.

So just to let everyone know how the session is going to run, I'm going to give a few of my own opening remarks, and then we'll let each of the other panelists do that as well. We're just going to touch on our time in R&S and various roles we've had over our careers related to the topic of the session. Then we've got some Q&A. I've got some questions that I'm going to pose to the panelists. And then, at the end, we will have time for your questions. So please be thinking about what questions you might like to ask the distinguished panelists. And then lunch is at 12:15, and I commit right now that we will not run over, and we will finish on time so that we have time to get to lunch on time.

So with that, I'll start with my opening remarks, and then we'll turn it over to the rest of the panel as well. So I guess one of the things that I reflected on when I was thinking about the topic of the session and the role of R&S in fighting financial crises—and, of course, one of the Fed's important functions is to handle crises that crop up both on the central bank side of the Fed as well as the bank supervision and the other roles of the Fed. One of the things that the country looks to the Fed is to be that crisis firefighter. And I would say one of the things in my experience when I was in R&S related to that is that financial crises really bring out, in some ways, the best of the Fed and, in particular, the collaboration that happens across the Fed.

So everyone has their own individual job and their own individual responsibilities. But in times of financial crisis, that's really where the collaboration comes to the fore. So people in research, working with people in supervision, working with now we have the Division of Financial Stability, and the collaboration that we all have built up, and we work together. That's one of the rewarding parts of that type of work, but it's also one of the things that makes that sort of work effective, in my experience. We have that good collaborative spirit and culture here at the Fed—not just from Research and Statistics, but working with the other divisions.

Within R&S, as I'm sure you all know very well, there's a lot of different functions. There's the financial sections, there's the nonfinancial sections. And one of the things that I recall from my time in R&S is that—of course, there's a lot of focus on the FOMC. Of course, there's a lot of focus on monetary policy, and that cycle plays a big role in the work here at the Fed. But there's a lot of things that R&S does beyond just support the FOMC. And when we get into talking about fighting financial crises, that's when it really involves the whole of R&S and, really, the whole of the Fed in doing that. I certainly recall everyone pitching in in the 2008 financial crisis. It seems like the Fed was responding to one event after another, creating new programs, creating new lending facilities, doing that stress test that had never been done before, doing that TALF program.

And one of the things that my work in R&S leading up to the 2008 crisis, working closely with Pat and also with Don—we had done a lot of collaborative projects both across the Fed and with other agencies and also internationally on financial risks, things that are now called "financial stability" but didn't really have that much of a focus back then. And my experience working in R&S was that those sorts of collaborative projects were really good experience and really good preparation for when we did have a financial crisis. We had built some experience, we had built some relationships through the work that people in R&S had done with other agencies, with people at Treasury, with people at our international counterparts. So the work that we're doing in quote–unquote "normal times" did turn out to be good preparation for the work that we had to do during the crisis. And, again, that collaboration that I talked about was really valuable.

Another thing I thought about related to the topic of this session is that one of the things I feel like I was able to do and people from R&S generally are able to do in these situations is

bring an economist perspective and also an economic research perspective to these financial crises and the other topics that we're talking about, because a lot of times it's a very multidisciplinary environment. And the other parts of the Fed, like Supervision and Regulation, where I work now—we do have some economists that work in Supervision and Regulation, but certainly R&S and the other economics divisions are very economist centric, and that is a strength that we then bring to some of these other projects and, in particular, in a crisis when it's sort of a firefighting mode. Sometimes you're just thrown into it, and having the Fed training and the Fed economist experience, at least for me, I found to be helpful and one place where I could add some value.

And I guess the last thing I will say before I turn it over to the panelists to give their introductory remarks is that, as I said at the beginning, I'm on my third division at the Fed, and I feel like being open to changing jobs and even changing divisions has been something that's been good for me personally. I've enjoyed getting to do different things. It's given me good experiences and diverse experiences that I've been able to bring to new roles. And I feel like as we grow our future leaders here at the Fed, it's a good thing to keep in mind, to give people those broad experiences, give people exposure to different types of projects. That's been helpful for me. And I feel like as we're building our skills and our leadership to handle whatever comes at the Fed in the future, having that sort of a training ground where people can learn and then deploy what they learn on some pretty interesting and important topics, I think that's valuable. It's been valuable for me personally. I think it can be valuable for us as an organization. So it's also something I like to talk about.

Okay. So that's my opening remarks, and we'll just go down the line, and I'll let Don Kohn go next.

DON KOHN. Thanks, Mike, and I appreciate the opportunity to be here and see so many old friends. Actually, I want to pick up on something you said about collaboration and how important it was. Boy, did that come home to me in the 2007, '08, '09 thing and, in particular, the collaboration between Sup & Reg, R&S, MA, and the Board.

So I was Vice Chair at the time, and I remember just one story, just doing the stress tests. We certainly worked with R&S and Dave Reifschneider on the scenario and how to figure out what the 5 percent or whatever tail of the distribution was we were going to stress things to. And then we put R&S and Sup & Reg in charge of doing it, right? And I remember being encouraged every night. Nellie Liang and Cory Stefansson would come down to my office, joined at the hips, with whatever the problem was of that day. But I remember thinking, if these people can work together so closely and bring the strengths of those two divisions to bear on this thing, we just might have a chance of making this darn thing work.

So I think that collaboration was absolutely essential to the success we had with the stress test, but also dealing with the whole crisis. We couldn't have made decisions about discount window lending without the Supervision and Regulation people telling us what they knew about these banks—was there a business plan, wasn't there? So it really strengthened the argument for keeping supervision inside the Federal Reserve just for crisis-management purposes.

So I wasn't going to start that way. In my remarks, I want to say a few things. One is, as I started thinking about this, I spent a lot of my career in R&S and MA, even before getting to the Board, dealing with financial crises. And, in fact, on reflection, I came in the summer of 1975. One of my first jobs in the fall of 1975 was to talk to the New York Fed and find out what rates the certificates of deposit, the negotiable CDs, of the New York banks were trading at.

So for the first time in 1975, when New York City was going under, the rates of the big New York City banks had all been the same, and then they started separating. And that separation of what banks were paying for what, was an important input into the crisis management. I talked to the New York Fed every afternoon. I took the piece of paper, I think, to Jim Kichline—who wasn't yet division director, I guess Lyle was division director, but he was interacting with Arthur Burns—down to Burns's office. So my introduction, I think, to the Division of Research and Statistics was helping people get information that helped decisionmakers deal with this particular crisis.

And then, in 1979, I started working on the Chrysler thing—not a financial crisis, but it had some of the same types of approaches and learning that you do in dealing with these things. Hunt brothers silver in 1980 and working at that time with, I think, Fred Struble, who had moved over to Supervision and Regulation, and trying to figure out when Bache was going to collapse and what other broker-dealers would collapse if the Hunt brothers couldn't pay their debt. At that time, we had the credit controls, and so the banks had to go to Volcker to get permission to make loans so the Hunt brothers could pay off some of the margin calls they were getting and we didn't collapse a bunch of futures exchanges along with a bunch of broker-dealers.

In the early 1980s, my memory is that Jerry Corrigan was the assistant to Paul Volcker, and about every week I'd get a call from Jerry. "This market is broken. This is horrible. Find out what's going on, Don. This time this thing's really going to blow up." So he was wrong about 90 percent of the time, but 10 percent of the time it really did blow up. Continental Illinois in 1984. So Penn Square Bank, Continental Illinois, the stock market crash in '87. Greenspan's response to that was to recognize that there would be a huge demand for liquidity, the Federal Reserve had to promise to supply liquidity, and then, in the following months, we really

monitored the demand for money and the demand for reserves and made sure that we were meeting that demand. The thrift industry meltdown through the ’80s and into the early ’90s—constant source of problems. LTCM in 1999. There were a lot of issues in the international sphere—Latin American debt crises, Asia, Russia—that Ted was dealing with, fortunately, but sometimes spilled back to the U.S. For example, the Russian default spilled back into LTCM. And running the discount window, really, from the 1980s. I think when I started, the discount window was in Supervision and Regulation with a tie to Axilrod’s office. But at some point, it came over to Axilrod, and then Monetary Affairs started running that.

So a lot of these early problems related to the distortions from the run-up of inflation, people expecting it to continue—the Hunt brothers betting on it, for example—and then bringing it down, and particularly as that interacted with Regulation Q deposit ceilings and the gradual relaxation of those ceilings. There was a bank, First Pennsylvania Bank, but that was in the late ’70s, early ’80s. They collapsed. So the mistake they made was to hire a guy who had been the head of research at the Philadelphia Fed—Bunting, I think his name was—and he knew how he was going to game the system, and he collapsed the bank. [Laughter] That’s what happens when you put economists in charge of banks. [Break in audio] act with regulation.

And I’ve, like Mike, reflected a little bit on what economists bring to crisis management and the lender of last resort. I think one thing we brought as R&S and MA economists is working at the intersection of finance and the real economy. So a different perspective, right? And seeing the feedback between what was happening in the real economy and what was happening in the finance markets and then how the finance markets would feed back on the real economy. I mean, the macrofinancial side of R&S was mostly capital markets, and that’s the mortgage stuff—I don’t know what these sections are called anymore, housing, mortgage, and

consumer finance, whatever—were about helping the Stacey Tevlins of the day put the forecast together and seeing the relationship of finance and the real economy. And I think we lost some of that in the Great Moderation. So we went for too long without crises. All our models focused on interest rates, and that was the transmission to the economy. We weren't keeping track of quantities anymore, and we kind of thought, "Well, markets are more complete. The old-fashioned analysis of financial flows are unnecessary." And I think we got a lesson in all that around 2007, 2008.

I think economists bring a sense of how markets work to crisis management, thinking about movements along a demand or supply curve or shifts of a demand or supply curve [break in audio] about the regulation piece of the response to crises. What are the externalities that regulation is dealing with? These sorts of concepts. The concept of general equilibrium, the idea that you push on [break in audio] place. Economists have this as part of their training, and it's really important. And, finally, that incentives matter, so people will look for ways to maximize rents and avoid regulation. And as you're designing your response to a crisis, either in the crisis or the regulatory response afterwards, you have to think very carefully about the incentives you're giving people and the effects of that.

I think what's lacking often and gets remedied in a crisis may be a sense of how things work in the real world, the nitty-gritty institutional details. What are the exact terms of the contracts? What is a material adverse change clause? When can that be triggered? When can't it be triggered? How are these markets related to each other? What are the channels of contagion? How do participants see the risks and respond? How does this contribute to runs and fire sales? So all the frictions, the nitty-gritty details and the frictions, all come out in the crises. And that's what we often don't pay enough attention to, I think, on a day-to-day basis.

Designing those 13(3) facilities in 2008, 2009, you guys needed to have very detailed knowledge of how securitization markets work, how people would view a certain amount of leverage, etc.

I'm going to end with Chrysler because, in Paul Volcker's oral history, he says about Chrysler—I don't have the exact words here, but this is approximately correct—he says, "I chose Don Kohn to work on Chrysler." I sort of thought Jim Kichline and Lyle Gramley had chosen me, but that's all right. I guess Lyle was in the council, so Jim Kichline chose me, but Paul took the credit. And then it says, "He got an extracurricular education, square parentheses, 'laughter'." [Laughter] So I'm still trying to figure out what "laughter" meant in Volcker's thing, but I did get an extracurricular education about how markets work, how the auto industry was structured, how auto companies intersected with their suppliers, with local economies, with the unions. I watched Paul Volcker bargain with the UAW to get wages down. So I think that's what happens in a crisis. I think we economists get a little bit of an extracurricular education about how the world really works. And then, hopefully, we bring that back to our research when the crisis is over. Thank you.

ANDREAS LEHNERT. That's a tough act to follow, Don. So you mentioned Jerry Corrigan, and maybe I'll start with Jerry Corrigan. So I joined R&S in 1998, when it was a stripling of 75 years of age. I was working for Wayne Passmore in a newly created section called Financial Institutions—what we would now call "nonbank financial institutions." It was very much ahead of its time. We put a paper on the program at a conference at the San Francisco Fed. So in the fall of 1998, Wayne, Ed Ettin, and I flew to San Francisco to participate in this conference. And the keynote speaker was Jerry Corrigan. So this was in the midst of the LTCM difficulties. And Corrigan, I think, threw away his prepared remarks and instead spoke to us on the topic of the difference between "moral hazard" and "hazard hazard." [Laughter] He's like,

"'You economists always want to talk about moral hazard. I'm telling you, there's hazard hazard." So, of course, LTCM turned out to be kind of a precursor of things to come, but at the time it felt very unusual, kind of a set of responses to all of that. It felt a little disconnected, it all happened sort of quickly. And in the background, if you're a very junior staff economist, it's easy to not focus on it. I was working, back in those days, on the fourth floor of the Eccles Building where the Financial Institutions Section was, which became the Household and Real Estate Finance Section, which has since undergone further mitosis and evolution, I understand, into the Real Estate Finance and Consumer Finance sections. And we were working on a broad set of consumer and household finance issues and commercial real estate. All fairly quiet for a long time.

I went on sabbatical in 2006. I spent it at the Urban Institute. I came back in the fall of 2006, really just as the Great Recession and the financial crisis and all of that was beginning. The early kind of shocks were very much—in the early days of all of that, we thought it had something to do with subprime mortgages. We were doing a lot of thinking about subprime mortgages at the time. And then, in December of 2006, a subprime mortgage lender, a nonbank called New Century, failed as kind of a harbinger of things to come. As the sort of financial markets started to get stressed out, the terms and conditions to get a subprime loan started to get worse and worse. And we were hearing about subprime borrowers needing to roll over, refinance their loans. They were finding it harder to do so. And then the other kind of heterodox mortgages out there—alt-A's, jumbos—they also started having to pay up in order to get a mortgage. And it started to feel like something broader was happening.

The way we were organized in those days, there was sort of one person that covered credit cards, student loans, auto loans—so Karen Pence, Shane Sherlund, and me. And I would

just sort of walk down the hallway, and it's almost like you could hear the phones ringing in everybody's office as each one of these markets became very stressed out and collapsed. And so the auto market—suddenly it was hard to get a car. And then the credit card companies started firing off distress flares. And then, in 2007, the student loan market came under severe pressure. It's sort of this moment where you could tell kind of a macroeconomic story. Maybe there's weakness in the household sector that wasn't appreciated, and people are having to pull back. But now, student loans are government guaranteed. Like, what is the problem? What is happening here?

And it was around that time that I got to spend my first—I'd spent many weekends working at the Fed, but it was my first time actually working with colleagues on something that was going on. I got called down to Brian Madigan's office on a Saturday or Sunday. Everybody's in shorts. Cory Stefansson is there, lots of people I didn't recognize. Who's this guy Scott Alvarez, and why does he think he's so important? [Laughter] And we had a conference call with the regulator—I'll go easy on the details, I'm sure you can imagine—a regulator of a company which is now defunct, basically asking for emergency liquidity support. And I had no idea what really was going on, but they just kept asking me, "This entity has an enormous portfolio of subprime mortgages that we think are great. It also has a bunch of subprime mortgage-backed securities. We think those are wonderful. And it also holds a bunch of these super senior collateralized debt obligations, which are triple-A. So how much do you think you'd be willing to lend against those?" And nothing in my career to that point had prepared me to answer those sorts of questions. I don't remember exactly what I said, but I think it was something along the lines of, "I don't know, not much. Let me get back to you." [Laughter]

But that was really the beginning of kind of the more active stage of the financial crisis, really, where this wasn't going to be contained in the U.S. household sector, that a bunch of financial institutions were going to be involved, a bunch of markets were going to collapse. And those of us who worked on these sorts of issues were going to have increasing demands on our time.

So in R&S, our posture was very much, we are absolutely going to sort of work all of this—there's simply no question that this is the most important issue of the day. And we're going to work with BS&R, as it was known then; the Legal Division; MA, of course—everybody. We're very much a kind of service. We're economists, we understand this market, we've written some papers on it, we publish some statistics on this. But really, as Don said, as all of this went on, the set of issues that we were being forced to address became more and more acute, and many of these details that really weren't in our papers up until that point started to become more and more salient.

So in 2008 there were, I would say, already by late 2007 to 2008, there were a set of questions around, what are we going to do with the underlying borrowers here? They're going to need help. Mortgage markets for kind of nonconforming mortgages have closed down. The Administration had something that was known as the "teaser freezer" plan at the time, and so we had to sort of evaluate whether we thought this was a good idea or not. But at a certain point, like when the TARP legislation passed and there was suddenly this pot of fiscal money on the table, some of it was going to be spent to support housing and mortgage borrowers.

At that point, David Wilcox called me in and said, "You now are the equity owner of the plan to buy junior liens, HELOCs, closed and second. Go find whoever the guy is at Treasury who's working on this, Seth Wheeler, and go figure out how to do this." So that was very much

like, suddenly we're sort of grappling with all these very complicated issues of how you stitch together securities that are out in the market, what prices you pay for them. It was really something about seeing a financial system under stress that really allows you to understand exactly how it works as a practical matter.

Eventually, this morphed into a series of 13(3) facilities, many of which touched on consumer and mortgage markets in different ways, most notably TALF, and the incredible work that Karen Pence and colleagues did on that. And then, ultimately, the stress test, which was truly a surreal experience, having come from like a very staid, quiet kind of academic background to just kind of wander into the office one day and find this stack of things that looked like diplomas, but they were my official commissions to examine 19 large bank holding companies, and we were sort of off to the races.

Ultimately, a lot of that turned on how big the credit losses in the mortgage portfolio would be under the Dave Reifschneider and Nellie Liang–developed stress scenario. Answering that question was sort of—in some sense, you could work on a problem like that for your whole life and never be completely satisfied that you'd gotten the answer right. From another perspective, you've got until 6:00 tonight, and then you've got to explain what the answer is.

Just a couple of points to pick up from what Mike said. On the collaboration front, this really felt like all the walls between kind of different bureaucratic organizations at the Fed just completely dissolved—Reserve Banks, BS&R, Legal were all sort of working together in a very, very collaborative way. It's something we've really tried to keep going with the Office of Financial Stability and now the Division of Financial Stability. It was very much in our mandate.

Research—throughout all of this, we learned a ton, and I think we were able to write a bunch of papers coming out of all of this experience that were very, very good. Chris Mayer, who was at the time at Columbia, came down to visit us in 2007 on a sabbatical. I said, "The one thing is, you've got to write a paper with people here." And so that was the genesis of Chris's paper with Karen Pence and Shane Sherlund—really, one of the first really good papers on subprime mortgages. No doubt we'll have more to talk about on those fronts as well. With that, I'll pass it over to Pat.

PAT PARKINSON. I'll pick up, I think, on a few of the things that Mike and Don, in particular, said. I think I had a very unusual career for an economist at the Fed. First, unusual that I moved around a whole lot. I started out in the IF Division, where I think a very big influence on me is, I started working for a colorful character named Alan Frankel, who Mike actually also worked for, as did Lou Alexander and Jeff Marquardt over the years. And I think Alan was always very well known for knowing the details of how the world works. Don mentioned that in a crisis you can't have sort of a theoretical understanding of how things work, but you really need to know how the markets and institutions work. And Alan was always noted for that. And, really, the way he developed that knowledge was not by reading it in books, because most of the things that he was dealing with hadn't been written about yet, but he would get on a plane and go talk to bankers in New York or Chicago or San Francisco and very much encouraged me to follow him in that path.

So I would go out and talk to the bankers and write up what I learned. He always cautioned me that when talking to the bankers and writing it up, as he put it with his Bronx accent, "You got to filter," by which he meant you had to critically evaluate what you're hearing

from these characters and take into account that they would often be "talking their book," to use another of his expressions. But that was a very valuable way to learn the details.

Also, I think most of my career I dealt not with any of the top 10 things people would list as the things that the R&S Division actually works on, but on derivatives and clearing and settlement arrangements for financial instruments. And how did I get involved in that? Well, the first thing of any consequence I did at the Board while I was in the international division was, I was asked to evaluate these new proposals to trade contracts called Eurodollar futures. And I had been monitoring the Eurodollar markets for the IF Division and had written my thesis on Treasury bill futures, so I was the natural candidate for that. So I read the various proposals, prepared a memo for the Board summarizing the proposals. And back then, before the CFTC, which regulates the futures markets, could list a futures contract, it was required to consult with the Board and ask their advice. So I read the proposals, summarized them, and wrote a letter that said, basically, this would be a great idea to try these things.

Before going to the Board, I took this to, I think it was called, the "supervision committee"—whatever they called it back then; the name's changed many times over the years—one of whose members was Lyle Gramley, the former R&S director. And Gramley said he didn't disagree with my analysis and he was fine with me taking this to the Board, but on the day of the Board meeting, I should wear a red bandanna because Volcker was going to slit my throat. [Laughter] And the reason for that was, he absolutely hated futures, thought that they did nothing, they were just a negative influence because of, I think, his experience with the Hunt brothers silver crisis that Don had talked about.

But I persevered. No blood was shed, although the letter was rewritten to indicate that it would be a bad idea to allow the listing of these contracts, which later became the largest futures

markets in the world, at least for a time, because the CFTC sensibly disregarded the Board's advice.

How did I get involved with derivatives? Well, the first crisis, I think, where I had much direct experience—not so much with the crisis fighting as the crisis response—was the '87 stock market crash. And after the '87 stock market crash, the Reagan Administration created this thing called the President's Working Group on Financial Markets, which was active from time to time through at least 2009 and I think still may exist, although it's been eclipsed by the FSOC, for better or worse. It was just bringing together the Treasury, Fed, CFTC, and SEC, with occasional participation by the other banking regulators.

And when the PWG looked at the stock market crash, one of the biggest concerns from a systemic risk perspective related to weaknesses in the clearing and settlement arrangements for stock index futures and options. In fact, in the wake of the stock market crash, there was an effort, I think, by the New York financial center to blame all these problems on things going on in Chicago. And, in fact, there was a report, the Brady Commission report, that said just that. And the PWG was created to debunk the Brady Commission report, which became laden with irony when a couple of years later Dick Brady became the chairman of the PWG. But in any event, that got me involved in looking at these clearing and settlement arrangements, and that became something of a career—not just for the stock index futures, but for derivatives and securities generally.

Later, I actually worked for, I think, 15 years heading work by what's now called the CPMI—but used to be called the Committee on Payment and Settlement Systems—on first understanding risks in settlement arrangements, spurred in large measure by Jerry Corrigan, who was, I think, really the first person in the Federal Reserve System—way back in 1988, gave a

famous speech in Williamsburg where he really laid out, I think at a very high level, an understanding of what systemic risk in payment and settlement systems was, how it arose, and how it might be mitigated.

But we spent another 15 years elaborating on that and even producing the first international standards for securities and derivatives settlement systems. We're talking today mainly about crisis response or, narrowly I would think, firefighting. I was much more involved always in figuring out after the crisis occurred and after it had been managed what regulatory changes had to take place to reduce the likelihood of future crises. I think, looking back on it, we were much better at the firefighting aspects than at the mitigating the risk of future crises. Obviously, they continue to occur with no evidence of a decrease in severity or frequency.

So at that point, how did I get involved in the crisis response in 2008? And the answer is, the other thing I worked on was 9/11 and on one particular aspect, which was that after the physical destruction on Wall Street, the Bank of New York took almost a week to get back up in operation. And the Bank of New York was and still is basically the back office for Wall Street, so it brought Wall Street to a halt. In particular, it disrupted the so-called triparty repo markets, which were the principal mechanisms then and now by which Wall Street finances itself. So I got involved in a long and not terribly successful project to strengthen the underpinnings of the triparty repo market.

But the important element of that was, I and a bunch of mainly people at the New York Fed learned a heck of a lot about how that actually worked. So when you get to 2008 and the Bear Stearns crisis, where Bear lost funding in the triparty market, we were able to draw on that knowledge and on our contacts with people in the triparty market and the clearing banks to quickly stand up the Primary Dealer Credit Facility. And then, over the course of 2008, we

expanded that and then expanded it very broadly on Lehman weekend because of the fear that basically entire securities markets were going to melt down. And then when I came back—actually, I think Governor Warsh and I were the two people from the Board that were at the New York Fed on Lehman weekend—when I came back, I think it was Don that got me involved in real firefighting. I think at that point, the Monetary Affairs Division, which really was the one that did most of the firefighting along with the New York Fed, was pretty much tapped out. Their bandwidth had been exhausted. And we were having this run on money market mutual funds, and it was time to develop a program to stem the run on money market mutual funds.

In fact, I think it was Mark Van Der Weide and I, just the two of us, came to Don's office, and Don explained to us the Governors had been thinking about this and had some plans. And it's always a mistake to let the Governors discuss things without the staff present. [Laughter] So Mark and I had the sad task of informing them none of those things would work. And I think Don got a little bit grouchy and said, "Well, okay, right, but I don't want to see you again until you come back with a plan that will work." So we went back to our offices and came up with this incredible sort of Rube Goldberg thing. Because the money funds, interestingly, either were unwilling or unable, had no legal authority, to borrow from the Fed—after all, you're not supposed to be leveraged, including any leverage coming from the Fed—we had to figure out a way to get them money that didn't involve us directly lending to them. So we came up with this scheme to lend to the banks, mainly the custody banks, who in turn would buy the assets, the asset-backed commercial paper, from the money funds, and that would meet their liquidity needs. In retrospect, ABCP was just garbage, basically. So we had collateral, but it was not collateral any sensible person would have wanted, but we had met the sort of technical legal requirements for us to be able to launch this 13(3) program.

DON KOHN. Statute of limitations. [Laughter]

PAT PARKINSON. We'd have to ask—Mark might disagree with me. I don't know. He might not. But in any event, that got me involved in the liquidity facility and, really, after that, I think I was involved in the early part of the TALF. And while Andreas and others were being stressed by the stress test, I was being stressed by going to work for Tim Geithner and Larry Summers to develop the regulatory response to the great financial crisis. And I'm sure what you were doing was stressful, but working for Tim, more for Larry Summers, was a new level of stress for me, anyway.

MIKE GIBSON. Okay. Well, thanks, everyone. That was very entertaining and very informative. I have a few questions to pose to the panel to continue the discussion, and then in a few minutes we'll take questions from the audience as well.

So we've talked already about a number of the financial stress episodes that have happened that the Fed, R&S, and some of us have participated in. And I guess one question to dig into that a little bit more and coming back to the focus of the conference, which is the R&S Division, is that different financial stress events and different crises bring different parts of the Fed and different parts of R&S into the picture more. So, for instance, Andreas talked about how in the 2008 crisis, the financial sections—in particular, the ones that were experts on mortgages—got deeply pulled into the crisis response. During the COVID pandemic, the nonfinancial side of R&S was critical to some of the work on the frontlines there reflecting all the impacts on the macroeconomy.

So would anyone like to say a little bit more about your perspective on the different parts of R&S—more broadly, how economists can add value at times of financial stress? Where do you see the biggest value-added, either from R&S or economic research in general? Don already

talked a little bit about this—not just financial crises, but broader financial stability type of work. Andreas, I see you unmuted your microphone, so you're welcome to go first.

ANDREAS LEHNERT. It's interesting that the 2020 experience started very much kind of in the real side of the economy in a really unprecedented way. And I'd like to highlight, in particular, this great memo, which is now a FEDS working paper and has gone on to have, I think, a wider life—and it's great to be able to talk about it out in public—that Ryan Decker, Robby Kurtzman, Byron Lutz, and Chris Nekarda did. They called the paper "Across the Universe." The memo had a more boring sort of subject line than that. But, essentially, we had this question—we have to make sure that every employer out there has access to some form of backstop credit so that they're not going to close and destroy the kind of organizational capital that's associated with them purely because the financial system is having all of these difficulties. But we'd never really sort of sat down and thought about, where are all the jobs, and who lends to those people with those jobs? So that's what the paper, the memo, was about. And this thing really was the Rosetta stone of the second phase of the pandemic response behind the CARES Act and a lot of the Fed 13(3) facilities that got set up at the Treasury back then. It's really just a very classic kind of R&S applied economic analysis—very sensible, bringing excellent, high-quality data work to it, and then directly informative of the policy work that was sort of so urgent at the time.

DON KOHN. I can't really comment on R&S, pieces of R&S and recent crises, but I would like to come a little bit to the premise of your question. So I think there is an inherent pro-cyclicality in the financial system. People get confident in good times—the profits are rolling, we don't really need to hold all this capital, those assets we're holding don't have much risk, etc. And then in bad times, they overshoot on the other side.

And I think the pro-cyclicality of the financial system is what macroprudential policy is supposed to counter. And I think we need to think more about that. The Bank of England, when I was on the Financial Policy Committee there, we had a countercyclical capital buffer—I'm lobbying Mike now [laughter]—a countercyclical capital buffer that went up in good times and was released several times in bad times, in COVID but also Brexit times, that was supposed to counter the natural pro-cyclicality, at least of the banking system. And I continue to be disappointed that the Fed hasn't adopted a more active use of the countercyclical capital buffer. We set it at 2 in normal times. We started at 1, and then the staff said, "You start at 1, you're never going to have—think back to 2005, 2007—you would never build it up high enough to have something to release in bad times."

The harder pro-cyclicality issue is the nonfinancial, the market-based finance. And it's so hard to deal with because it's really about activities and markets—it's not about entities. It's about CFTC and SEC never agreeing on anything and getting coordination. But I really think research into this inherent pro-cyclicality there's been a lot of, but then trying to come up with ideas about how to counter it would be a productive way to go.

PAT PARKINSON. Well, I'm not going to give anybody advice on what they should do research on. One thing that I think has been a silver lining in all these crises and the fact that they seem to be occurring with greater frequency is, it is bringing the people across the Board together. And I'm glad to hear that. I think both Andreas and Mike are saying that's true not only during the crisis, but it persists afterward, because I think it was a weakness of the Board when I first came here, the difficulties working across the silos, the lack of movement of people across the silos. I think someone probably has stats on this, but my impression was, early days, people would get hired, say, by R&S, by a certain section, and they'd spend their entire career in

that section rather than moving much around, much less across divisions at the Board. And the weakening of those silos is a good thing because it's not just during crises, but it's in the policymaking process, where collaboration is needed, and the more the better.

MIKE GIBSON. Okay, let me ask a question that's a little bit of a different sort of question than what we've been talking about, because it's sort of more career focused. Well, so one feature of all of us on the panel is that we all started our career as [break in audio] leadership positions at the Fed that have a much broader focus than just doing economic research. So my question is, how did your training and early career as research economists prepare you as you took on leadership roles?

DON KOHN. I would say not very well. [Laughter] For management and leadership, I mean, yeah, that's my answer. What do you guys think?

ANDREAS LEHNERT. I'm not sure. My graduate committee had a lot of strengths, certainly many Nobel Prizes among them. You know, I'm not sure that I would trust them to lead, like, a Cub Scout troop out of a ditch. [Laughter] The Fed has an incredible culture of leadership training. I learned by the example set by Pat, Don, Mike—you and others—more than the training that I got as an economist. You could almost say that the Fed has figured out how to convert someone who has a Ph.D. in economics—which, I think under many circumstances, would absolutely disqualify you for any form of leadership—into something that you might trust at least to get a Cub Scout troop out of a ditch. [Laughter]

PAT PARKINSON. I guess I'd first reiterate the distinction between "management" and "leadership." I don't think it helped me at all on management, and Mike's probably still sweeping up the broken glass from my two years as director of BS&R when it comes to management. In terms of leadership, I think it was helpful that a lot of the issues I worked on

early in my career required me to work with people in other divisions, including Legal and BS&R, with the New York Fed, and even with, for a real challenge, the CFTC and the SEC, where it's not an economist-dominated culture but a lawyer-dominated culture. But I think that was useful.

And when it came time, say, many of these clean-up exercises—I'm thinking mainly after Bear's failure, I think I got tasked with writing emails afterward, asking people across a whole bunch of divisions at the Board to do a bunch of different things—I was used to being able to get things done where I had no ability to command and control. Those people didn't work for me. But I guess I had the Chairman and Tim Geithner standing behind me, so when I told them that here's the plan and here's what we need you to do, it worked. But I think that was valuable. Obviously, not everyone can have those experiences early in their career, but to the extent you do have an opportunity to get involved with either the FSOC or interagency banking regulatory work or international work—I think all of us have been involved, to a greater or lesser degree, in international work—that's helpful in terms of training you to work with people and to lead people who don't report to you. You can't give them a bad performance rating if they blow you off.

MIKE GIBSON. Okay. So we've talked about, the frequency and severity of financial crises don't seem to be changing much over time. But one thing that has changed here at the Fed is that our organizational structure has changed. And we can even look back to the creation of the Division of Monetary Affairs in 1987 and the Division of Financial Stability in 2010 as examples.

So how do you think about the role of R&S relating to Monetary Affairs, Financial Stability? We've also mentioned Supervision and Regulation, International Finance. How have

you managed the relations between the different parts of the Fed and thinking about lessons for the future? And we've already talked about this a little bit, but what are the challenges, what are the successes that we should keep in mind as we continue moving forward? All of us in this room are still working in the Fed and need to ensure that collaboration works going forward.

DON KOHN. From my Monetary Affairs perspective, I never had any trouble working with R&S. I thought we had a great collaboration on Bluebook—I guess it's Tealbook part something or other now—but Bluebook stuff. R&S was running equations and models and telling me where I was wrong, which was frequent, and that was great. There might have been a couple of months in which R&S and MA were feeling around the edges about where one left off and the other began, but after the first few months, I thought we had a very good collaboration. I didn't see that as a problem. And I think what we're hearing from the panel is that particularly when things go bad, everybody piles in. This is an organization of people who are drawn to it because they're drawn to public policy, the public interest. That's why we went into economics. We saw this was a discipline that had an empirical aspect, it had a theoretical aspect, and you could put it all together. And if you did it right, hopefully you could make people's lives better. That's why we're here. And when these crises hit, everybody piles in on that.

You had a question about lessons learned. I think one aspect that we don't talk about—and Andreas hit it a little bit—is the information flows. So one is the information coming in, particularly in a crisis where everyone you talk to is arguing their book—they have a point of view, they want the Fed to do something, they want you to take a view of their organization, help them out, lend them whatever. But filtering that information, trying to figure out what's really going on and what the dynamics are, is really important. And working with S&R, as I said, in the crisis was absolutely essential about that. Bank ABC comes in and says, "This is my

position," and there was a supervisor you could talk to and say, "Well, this is what really is going on at Bank ABC." When you're making a discount window loan, you need to think about that. So that was really, really helpful. Everybody's pitching it. And so the information filtering—the information coming in, but also what information goes out and how to explain things.

When I think about where I could have done a better job in a couple of cases, one was LTCM. So things were going on. The New York Fed was doing stuff. I was trying to keep Greenspan apprised of what was going on, but he was going to testify on Monday on something else, and he was trying to write that testimony. And I don't think I ever got through to him exactly what was going on. And then the other part of that was the rest of the Board. So they read about LTCM in the newspapers. That was not what the head of Monetary Affairs should have allowed to happen. [Laughter] So I think communicating with the other policymakers.

And then I want to make a broader communication point, and it's about lender of last resort and what's a bailout and what isn't a bailout. And another regret I have is that I didn't try harder—I probably wouldn't have had any success—to explain how what we did with our 13(3) facilities was a natural extension of why the Congress created the Federal Reserve to fight these crises. It wasn't some unusual bailout thing. You made us in order to liquefy illiquid assets and to forestall or at least limit the run–fire sale dynamics. The message of the discount window is an essential piece, is the most important macroprudential tool the Federal Reserve has maybe—I mean, open market operations, too, obviously—and it's not utilized enough. There's a stigma to it. The public doesn't understand it. I feel like we could have and should still do a better job of explaining what our role is in crises.

MIKE GIBSON. Okay. Thanks, Don. Does anyone else want to come in?

PAT PARKINSON. I'd just like to reinforce that. I think it's not only our 13(3) facilities, I think we need to do a better job of explaining why we need standing facilities, including the discount window. There are people in Congress and elsewhere that think discount window loans are bailouts, and the discount window is not as effective as it might be, in part because of the stigma that that creates. Also, I think because the Fed over its history has had a certain ambivalence to whether it really believes the discount window is something that should be actively used. And it gets to the point where we found that certain very large banks—Silicon Valley and Signature really weren't prepared to borrow at the discount window. And I think that's, obviously, something that's got to change.

By the same token, the Fed created a standing repo facility, but it's a very narrow facility that I don't think really will meet the objectives of the people outside the Fed, at least, that have been arguing for a broad standing repo facility. And, again, I think the message needs to get through that this is what a central bank exists for. And if these facilities aren't effective, you're going to have more severe disruptions. And, in fact, you may have a need for the Fed to undertake even more intrusive interventions—I'm thinking of purchases of government securities rather than lending against government securities collateral. So that's very definitely something I think more work needs be done on.

ANDREAS LEHNERT. Okay, so that was very interesting, those two interventions. I'm going to be much more focused on being just a Fed bureaucrat for a second. Pat said that when he was an economist in R&S, the relationship with BS&R was not fantastic. I think that that sort of chimes with my experience. This was in the run-up to the 2007–09 crisis. I think, in 2010, when we sat down and said, "Okay, let's take the best parts of what we've just been through in terms of the collaboration and let's also think about how we might address some of the lack of

collaboration that existed before then," we had a few sort of design principles. The Office of Financial Stability, as it was then, was sort of deliberately under resourced so that we would never be a completely separate silo. We'd always had to rely on rotators to come in and work on stuff on projects for the group. Everybody works on something that touches S&R, at least, as well as many other divisions. You need a kind of cultural exchange program, and people need to go spend time with folks that have a very, very different mandate and kind of style of working.

At the very beginning, when there were just five of us, one of them was a chief of staff, which was an officer-level position—it's something that we've maintained and continued—whose whole job is to inform people, to let people know what's going on, to coordinate projects, and to do so at kind of a senior level.

Kind of a final point. I think in part because we are sort of deliberately under resourced and I think in part just because that's the nature of the world that we live in now, we do a lot of work with the Reserve Banks. The Reserve Banks are like a real contributor and consumer of the financial stability process at work. And there's just a ton of insight and expertise out among the Reserve Banks—the kind of hybrid working environment that we have now makes collaboration much easier. I think that's a real success story.

MIKE GIBSON. Okay, thanks. We have time for questions from the audience. So we've got folks with microphones. Just raise your hand. Ted, you wanna go first?

TED TRUMAN. Ted Truman. I apologize. As an interloper, I am going to comment—you had an offer to spend some time in IF, and then you would have had three divisions you could've been an alumnus of.

So you touched on some of this, and I have sort of two related questions in the crisis-management stuff. And one is the challenge of recognizing a crisis in advance. My guess is that

we never did very well on that stuff, but maybe things have improved. [Break in audio] Nine of 10 crises don't happen, or something like that. And then the related question is, what do you do or how do you advise the Board or what does the Board do when you do see a crisis coming, right? But it's really not the Federal Reserve's job to cry "fire" prematurely. How do you advise, essentially, the Board to manage the pre-crisis period, even when you think it's inevitable, what's going to happen? Thank you.

PAT PARKINSON. Well, the other thing, I think, is that you need to do as good a job as you can to strengthen the prudential regulatory environment requirements that apply. And, again, coming back to the point that Don and I—you need to have the crisis-management tools and make them usable, even if some see problems with that, because I don't think we're ever going to foresee all the crises. And what I remember from the various crises is, this fog-of-war phenomenon is always there—it's very hard to get a clear view of what's happening in the early stages.

MIKE GIBSON. I would say that my reaction to your question, Ted, is that we're never going to be able to predict crises, almost by definition. Like if you're worried about something, then you're going to do something about it that would reduce the risk of a crisis. So it's more about strengthening the system in advance. It's about identifying vulnerabilities like the *Financial Stability Report* does, strengthening the infrastructure like Pat was talking about in terms of key markets. But I don't think we should say our goal is to predict crises, because then we're doomed to fail. Okay, another question. Karen.

KAREN DYNAN. Thank you. Just in the interest of prepping for future crises, I just want to hear a little more. I just remember the staff being just not ready. It's not like it's not ready in the sense of not understanding the substance, but just like not ready to deal with the

stress and that kind of decisionmaking. And I remember Pat Parkinson coming into a conference room at some point—I forget which challenge in the financial crisis we were supposed to be working on—and he's like, "You just have to start throwing spaghetti at the wall and see what sticks." But just along those lines, I understand you can't predict the substance of the next crisis, but people do do things like simulations just to get people kind of used to the idea that you might be under this kind of stress, and you might have to step up and make a decision in a world that's just full of uncertainty. And I just was curious whether you make use of simulations or whether you think you might make use of simulations or what.

ANDREAS LEHNERT. We do, Karen. You know, we had kind of crisis management. I was like, "Well, 2020 is behind us. Let's try to build that crisis-management muscle now and not sort of lose it." One thing that's just very, very hard is the requirement to make decisions under [break in audio] what it's like to have someone sort of say like, "What's this mortgage portfolio worth? Is it worth 60, 80? They say it's worth 95. How much are you willing to lend against it?" I think we do as well a job as can be done outside of kind of a live fire exercise. And I truly hope that we can spend the next 15 years doing nothing but getting good at that. That would be wonderful. [Laughter]

MIKE GIBSON. Okay. Other questions?

JEFF FUHRER. Both Pat and Don talked about the virtue of strengthening the financial system. Given that it's hard to predict the crises, it's good to strengthen it sometime when things are good, which sounds great to me, but it also is probably politically very unpopular. Large financial institutions have a lot of political power. They don't like to have capital surcharges added on when things are doing well, because that takes away from their profits. I know we are an apolitical organization—I swear we are. But, still, there is that aspect of politics which one

must confront. When you think about what I think is the really good idea of our best defense—building up the strength of the financial system during good times—it's not going to be politically popular. How do we get around that?

DON KOHN. The argument you just made is the one that I have gotten from the Fed in response to my [break in audio] what someone said, "The Ds won't like it when you lower it, the Rs won't like it when you raise it." All I can do is speak from my experience in the United Kingdom. The banks were not terribly happy when the capital buffers were increased, but the Parliament seemed to understand. And they had a very bad crisis, as we did—a lot of unemployment, etc. And the idea of strengthening the banks extra in good times so that you can release the capital and have them actually make loans, not get penalized for making those loans because the capital dropped, seemed to resonate. I don't think we've even tried. So that was my response to the high-level person who gave me that D and R thing. I mean, try and explain it—it's so logical to me.

PAT PARKINSON. So, first, as a senior fellow at the Bank Policy Institute, I have no idea what you're talking about. [Laughter] But I would say, building what Don said, the thing that worries me—I think the banking system is much stronger today. We can have a long debate about whether it needs to be strengthened further. The one thing that worries me is that an important objective of the post-crisis bank regulatory regime was to reduce pro-cyclicality, and that was done by creating these capital conservation buffers that, in principle, could be drawn down in a crisis.

I just don't think that's working very well. Now, whether the answer is to go to a countercyclical capital buffer, a different kind of buffer like that used in the U.K., where it would be the regulators that would decide to use it as opposed to the banks, because it is very hard for

the banks to use that buffer in a crisis if everyone is using it—perhaps they could, but they don't want to stand out from the crowd. I think that issue of pro-cyclicality still ought to be on the to-do list for the banking regulators. At that point, I'll stop giving advice on banking regulation.

MIKE GIBSON. I guess my answer would be more of a high-level answer, which would be to say that we at the Fed—Research and Statistics, but the Fed as a whole—we're a data-driven organization. We're based on what's the good analysis, what's the rate, what's the right analytical approach to answering the questions. And we have to put our best arguments forward. And I think we're good at doing that. That's sort of the benchmark of—everything that we do at the Fed is data driven and analytical. And I think we just need to keep playing to that—that's one of our strengths—and keep pushing in that direction, would be my answer.

Okay, so that's the end of the time we have today. Let me say thank you to all the panelists. It's been a really interesting and entertaining discussion. [Applause] Next on the agenda is lunch, which is right outside in the hallway.