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LIQUIDITY AND THE ROLE OF THE LENDER OF LAST RESORT

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Welcome and Opening Remarks:

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LENDER OF LAST RESORT: EXAMINING THE FUNCTION AND LIQUIDITY ADEQUACY OF BANKS

Moderator:

DAVID WESSEL
Director, The Hutchins Center on Fiscal and Monetary Policy
Senior Fellow, Economic Studies

Panelists:

CHARLES CALOMIRIS
Henry Kaufman Professor of Financial Institutions
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DARRELL DUFFIE
Dean Witter Distinguished Professor of Finance
Stanford University

JOHN C. DUGAN
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MARK FLANNERY
BankAmerica Professor of Finance
University of Florida

DONALD KOHN
Senior Fellow, Economic Studies

LIQUIDITY COVERAGE RATIO, NET STABLE FUNDING RATIO AND SHORT-TERM WHOLESALE FUNDING MARKET REFORM

Moderator:

DOUGLAS J. ELLIOTT
Fellow, Economic Studies, Initiative on Business and Public Policy

Panelists:

PAUL R. ACKERMAN
Senior Executive Vice President and Treasurer
Wells Fargo & Company

ADAM GILBERT
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Deputy Director, Division of Banking Supervision and Regulation
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Lunch Keynote:

MARY MILLER
Under Secretary for Domestic Finance
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LIQUIDITY NEEDS IN THE POST-CRISIS WORLD AND LIQUIDITY PROVISION FOR BANK RESOLUTION

Moderator:

DONALD KOHN
Senior Fellow, Economic Studies

Panelists:

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PAUL SALTZMAN
President, The Clearing House Association;
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STEVEN H. STRONGIN
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Closing Keynote Address:

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P R O C E E D I N G S

MR. BAILY: We're going to start in a minute or two, so if I can urge everybody to take their seats. Preferably fill up the -- well, we do have some reserved seating, so not all the way at the front, but please do move forward and --

Thank you. When I was telling my wife about today's conference, she said, well, was I going to make a speech or just ask people to turn their cell phones off? I said, both actually, so could you please, if possible, turn your cell phones off? Now, I know with this Type A audience maybe you can turn them to mute at least and, and if you need to, to put it under the chair in front of you, but hopefully not.

My next piece of business is the following: As a nonprofit, independent, and nonpartisan organization, Brookings research, publications, and events are made possible by the generous support of a multitude of donors. Actually, if the multitude was a little more multitudinous I wouldn't mind, but anyway, by a multitude of donors.

Today's event is made possible in part through an unrestricted gift from the Clearing House, for which we are very grateful.

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Our speakers today have a range of views, and they are encouraged to say what they really think unconstrained by hurting anyone's feelings whether mine or Paul Saltzman's or anyone else, and I'm sure they're going to do that. So, that's the disclaimer at the front, but we're serious about it.

A couple of opening remarks. I want to join my colleague, Doug Elliot, in welcoming everyone to Brookings today for a conference on financial sector liquidity.

Sometimes Brookings has events -- we refer to these as, sort of, being inside-the-beltway issues, meaning they are somewhat of limited interest to the broader country. But liquidity is not an inside-the-beltway issue or even an inside-Wall-Street issue because it affects all financial institutions and ultimately the whole economy.

Unfortunately, it's not an issue that most people understand nor see the full importance of it. So, I think it's very heartening to me today that we have such a great group of participants and a great audience to really dig into this important topic.

Today, you're going to learn a lot about liquidity, maybe more than you wanted to know about liquidity, but I think it's going to be a fun day.

Really, when I started my career it was in macroeconomics in the 1970s, so I'm going to digress a little bit about how we end up where we are.

At that time, the real scourge was inflation, and I participated a lot in the Brookings panel meetings with Art Okun and George Perry in those days. And there was a very, sort of, vigorous debate around inflation and whether the Phillip Curve was a valid concept. There was shift towards rational expectations, and Lucas critique of the Phillips Curve and the work of Lucas and Sargent.

We still see a lot of that alive today. I think in a discussion we had earlier Ben Bernanke was asked, well, how can people on a Fed board possibly think that hyperinflation is around the corner? And he answered that, my answer would be because we still have that monetarist view of inflation that persists to this day, which is not one hundred percent wrong, but obviously it has not been applicable to the world we're in at the moment.

I think another way in which, in my view, macroeconomics took somewhat of a wrong turn was the real business cycle set of models. Again, I think we learned something from that digression, but I don't think we learned a whole lot about the kind of actual business cycles that we experience, which I believe to be largely demand determined, and fluctuations determined.

This is by way of a preamble saying that, in my judgment, the economics profession was largely unprepared for the devastating financial crisis that we had. Now, it's not a new observation to say that people didn't anticipate, the decline in housing prices, and the global spread of this crisis, and I understand. But I'm talking about something a little bit different, and that is whether we had, within our framework of macroeconomics, an adequate understanding of how the financial sector affected the macroeconomy, lead to that crisis, and then subsequently how we could get out of that crisis.

Now, people may disagree with me. Don, I think may be shifting in his seat and going to tell me that the Fed had a model that had a lot of finance in it, which it did. But nevertheless, I'm going to stick to that gun and say we really had a gap in our knowledge; a gap that we are still now trying to fill.

And part of that, I think, is an understanding of the role of liquidity, and one of the consequences, I think, of the difficulty in understanding is why we've ended up with what some people call the, sort of, whack-a-mole theory of regulation. Namely, if you see anything that looks risky let's whack it because it might affect the whole economy.

In his great talk last night, David Wessel, sort of said, well, this is a, sort of, pendulum effect. So, the regulation was too easy, and then we had the crisis, and the pendulum swung too far, and now regulation became too tight. I agree with that completely, but I think one of the reasons the pendulum swung is because of a lack of ability to say here's how the financial sector works, and here are the pressure points that we need to address to make it safer, and you don't, maybe, need to press over there, and you do need to look at the combination of some of these regulations. So, we've ended up with a little bit with overkill.

So, turning more to the question of liquidity, again I think bank runs were certainly not something new. And we know from Walter Bagehot that we think that the right way to deal with these is that Central Bank should "lend freely to solvent depository institutions against good collateral and at interests that are high enough to dissuade those borrowers that are not genuinely in need."

And in the crisis the Federal Reserve certainly did do that. They lent freely to solvent institutions, arguably maybe they lent to some insolvent ones too, and the Treasury lent capital under the TARP program. In fact, the Treasury lent to the big banks whether they wanted the money or not.

So, it's not news to say that this financial rescue was not particularly popular, and Congress reacted to this fact by putting restrictions on future lending. Indeed, they said never again to some lending such as the Fed support of money market funds, and then Dodd-Frank placed restrictions on the 13(3) exigent circumstances lending by the Fed. So, following both the letter and the spirit of Dodd-Frank, the Fed and other regulators have now made it clear that banks are expected to provide their own liquidity and not come to the Fed for funds even in times of moderate stress. Maybe real, heavy stress a different story, but that's still -- I think, it remains to be seen.

Basically the idea is to tell the banks, you've got to carry your own liquidity and not rely on the lender of last resort.

I remembered the other day hearing Barney Frank talk about some of these issues. He was giving a speech at an Urban Institute dinner, and Annette Nazareth and I were in the audience, and we were heckling him a little bit because he was going off about the need of these restrictions on Fed lending. And he had been offering a lot of praise to the Fed and to the Treasury for having saved us from the crisis, and as Annette and I said, and now you want to take away the powers for them to do it if they have to do it again.

But he was pretty adamant about that, and I think he reflecting the sentiment in Congress, which was that Congress controls the purse strings, and they don't think the Fed should be able to make some of that lending without the permission of Congress. Now, the ability to get the permission of Congress in the middle of a crisis is a matter of question.

But here we are then with some restrictions. Arguably they're not as tight as they look. Some restrictions on the ability of the Fed to lend liquidity, and certainly regulations now that are going to make banks required to hold their own liquidity to be able to last 30 days under stress without need to access that liquidity.

With that preamble, I think today's conference is going to examine those issues from a number of dimensions with a lot of very distinguished panelists. So, it's 9:15, and I'm going to get out of the way, and we're going to have our first panel which is moderated by David. Thank you. No, no. There's no -- no.

MR. WESSEL: Morning, I'm David Wessel. I'm the director of the Hutchins Center on Fiscal and Monetary Policy here. It's good to welcome you all. I think one thing we've learned from looking outside is there is such a thing as having too much liquidity.

MR. BAILY: I was going to make that joke, but I…

MR. WESSEL: I also think it'll be required by referring to Walter Bagehot, for good reason. I think Walter Bagehot may be -- his admonition about lending in a panic that Martin referred to may be the only thing in Central Banking that hasn't changed over the last 100 years.

I always liked this quote from Bagehot: "A panic is a species of neuralgia, and according to the rules of science you must not starve it. The holders of the cash reserve, the Central Bank, must be ready to advance it most freely for the liabilities of others. They must lend to merchants, to minor bankers, to this man, and that man whenever the security is good."

We have an extraordinarily distinguished panel today. We could do a whole conference with the panelists I have the pleasure of introducing this morning.

Because my last name begins with "W", we're going to do this in reverse alphabetical order. Our first speaker will be Don Kohn, who's a colleague of mine here at Brookings, of course the former vice chairman of the Federal Reserve Board, and importantly a member of the Financial Policy Committee of the Bank of England.

He'll be followed by Mark Flannery, who is the Bank of America Professor of Finance at the University of Florida, and has a title to which I aspire, Eminent Scholar Chair in Finance.

Then John Dugan of Covington and Burling, of course the former comptroller of the currency.

Darrell Duffie, who's the Dean Witter Professor of Finance at Stanford University's Business School.

And finally, last but not least, Charlie Calomiris, the Henry Kaufman Professor of Financial Institutions at Columbia, who is spending some time at the moment at the IMF, and who -- lest you think he's pointy-headed academic, is actually the chairman of the board of a small bank here in D.C.

Each of our panelists have agreed to speak for five minutes, and my colleague, Sarah Holmes, is going to try to hold them to that. And then we'll come up here and have a discussion and take your questions.

So, Don Kohn.

MR. KOHN: Thanks, David, and it's pleasure to be here, and I'm looking forward to a very, very interesting day.

I'm going to focus, I guess, to some extent on Bagehot's "this man and that man." So, lending by central banks to noncommercial banks, that liquidity provision and the restrictions that were put on that and Dodd-Frank.

I think it's a critical function of central banks to lend to prevent or limit financial panics. Bagehot's thought was that by lending you limited the fire sale pressure on banks and other financial intermediaries, and that would limit the damage. Certainly the Federal Reserve, in 2008 and 2009, opened the discount window to a wide variety of counterparties, but I'm concerned that the restrictions that were put on 13(3) in the Dodd-Frank Act limit, and limit more than is wise, the ability of the Federal Reserve to take those actions again.

So, I start with the premise that nonbank financial intermediation has become and will become, will continue to be an important source of intermediation in the US economy. I think particularly -- it certainly was important a few years ago. It's been of growing importance over the 20th century and into the 21st century, and as we restrict bank intermediation, make it more expensive, there's more as likely to flow out to the nonbank sector.

The old 13(3), the 13(3) -- the lending to individuals, partnerships, and corporations by the Federal Reserve was already pretty restricted. We could use it to limit the damage from runs, and I think we did limit the damage from runs on nonbanks, but we couldn't prevent or forestall the panic.

The vision of the people who founded the Federal Reserve was that just having the Fed there would reassure people and you wouldn't get panics. You couldn't do that with -- we couldn't do it very well with banks. It was even more limited for nonbanks.

There were two restrictions in 13(3). One is that the situation had to be unusual and exigent before the Fed could make a loan. That implied a very bad situation just to open up the window. And secondly, related to that, that whoever was borrowing couldn't get credit elsewhere.

So, you already had to have a bad situation before you opened it up. The new 13(3) in the Federal Reserve Act, lending to individual partnerships and corporations retains those two restrictions and adds a few more. Now, one of the restrictions it adds the Fed sought, and that was a restriction that you couldn't lend to failing institutions. The Dodd-Frank set-up another way of dealing with that.

But there were three more restrictions that, I think, you wonder about. Even facilities, broadly available facilities, for nonbanks, whether those won't be less effective. One, it requires the approval of the Secretary of the Treasury. Now when you get into a crisis situation, you want the Treasury along with you. But this does bring a political -- the potential for a political influence and a political decision that overrides the Fed's technical decision about what's necessary.

Second point is there's a lot of emphasis there on security and assurance of repayment and collateral and the value of collateral. One of the things that Bagehot says is that the central bank should not chase collateral values down. The central bank should value the collateral as it would be valued in a normal time, otherwise you just keep adding to the problems.

And a really important facility that the Federal Reserve had in the last crisis was the commercial paper facility. There was no collateral behind that, right? There were fees that build up. I don't know whether the Fed could do the CPFF again.

And the third issue that concerns me is transparency. So, anybody that borrows from the Federal Reserve, any individual, partnership, or corporation that borrows from the Federal Reserve, their name goes up to the Congress within one week. And the Federal Reserve can request that that name be held confidential, but if I were a potential borrower I don't know how I would view that.

A problem with the discount window that limits the ability of the discount window to do what it's supposed to do is stigma. People don't like to borrow. They don't like to be seen as borrowing. They're afraid that it'll become known in the markets, and this adds now, I think, political risk to market risk.

So, I am worried that the new 13(3) would be even less effective at carrying out Bagehot's vision of what a central bank should do than the old 13(3) was. Thank you.

MR. FLANNERY: Well, I'd say thank you for inviting me, but I only have five minutes, so I can't say that. David's been very clear.

The whole regulation that we've gotten, proposed regulation, related to liquidity coverage ratios derives from a notion that in 2008 there was excessive maturity or credit intermediation, and so we're trying to cut back on that. That's the notion.

Now, I was new to this, so I spent a lot of time thinking about capital regulation. But last week when I started looking at the liquidity regulations, I was surprised of two things. First of all, I was surprised that I didn't see the banks prominently saying, this is going to cut back on lending and raise the cost of lending and increase unemployment and kill jobs. And second, I was surprised that there was no pro forma Basel paper that said, don't worry, there won't be any downside to these liquidity regulations.

And that made me think that these things had not, and at least I couldn't find, a careful cost-benefit analysis about whether, in fact, cutting down liquidity and maturity transformation in the banking system was a benefit that was worth the costs.

So, I came at this, sort of, with the first question being, why do we want to do this? And I have not yet found an answer that's anything like the answers good, bad or indifferent that we've seen in terms of the capital structure. But it does seem to me that that's an issue that people ought to think about.

The second issue is whether we ought to do this through quantity restrictions or price restrictions; sort of the whitesmen notion, and the path has been quantity restrictions. And even assuming that we want to choke off private liquidity and maturity intermediation, it's not clear to me that this isn't a rather coarse, blunt instrument that we're about to put in place with the LCR and the net stable funding ratio.

Where does this transformation happen that causes trouble? Well, it happens in the banks, the IDIs, insured depository institutions. It happens in shadow firms or securitization arrangements, the shadow system, and it happens at bank holding companies outside of the depository institution, so the nonbank subs.

Now, the first thing to think about is the banks. Why do we want to put portfolio restrictions on banks at this point when there's a discount window available to them?

And so, Jeremy Stein, not surprisingly, had an extraordinarily insightful speech that he gave just about a year ago in Charlotte, and he said, look, if there isn't a social cost to using the discount window, then why don't we just use the discount window because that's an easy way, and that's what Bagehot said, and if you read Charles Goodhart's 1990 book about central banking, he says the same thing about what the discount window is for.

So, it seems to me that -- I actually think there are some costs to using the discount window beyond stigma, and that is that it rearranges the priority of claims on the banks assets. That by pledging collateral to the Fed the unsecured claimants on the bank are actually worse off, and they have more incentive to run after than before. So, people call it stigma, but it seems to me it may be rational.

So, we have to think about whether we can rely on the discount window and why we're drawing the line between discount window access and self-finance, the place we are.

Now the shadow intermediation, I believe that if we restrict this intermediation in the regulated sector it's going to go somewhere else. Historically, that somewhere else has relied on bank liquidity guarantees. So, maybe the thing to do is to put special liquidity requirements on liquidity guarantees to securitization if we want to cut that down in the shadow sector.

But certainly the way the LCR is constructed, that's much more coarse than just trying to get at the shadow intermediation that perhaps was too extreme.

And then finally, within the bank holding companies, the nonbank parts of the bank holding companies, that's where the 13(3) restrictions that Don was just talking about are most appropriate. And there, maybe, the liquidity ratio is appropriate for the nonbank parts of the bank holding company. There remains the question of whether pricing, as opposed to quantity restrictions, would be the way to do it.

I had one, sort of, crazy thought that I'm sure the bankers will love. If you want to get at the liquidity transformation in the nonbank parts of the bank holding companies, then change the bankruptcy law so that for information intensive assets the bankruptcy stay doesn't apply to a repo transaction. So, for treasuries it's fine, but for -- I've read some stuff at the New York Fed that they're, sort of, thinking about where the bankruptcy stay ought to apply and not.

And that will be another way to address maturity and liquidity intermediation outside the banks, inside the holding companies.

So, to summarize, I'd say I've got a question about the cost-benefit analysis, I've got a question about whether the LCR and the net stable funding ratios are too broad and blunt, and finally it seems to me that the capital ratios and the liquidity ratios ought to be related to one another in the sense that if you take more liquidity risk by having a lower LCR you ought to be able to compensate with a higher capital ratio elsewhere.

So, those were some of the things that occurred to me in the last week. Thank you.

MR. DUGAN: Thank you very much. It is a pleasure to be here, and I will be brief with my introduction as well to get to our five minutes.

So, I felt what I would do today is build on some of the remarks that have already been provided, but I'll start with the assumption that, I think, is implicit in everything we've talked about: That liquidity was absolutely critical to the problems that we faced in 2008 not just with respect to the broader economy, but it was the thing that potentially failing institutions didn't have enough of it. Less about solvency, more about liquidity, and so the notion that we have to have adequate government tools to deal with liquidity remains critical.

My scorecard on the liquidity tools of the government is as follows in the wake of Dodd-Frank and actions that the government has taken since then. That we preserved three really important tools, we added two more and we took away or severely restricted four others. And I'm going to go through these and then just give you a very quick take on what I think we should do in addition to that.

The three that we preserved are one discount window lending for depository institutions, including on an individual basis. Same thing, we preserve deposit insurance for depository institutions. Not always thought of as a liquidity tool, but clearly it was put in place to address liquidity problems. And third, as we just talked about, we preserved some aspects of the emergency discount window lending to nondepository institutions, particularly on a program-wide basis subject to all the restrictions that Don talked about.

These are all very powerful tools, some of which got developed in the crisis, but they all also have very significant limitations.

Then Dodd-Frank added two more liquidity tools I would say. One is for failing large institutions. It added the orderly liquidation fund; a source of temporary emergency liquidity used to resolve a failing, large, financial institution. Very powerful tool. Very important to the Title 2 of Dodd-Frank.

And as Martin already referred to, there are the new requirements that essentially require banks to self-insure financial institutions by holding more liquidity. We certainly didn't have enough of it in the crisis. Holding more, I think, is a good thing, but it also has potential collateral consequences that you're going to hear about later today.

And then, I think in response to the political pressures, there were four important tools that were removed or severely restricted.

One was in the heat of the crisis the Treasury Department used the exchange stabilization fund theretofore used for currency problems to guarantee money market funds to stop the run on the funds. It was, by the way, extremely effective, and, as was referred to earlier, it was a little bit like the fire department putting out the fire, and people saying, you did a great job, and then outlawing the fire department. So, they took away that tool, admittedly a big stretch of its power to be used in that circumstance.

The second one, that I think has not gotten as much attention as it deserves, is the FDIC's systemic risk exception power to provide assistance to open institutions that are, in some way, connected to a bank. This was a tool that was added in FDICIA a long time ago when I was a junior staffer on the Senate Banking Committee, but it was stretched and massaged in ways that proved extremely powerful during the crisis.

And in particular, it was the source of authority for the temporary liquidity guarantee program that allowed the government to guarantee the balance sheet and issuance of new debt by financial institutions in concert with similar actions taken by governments around the world. It was a tremendously powerful stabilization tool that proved very successful and, by the way, very profitable to the FDIC.

Congress essentially took that away by requiring Congressional approval to put that into place.

The third big cutback is what Don was referring to as the restrictions on emergency lending to nondepository institutions. One he didn't focus on, I believe it's going to be much more difficult even if you satisfy all the restrictions that he pointed out, to lend on an individual basis to a company even if it has severe problems.

And then finally, this was less a Dodd-Frank issue, but it's really an important thing that maybe hasn't gotten the attention it's deserved. One of the tools that supervisors use to address a problem with a big institution that's having a liquidity problem and so that it doesn't spread is to encourage a stronger institution to buy the weaker institution and to use government assistance to do that.

That is going to be very difficult to do in the future because of all of the strings attached and the penalties and enforcement actions that had been taken with respect to the legacy assets of firms that have acquired these institutions in the heat of crisis. I just don't think that will happen again or it will only happen if the government provides such open-ended guarantees about losses that will come later that it's hard to imagine the government being able to do that.

So, that, I think, is my basic scorecard. And my take, just three quick points, I think there are some things where they went too far, and there are three things that ought to be either restored or added.

One is I mentioned the temporary liquidity guarantee program; the ability, in a crisis, to guarantee new debt issued by financial institutions. I would restore the ability to do that without Congressional approval. I think there's a pretty broad consensus on that point.

Secondly, like Don, I am very nervous about the cutback on emergency powers, particularly with individual firms. I recognize the controversy and the problems associated with providing emergency lending to nonbanking firms in a crisis, but it worked. And we don't know what the future will bring.

And I can assure you in the height of the crisis in 2008 people did not know what was going on. We used every tool at our disposal. We twisted some things and expanded them more broadly, and it was really important to address some unknown things and unanticipated things that happened. And I think we have to have some break-the-glass authority to deal with problems in the future.

I would say I think it's an open question whether the Fed by itself should be called on to do that because it's so controversial politically you may need to have the involvement of the White House even if it brings in the politics we've been talking about just because it's such a political kind of decision.

And then lastly, the point I'll leave you with is I believe that the runs on the financial system that started the crisis in 2008 did not emanate from the traditional side of the banking system, but instead emanated from the broker deals and the investment banking side that were not, at that time, as connected to the banking system as they are now.

There is still vulnerability by the short-term wholesale funding of broker dealers. We don't have an adequate tool to deal with them directly. I think there should be serious consideration given to providing them the kind of liquidity that are provided to banks.

I know that's quite controversial and that it's an expansion, but I think if you had that ability, you would be in a better position to deal with a truly problematic broker dealer that was about to fail. And it could fail because healthier broker dealers would be in a position where the problems wouldn't necessarily spread to them because they would have access to such a facility.

It would come with a price. There would be regulatory restrictions that would have to be proposed. But it's a part of the system that, I think, needs addressing. Thank you.

MR. DUFFIE: Good morning. Thanks, David.

Before I got up here, I thought I might be the only one that was going to grip the third rail of financial regulation which is, should 13(3) be extended to nonbanks, individual nonbanks?

13(3) has allowed for broad coverage of areas of the financial system. That would include, for example, the Primary Dealer Credit Facility, but like Don and John who came before me, I'm going to grip that rail and I'm going to talk about why I think 13(3) overly limits the ability of the Fed to provide liquidity to individual nonbanks.

And I'm going to focus my remarks on the securities and derivatives markets, particularly nonbank broker dealers, and I'm going to ask the question: What is it about emergency lending that should not apply to these? Are they systemic? Surely they are. Could they fail from an absence of liquidity?   Yes. So, why wouldn't we extend 13(3) to individual nonbanks?

The situation that we have today puts the Fed in a very difficult position conditional on a systemic liquidity crisis of an individual nonbank. The Fed would, at least if it reads 13(3) as I read it, need to sit on its hands until that systemic crisis spreads to a number of nonbanks that are suffering from a similar liquidity problem, allowing the crisis to spread.

I want to mention briefly there is a specific instance under Dodd-Frank in which a nonbank could be given emergency liquidity. That's the provision for financial market infrastructure. Under the Clearing Supervision Act, the Fed can step in for a central clearing party, for example, and provide emergency liquidity under section 806(b), but only under very limited circumstances, including the contingency that all private market sources of liquidity have been exhausted. So essentially, given how quickly things can happen, I don't think the liquidity might be quick enough.

Let me return to broker dealers though. Yes, they are systemic. The United States, among all national economies, surely would recognize that securities and derivatives markets are systemically important. The United States has far more provision of credit and risk transfer through broker dealers than any other major country. So, it's ironic that the United States is limiting 13(3) from those sources of liquidity risk.

Let me address the arguments that have sometimes been made against providing emergency liquidity.

One of them is that macroprudential regulation will take care of this problem. We don't need it outside of the regulated banking system. Well, that certainly didn't apply before the last financial crisis. Macropru didn't work very well. Securities and Exchange Commission, while it does a good job in many areas, I don't think you would say macroprudential regulation of broker dealers was a high point in its macroprudential supervision.

And it is true that individual, systemically important, nonbank firms can now be designated by the Financial Stability Oversight Council for some degree of supervision, but the primary responsibility rests with the Securities and Exchange Commission, and I hope that they do a very good job, but I wouldn't want to rule out the possibility that one of those could get into trouble.

The other argument that's often made is moral hazard. In my view, macropru is the best defense against the moral hazard problem. You force shareholders, through capital and liquidity requirements, to bear the costs of avoiding a liquidity crisis. I don't think moral hazard on its own is going to be an effective tool in mitigating the likelihood that a firm will get into trouble.

The metaphor that comes to mind is whether you would be willing to send your teenagers far offshore in a sailing boat without life jackets, here the life jackets is the liquidity from the Fed, with the idea in mind that if they don't have life jackets then they'll probably be quite safe because they're going to hug the shore and avoid getting into trouble. I wouldn't do that. I would require the life jackets.

In the current environment, we are seeing a significant amount of credit provision outside of the regulated banking system in the United States. Just a couple of days ago, I noticed that Jeffries, a broker dealer, managed to beat out Morgan Stanley for a very large leverage loan. I wouldn't be surprised if we see a number of nonbank-affiliated broker dealers become more systemically important, and at some point be a source of concern.

We shouldn't be thinking of lending of last resort as something other than what is to be used in the contingency that one of these firms gets into liquidity troubles.

I think I'll leave it there. Thank you.

MR. CALOMIRIS: Thanks for inviting me. I'm happy to start off with some basic ideas and look forward to the discussion.

But I want to start somewhere where my colleagues didn't start, which is defining what a liquidity crisis is. And I want to emphasize that this past one, like every other one, is always an insolvency crisis. There has never been a liquidity crisis that did not emerge endogenously as a result of substantial increases in insolvency risk that drove the funding liquidity problems, the inability of intermediaries to roll over the short-term debts.

The dime-and-diving model or any other conception of exogenous -- that is shocks to liquidity that don't come from insolvency, that is a model still looking for an example. And this last crisis certainly was not the example.

What happened, of course, is that from roughly April 2006, when bank holding companies and other intermediaries had their peak of their market value of equity to market value of assets that declined roughly from the spring of 2006 gradually, usually, until by September 2008 when that ratio looked very, very low. For example, Citibank was thirteen percent in April 2006, market value of equity to assets. By September 2008, it was about two percent which is the insolvency point given the put-option value of too big to fail and deposit insurance. In other words, Lehman was a match and a tinder box of insolvency risk.

So, what liquidity crises are, and always have been, is insolvency crises. The olive green one there is the Citibank line that I was just describing to you. And, of course, the obvious error that the regulatory and political process made in the crisis was not reacting to a more than two year gradual decline in the creditworthiness of financial institutions which was clearly visible and which was known by the market until it was too late. As people saw the signals increasing of the larger exposure of these institutions over time, we finally got to the breaking point in September.

So, that's what a liquidity crisis is. It's an insolvency risk problem, a counterparty risk problem that leads to a funding illiquidity problem.

What are the implications? Well, obviously, as Mark already pointed out, although I say it a little bit less nicely, the separation of liquidity and capital standards is idiotic. They are two different ways to affect insolvency risk, and insolvency risk is the whole game.

What's needed is a framework that talks coherently about how they trade off, and what the limits to the substitution between liquidity, that is cash on your balance sheet, and capital on your balance sheet are. And I want to point out that I do have, with some coauthors, one of who's here from the ECB, Florian Heider, some theoretical ideas about that. And the key things I would point out to you is from the standpoint simply of insolvency risk management, cash is extremely useful.

First of all, it's not an accounting fiction. Cash at the central bank, unlike capital, is not an accounting fiction. So, it's extremely useful because it's really a buffer you can rely on. And secondly, it has some really favorable consequences for risk management.

So, now that we've diagnosed the problem and pointed out that liquidity regulation's main role should be special advantages of liquidity regulation for limiting insolvency problems, I want to now come to the basic question. As the other panelists have pointed out, we've limited our interventions into liquidity risk problems, and the question is the absence now of sort of blanket guarantees of debt or recapitalization schemes orchestrated by the Fed, is that going to be a problem?

So, the case against the view that it's a problem is, well, if we had good enough capital and cash requirements, not just macroprudential but microprudential, then maybe we can get by without this problem, without these other interventions. And I have some ideas about how we could improve the regulatory environment to make capital and cash standards sufficient and reliable from a dynamic standpoint so that we would never get back into where we were where we allowed Citibank's market value of equity ratio to fall from thirteen percent to two percent. That, to me, was the basic mistake, and it is avoidable.

But ultimately, I'm going to come out where my other panelists came out. And I want to point out a few things about why I'm skeptical of the Bagehot Rule approach. First of all, Bagehot's Rule is a myth. The Bank of England didn't use Bagehot's Rule.

In fact, no central banks have ever relied entirely on Bagehot's Rule. For example, the resolution of the Baring's Crisis in 1890 by the central bank, the Bank of England, was done through credit guarantees, not through collateralized lending. The resolution of the Mexican Crisis of 1908 also was done through a, kind of, interesting, complex, credit guarantee approach.

Central banks pretty much haven't really relied on collateralized lending as their main tool throughout history. So, we have this misconception that Bagehot's Rule is enough. It probably isn't. Um, we also have some pretty good examples from history that tell us that other kinds of interventions can be very useful. I would point out that in the 1930s the use of the Reconstruction and Finance Corporation was a pretty good ad hoc device.

So, my view, which echoes what previous people said is having something, instead of delayed, sort of, use of something while we reinvent it, having something on the shelf that we, kind of, agree could be used would be very good in avoiding delays and politicization relating to the actual event. What exactly that should be isn't so clear. We'll talk more about it.

What role should the central bank have in this? My own view is not much. This should be done through -- as the RFC was for example, done through something outside the central bank because I think the consequences of the politicization of the central bank, which we're living with right now, are not desirable.

So, that's a summary of my conclusions that, first of all, liquidity regulation has to be about insolvency risk because liquidity crises always are about insolvency risk. Cash does have some unique roles, and we want to really take those seriously which I'm not hearing much in the debate unfortunately. And then finally I am cognizant of the fact that, as many other people have said, even when we think we've solved problems with microprudential or macroprudential, it's likely not to be enough, so it would be good to have something on the shelf. Thank you.

MR. WESSEL: There's a microphone on the chair. If you need help -- Well, I want to start by really thanking the panelists for taking my advice to keep it short so we can have a good discussion among ourselves and involve you before we're done. I'm, kind of, startled that there appeared to be a consensus emerging. I thought that wasn't supposed to happen until the third panel. So, is everybody here agreed that when we think about the Fed and its lender of last resort function that too much restriction has been put on it? Do you think that, Mark?

MR. FLANNERY: Yeah, I do. I think -- I forgot who said it. I think John said, there are at least break-the-glass power.

MR. WESSEL: And Charlie, you think maybe someone else ought to have it, but someone ought to have it?

MR. CALOMIRIS: Yeah. I'm a little concerned about giving physical authority to the Fed, and credit subsidies, which are what these guarantees are, or recapitalizations. So, I think that Bear Stearns was an unfortunate episode that we don't want to repeat, and we don't want to put the Fed into this role of being, sort of, the lightning rod of all of the politics. So, I think you might want to have such an authority, and we should think about it and construct it and not destroy the central bank again in the process.

MR. WESSEL: I thought that one of the points of liquidity was that if you're running a strong bank and Citibank looks insolvent and there's a run on your bank that we ought to have some way to give you liquidity even though you don't have a solvency problem. You don't seem to entertain that as a big possibility.

MR. CALOMIRIS: Well, I'm not saying that it's not possible that confusion -- liquidity crises have two pieces to them. One of them is an insolvency trigger, which is an event. And then the question is what is your factor loading? How big is your exposure to that shock? And there can be a lot of confusion about that.

So, I'm not saying that there -- there is a potential for confusion, and that solvent institutions can be confused with insolvent ones, but what I am saying is if the banks had not been allowed to get their market value ratios down to very dangerous levels, that that sort of confusion wouldn't have been relevant for their ability to roll over their short-term debts.

But that said, as much as I believe that we could solve the problem with microprudential regulation, that I still am echoing the views of others that there are other kinds of events that come up outside the banking system that might be relevant, and it would be nice to have some kind of rules in place in advance about what we would do, but not necessarily in the Fed. In fact, probably not.

MR. DUGAN: I agree with that last point. I think for that really extraordinary event that's super political, I think it is a lot to expect the Fed to bear that and to bear the political consequences that would come from it. And I think during the crisis there was a lot of discussions with the White House and others about, isn't there any authority that you have to deal with? And the answer was no. And you'd want the administration on the hook for this very political decision for some very significant emergencies, I think.

MR. WESSEL: Don?

MR. KOHN: So, I think Dodd-Frank made a differentiation and should have made it even stronger, which is for sure if you have a failing institution or one that looks like it's insolvent. Then you have to go through orderly liquidation and that was a tool we didn't have during the crisis. There just was no choice in Bear Stearns and AIG, et cetera.

But now, when you get to the rest of the market and the confusion is there and the fire sales that mount up. The difference between liquidity and solvency in a crisis is very fuzzy because the lack of liquidity forces sales of assets that drive down prices that make institutions that would be solvent in more normal times, and even if those MBS were valued at reasonable levels, even reasonable low levels.

But when everything gets sold and you got the fire sales, there has to be a way to come in and -- and Tim Geithner called it spreading foam on the runway, right? Somehow protecting the institutions and limiting the fire sales beyond the bad institution, which I agree is a political fiscal decision.

MR. WESSEL: Let's say we extend the discount window to broker dealers in some form or another. So, that suggests to me that the Fed would have to have a lot more regulatory authority over broker dealers, or at least supervisory authority. Is that practical?

MR. DUFFIE: It's currently happening under FSOC-designated broker dealers.

MR. WESSEL: Right.

MR. DUFFIE: But conditional on the problem there, it's section 23(a) of the Federal Reserve Act, prevents liquidity coming through the bank itself into those bank-affiliated broker dealers.

MR. WESSEL: Right.

MR. DUFFIE: So, the logical conclusion is that if only one of them is having a systemic liquidity crisis you need to stop it. It's called emergency liquidity because there's a timing issue here. And waiting for some sign-off that's potentially politicized is not what you want to do. You want to go afterwards, review whether in fact there was some excessive fiscal authority used. The Bank of England was forced to appear in front of the Treasury Select Committee after providing emergency liquidity to justify its actions, and I think that's completely natural in the cause of emergency liquidity to a nonbank.

MR. WESSEL: And what about looking at this from the bank's point-of-view? So as I understand it the regulators have decided that the banks need to have more self-insurance. And the question is is that necessary, is it a good idea, and have the rules gone too far? Do people have a view on that?

MR. CALOMIRIS: When you say self-insurance, I think that --

MR. WESSEL: Hold more liquidity than you otherwise would.

MR. CALOMIRIS: Yes, but not necessarily liquidity. Again, capital and liquidity and thinking about this in terms of counterparty risk and a systemic shock. What happened was a really big shock was allowed to erode the counterparty quality of the major intermediaries, and over time, as that happened without being corrected, it ultimately led to their inability to roll over dead.

So, how do you fix that? You create a resilient system. In other words, something that would have told banks it's not acceptable for your market value of equity ratio to fall below a certain amount, and when it starts to fall there you have to issue new equity. And the markets were wide open. From September of '07 to September of '08, 450 billion of capital was raised in the markets. The reason that the banks and the investment banks didn't raise more was because they didn't like the price and they had the backstop protection.

So, when I emphasize we could have done a lot better, and we could, with some creative mechanisms that Mark and I have been advocating, we could do a lot better.

MR. WESSEL: But should the banks be required to hold more cash? Have we gone too far?

MR. CALOMIRIS: My view is yes. I would like to see, and I know that people are going to think it's excessive, but I think that requiring banks to hold, let's say, about ten percent of their assets as equity, ten percent as a new, kind of, CoCo's bond, and also a twenty percent cash reserve required relative to assets remunerated at the Fed funds rate and held at the Federal Reserve on a 24/7 basis, I think that would be a good start.

MR. WESSEL: What about other people? What are you thinking, John?

MR. DUGAN: So, I'm not an economist, but all of that money --

MR. WESSEL: That's why we invited you.

MR. DUGAN: -- all that money -- thank you. All that money that you're holding is not going to work in the economy. There is a tradeoff. At some point, you have a place where you are -- the self-insurance is a great idea. They're much safer. But they may not be doing the job they're supposed to be doing with funding, intermediation, and that kind of, like, growth. I don't know where that tradeoff is, but I think you can get there. And I'm not exactly sure what the trade is, but we should be very conscious of it.

MR. WESSEL: And do you think we're on the wrong side of that or do you know?

MR. DUGAN: On the other hand, I think, during the crisis we clearly did not have enough --

MR. WESSEL: Right.

MR. DUGAN: -- liquidity, so we had to do more. Calibrating how much is enough is a very difficult thing. We're in very new territory on liquidity in particular, and honestly I don't know. And I think that your panel later today is a nice segue or a tee up for them. That's what they're going to talk about with the LCR and the net stable funding ratio. But that tradeoff is absolutely critical to bear in mind.

MR. WESSEL: Right. So, I get the tradeoff. I'm trying to figure out do people have a view about where we are in the balance.

MR. DUFFIE: I don't think we've gone too far. I think until we have more capital and more confidence in our risk-based capital requirements, which we're still fiddling, that minimum liquidity requirements are a very natural requirement. I don't think they've gone too far at all.

MR. CALOMIRIS: I want to emphasize that the current Basel formulation, these two ratios, is not what I'm proposing at all. And I worry that those are actually taxing liquidity production by banks. It's not the same as requiring a cash reserve requirement at the central bank. I don't want to go into why, but it's very different. Cash, not just longer-term debt, is a very effective regulatory tool because it's a real buffer in a way that book capital might not be.

So, what we mean by liquidity regulation has been hijacked by what I consider nonsensical Basel ratios that say things like covered bonds or liquid assets and other kinds of really undesirable regulatory changes. We need to get back to cash. I would also emphasize under the National Banking Act, under Clearing House rules, what was the prudential tool that was always used? It was the cash ratio, not the capital ratio. We didn't bring that in until 1981. Cash ratios. It's like a margin requirement, right?

And a lot of people talk about one hundred percent cash banking. You don't really need one hundred percent to get huge advantages in terms of downside protection. And it doesn't necessarily stop you from lending because you can always increase the scale of the bank with raising more capital too. Yes, it does have a cost, and you're right, but it's not like it's a prohibition on lending. Banks can scale up.

MR. WESSEL: Mark, do you think we've gone too far?

MR. FLANNERY: I do. I think that this LCR stuff is just a complete mare's nest in terms of deciding what the runoff assumptions ought to be. I think that it's doomed to get lost in the details of political fighting between the regulated and the regulatees. And I guess I don't see a lot of benefit to it.

In other words, if there's some chance that I'm going to lose all of my liabilities, holding twenty percent of those liabilities in liquid assets doesn't really help if it's going to be bad enough -- if it's a solvency issue and everybody's going to run against me.

More more than that, I look at the level of assumptions and the level of calculations that people have to make and defend as plausible, and I think that it's just a horribly burdensome regulation.

MR. WESSEL: You mean the liquidity per se or the whole panoply of regulations?

MR. FLANNERY: I meant the liquidity part of it. Anybody could argue easily with the notion that three percent versus ten percent of insured deposits would run off within 30 days. I don't know where to get that information in a way that I could rely on it. So, I think it's a really difficult set of regulations.

MR. WESSEL: And you raise the good question of weighing the costs and benefits, and the cost of asking the banks to hold too much liquidity are?

MR. FLANNERY: Well, for any given portfolio size, they're going to have less lending.

MR. WESSEL: Right.

MR. FLANNERY: They're going to do less of something else. Where is it going to go? We don't know, but it's going to go somewhere. So, I think we run in this and in the capital regulation case, we run the risk of winding up with safer banks but a less safe financial system, and doubly less safe because we haven't got mechanisms in place.

MR. WESSEL: It seems to me you're making two different arguments here. One is they will lend less.

MR. FLANNERY: Mm-hmm.

MR. WESSEL: And we have to decide is that a good trade to have a more stable financial system.

MR. FLANNERY: Yes, exactly. Yes.

MR. WESSEL: That's one, and the second is the one about the perimeter. Obviously if you have only one set of institutions that are regulated, the stuff migrates to the shadow banking system. We'll just recreate Bear Stearns, Lehman

Brothers, and money market funds again, and I haven't heard anybody express the view that that's a good idea.

Don, are we doing too much to make the banks or not enough or --?

MR. KOHN: Well, I don't think we know yet. Right now I think we've done too much. I think we need to let the process work out, see where it ends up. But I do have the same concerns that you just expressed, David. That if we are going to make the banking system safer, we got to make sure we're not making the financial system less safe by having the stuff migrate elsewhere and do maturity transformation and leverage in ways that are less transparent as happened in the '04-'06 period.

Private investors didn't understand what they were getting. The issuers didn't understand what they were issuing. There was a lot of very risky banking going on outside the banking system. A lot of that was regulatory arbitrage if you think about the sieves and the conduits and whatnot.

So, I think we have to be very careful as we implement these regulations on capital and liquidity about what's going on outside.

MR. CALOMIRIS: But I would want to emphasize something that -- remember, what I'm talking about is really almost like a Treasury bill holding requirement but that's held at the Fed. And if you look at the post-World War II period in the US, ratio of Treasury securities held by banks as a proportionate of their assets has been pretty high on average. Recently it's not been as high. But I don't think it's such a strange thing to require them to hold effectively twenty percent of that.

And I would also say in response to what Mark said, actually if you -- you know, I'd like the opportunity to convince him. A twenty percent requirement actually could do a lot of good in terms of insolvency risk, particularly if combined with the higher capital requirement and a CoCo's requirement.

So, it's the combination of them that I think is -- so, I'm looking at it more from the standpoint of it really wouldn't be that unusual to tell banks that they have to have twenty percent of their assets in Treasuries.

MR. WESSEL: But what about the nonbanks? You going to --

MR. CALOMIRIS: Well, that's where it gets tricky. And I share the concerns here that if you make this too punitive, then you're going to start creating problems. Right now, we're already seeing this in, I think, the insurance industry, is one of the big problems.

We're seeing problems in the pricing of variable annuities. That is, too aggressive pricing. We're seeing insurance companies getting involved now in agricultural land, not to mention unbelievable terms, unprecedentedly loose terms in commercial real estate funding, on loans. So, I actually think we're already seeing a fairly frothy environment in commercial lending coming from shadow insurance.

MR. WESSEL: So, Mark, do you think if the banks had to hold twenty percent of their assets in T-bills or cash that that would be a good thing? What would be the downside of that?

MR. FLANNERY: Well, again, I think the downside is that first of all, there's less intermediation going on.

MR. WESSEL: Right. That's part of the point though.

MR. FLANNERY: That's the point. That's the point.

MR. WESSEL: Right.

MR. FLANNERY: But I guess I don't have a strong sense for where to stop.

MR. WESSEL: Right.

MR. FLANNERY: And twenty percent seems like a lot. Charlie, the banks have held a lot of Treasuries, but I'll bet a lot of them are encumbered by repo obligations. So, this requirement is for unencumbered Treasury holdings, which may be quite different from what (inaudible) for.

MR. WESSEL: Darrell, I wonder if you could talk a little bit about the role that bankruptcy plays in this. There is, from time to time -- if we could just get a better bank regime, we wouldn't have to put ourselves through all this stuff. And then there are other people who say, yeah, right. That worked out so well with Lehman Brothers. We want to make that a regular part of our thing. What role does bankruptcy play in this, and how could we use bankruptcy more effectively in these situations?

MR. DUFFIE: Well, the first thing we could do is to change current bankruptcy rules so that we tailor some chapter of the bankruptcy code. There's a group of scholars at Stanford that have been working on what's called Chapter 14 that's designed to more quickly handle a systemic financial institution that's failing.

The second thing we could do is to clarify the treatment under bankruptcy of what are called qualified financial contracts. So, currently there are issues -- not as much in the US, but in the UK -- with the swaps books of broker dealers in the UK which have more than half of the global swaps.

These swaps terminate at any insolvency, and under UK law there's nothing restricting swaps holders from collecting collateral and destabilizing that financial institution. So, I think the UK authorities need to do something with their insolvency regime to avoid destabilizing systemically important firms.

MR. WESSEL: Hm. Don, you look like you were either agreeing or --

MR. KOHN: International aspect is really important here, so I guess I think that it would take reform of bankruptcy all over the world to make this happen. We'd probably have a better chance of using the Title 2 type of interventions and coordinating that then we would be coordinating bankruptcy laws.

So, I think even with the reform of the bankruptcy code, which might be helpful to pick up some more firms, there'll still be a role for an orderly liquidation authority for the government as the FDIC has done for depository institutions for decades. Let them do that for really systemically important institutions that really can't be handled very well by the bankruptcy code, even a reformed one.

MR. WESSEL: I agree with that.

MR. DUGAN: Yeah, but even if you had a perfect bankruptcy system, you're still going to have runs and systemic questions and liquidity issues well before that that require tools.

MR. WESSEL: Right.

MR. DUGAN: For example, the things that Don talked about in his remarks about more systematic, programmatic things that we did during the crisis with respect to commercial paper and the like, those kinds of tools are really important to prevent something from metastasizing and causing a lot of other institutions to fail. You have to have those tools.

MR. WESSEL: Can you talk a little bit about why you feel so strongly that eliminating the FDIC's ability to guarantee bank debts was a mistake? And then I'd like the other people to respond.

MR. DUGAN: Yeah. So, during the crisis in October 2008 when -- at this point, it had spread, and there were confidence problems all over the world. And governments were looking for things to really try to stabilize things and to staunch the bleeding with respect to healthier firms more generally. And so that people would have more confidence to not just hoard cash and hold onto things.

And the notion that governments were standing behind balance sheets of banks as they issued new debts made it possible for them to do so. And that was done on a coordinated basis. People still looked at, to some extent, the balance sheets of the companies. There were still some differentials, but it was enormously powerful thing to keep markets open.

And we did it using this, kind of, coopered together authority that nobody thought would be used for such a circumstance frankly, but it worked really well. And it staunched the bleeding, as I mentioned, and was very profitable to the government; I think widely viewed as successful.

And now, in the legislation, Dodd-Frank had ordered to do that in the United States you have to go get express approval from Congress. And that's just something that's too difficult to do. It's too much of a hurdle in the middle of a crisis in my view, and I --

MR. WESSEL: Right. And Charlie pointed out that this has been done for decades, this idea of --

MR. CALOMIRIS: Yeah. Well, there are many different ways to do it, and --

MR. WESSEL: Would you recommend restoring that authority?

MR. CALOMIRIS: I'm not sure. I'm thinking about this right now. I'm writing a paper with two other people, Mark Flander and Luke Leyvin, where we're surveying what 20 different countries' lender of last resort authority rules have been from 1970 to the present. And one of the examples that I'm, kind of, looking at and thinking is interesting is the Canadian example.

So, Canada specifies three tiers of interventions, and then it has particular triggers that have to be satisfied to go from one tier to the other. There's also a substitutability between a recapitalization and a debt-guarantee strategy. So, there's some interesting economic questions here, and I'm not sure that debt guarantees on a blanket basis are the best way to do them.

So, for example, when the Bank of England was faced with this problem coming from a shadow bank called Barings, which was an investment bank in 1890, it created exposure for the London Clearing Banks. And so, it told the London Clearing Banks, well, I'll tell you what I'll do. You guys put together a fund to guarantee Barings, and I'll provide backstop to that.

One of the pieces that we don't do anymore but which was very much used historically was to take the banks and have them get together as a group and have to bear, sort of, first loss in dealing with systemic risk episodes, and then have the government backstop them, which is like Bagehot's rule in the sense that the government --

MR. KOHN: Sort of like LTC, NTCM, yeah.

MR. CALOMIRIS: Yes. But not --

MR. WESSEL: But not well -- (Laughter)

MR. CALMORIS: Not quite --

MR. WESSEL: It was popular.

MR. CALOMIRIS: -- because -- so, I think that the -- I'm not ready to tell you what I think the right answer is, but I'm saying there's more substitutability here than you think. Ultimately because liquidity problems have an insolvency basis to them, a lot of the solutions can deal with guaranteeing insolvency.

MR. WESSEL: Right.

MR. CALOMIRIS: And you can do that in some very -- so, for example, Chuck Schumer, in September 2008, suggested that we might bring back the Reconstruction Finance Corporation. Now, I think that if you had done that in September

2008 instead of squander several months before we really had any --

MR. KOHN: You got TARP in September 2008.

MR. CALOMIRIS: No, no. You didn't get it in September. I don't think you got it --

MR. WESSEL: October.

MR. CALOMIRIS: Yes.

MR. WESSEL: Beginning of October.

MR. DUFFIE: Third week of October.

MR. CALOMIRIS: And furthermore, it really wasn't implementable as the Treasury Secretary originally designed it, so you didn't really get anywhere for months. So, I think if you had actually moved with even an old-fashioned, preferred stock recapitalization, if that had been on the shelf and bring back RFC, which is what Schumer was saying, I think that might not have been such a bad idea.

MR. FLANNERY: But big recaps were done in October of 2008 using TARP (inaudible) banks.

MR. WESSEL: Right. But, Don, correct me if I'm wrong. So, it would be nice, I'm sure, if you were the central bank and the OCC and the FDIC -- if Congress said, as a result of this crisis we are going to put a whole lot of standby legislation on the books. You could have an RFC, and you can have bank guarantees, and you can have all -- now, you guys choose. Which one do you want if we have a crisis? My judgment is the chances of that are somewhat less than zero.

MR. CALMORIS: Right, and I'm not suggesting that, but look at the Canadian example. There's specific --

MR. WESSEL: Right, but, Don --

MR. KOHN: Yeah?

MR. WESSEL: -- but, Don, correct me if I'm wrong, it seems that both you and John Dugan are saying that the problem is that these panics can come on you very fast, and they may happen in ways that you don't anticipate, and that you're -- I'm putting words in your mouth -- you were generals on a battlefield. Don't tell us what we can and can't do and think that you can manage it.

MR. KOHN: It's very hard to anticipate a) what's going to happen and b) what's going to work in order to stem it. So, I think a fair point with Fed liquidity facilities is we tried a whole a bunch of them. Some of them got no action whatsoever, that didn't work, but you kept trying until you found something that stemmed the panic. So, it's very hard to say.

I think Charlie's onto the standard playbook in a banking panic is capital and guarantees. And I take Charlie's proposal as having both of these available to the authorities, but I also take your point, David. Getting that done, getting it on the shelf even with very difficult triggers is going to be extremely hard.

A really adverse effect of the crisis was people equating loans with bailouts. It had been so long since the 1930s that people forgot that what a central bank is supposed to do is make loans against collateral to stem the panic. And doing standard central bank stuff was termed a bailout even though, in the end, it was.

I mean, in the end -- obviously it stopped the panic, and people got loans they couldn't get in the markets because the markets weren't operating. That's exactly the point of it. But in the end, people lost track of what central banks were really supposed to be doing.

MR. WESSEL: I want the rest of you to respond to a point that Don made here and he's made previously: That our drive for endless transparency creates a stigma that then leads the institutions to then be reluctant to do what is not only in their interest but in our joint interest.

I mean, you warned about that early, right? And then you, kind of, lost that argument with the Congress over this stuff. And as I recall, most of the blowback was people were -- or some journalists were shocked that there's actually foreign banks that can borrow from the Fed, which had never occurred to them before. Apparently they'd never used their HSBC ATM card or something. (Laughter)

I thought the joke about the rain was better than that one. (Laughter)

Did the rest of you worry about stigma or is that just Don fighting the last war? Darrell?

MR. DUFFIE: I thought during the 2008-2009 period stigma didn't end up causing severe problems for the Fed, partly because it was using auction-based --

MR. WESSEL: Right, but that was an adaptation to deal with it.

MR. DUFFIE: -- credit facilities and broker dealers and banks that could appear to be simply competing in markets for profitable opportunities rather than harming themselves. In a general financial crisis situation, I don't think stigma has turned out to be a problem. In a one-off, where a bank needs to go to a discount window, I think there is a severe stigma. And if it's not a general crisis that it would be reluctant to do so until it might be too late. Hopefully that's not going to be more than a one-off.

MR. DUGAN: I think there were stigma issues in the crisis. I think people were really reluctant to go. I think it was partially addressed by creating these facilities that were designed to address stigma, and it addressed a lot of them, but not all of them. I think there were individual firms -- I know there were individual firms very reluctant to use them for word getting out. And I think it's a problem whenever you're designing these credit facilities to try to address stigma. I don't think we've gotten rid of that problem. I do think it's still there.

MR. WESSEL: What do you think Mark?

MR. FLANNERY: Well, I think that the Fed took a lot of steps to try to minimize the stigma. And the stigma's always been a little bit of a puzzle to me as well because the discount window tends to be a pretty good deal when you go there. So, it's always been a little bit of a puzzle to me why pledging your collateral for the lowest price should be stigmatic, if that's a word.

MR. DUGAN: But I think if you looked back on it with the records that the US firms that used it was actually pretty low. The traditional discount windows opposed to the foreign firms which, as you pointed out, not many people knew what was going on.

MR. WESSEL: Right, right.

MR. DUGAN: But the US firms were very reluctant to use them. They had to create these other facilities that were more open and where there was cajoling going on to get obviously healthy firms involved to try to get rid of stigma. So, it was still --

MR. WESSEL: Right. I mean, Mark, it may not be rational, but the amount of press you get when you took anything from the government was certainly -- made you think twice about doing it.

MR. FLANNERY: Right. I'm not saying that because I don't understand that it's wrong. I'm just saying I don't understand this.

MR. CALOMIRIS: I'm not sure I agree with the answers that others have made. One thing that is striking, of course, is how much in September the liquidity hoarding behavior of banks changed. So, in other words, they certainly don't seem to have been thinking that they wanted to rely on central banks.

There are a couple of interpretations of that huge change in September which, by the way, happened in Europe as well as in the US. That there's a qualitative change in the accumulation of excess reserves that's happening at that time that I think is at least consistent with the view that they didn't want to be in the position of relying too much on the lender of last resort.

There may be other interpretations.

MR. WESSEL: Is that a bad thing or a good thing?

MR. CALOMIRIS: No, I'm just offering that as an example if you were trying to see is there any reason to think there might have been a stigma problem --

MR. WESSEL: Right, right.

MR. CALOMIRIS: -- that at least is consistent with the --

MR. KOHN: It would be a bad thing if the banks stopped making loans even more than they otherwise would be stopping making loans in order to accumulate liquidity, so yes, I think that would be part of the downward spiral. I think that is a bad thing.

MR. WESSEL: I think it's a good time to turn to questions. Do we have mics?

MS. HOLMES: We do, yeah.

MR. WESSEL: Okay. Why don't you down in the middle -- do me a favor and tell us who you are and try to remember that questions usually end with a question mark. That goes for you too, Bert. (Laughter)

MR. LEE: I always ask questions. Bertie Lee, a banking monetary policy consultant.

I want to come back to something that I think Charlie came close to touching on. It's his whole question of solvents. When is an institution solvent? How do we know it? Don Kohn said something along the line, well, looks like it's insolvent. It seems to me that that's a major issue here in a crisis is who is solvent and who is not, and it's exacerbated by mark-to-market accounting.

So, my question for the panel is in a crisis, in an environment where you have mark-to-market accounting and all of the transparency associated with it, how are the regulators supposed to determine who they lend to and who they don't, or does precaution go out the window and you lend to everyone whether they're solvent or not?

MR. CALOMIRIS: Can I --

MR. WESSEL: Sure.

MR. CALOMIRIS: So, my first answer to that is we really don't care about the existential question of ultimately whether in God's eye a bank is solvent or insolvent because what makes a systemic crisis happen is when the market sufficiently doubts the solvency of the institution.

So, that market value ratio that I was pointing to really is what you care about, because if enough significant institutions have low market value ratios that's a sufficient statistic to tell you that their counterparty risk has gotten a lot worse. And that's going to create a funding liquidity crisis.

So, I really believe that as a first, sort of, tool, we should be looking much more closely at market value ratios and making sure that they aren't allowed to get very low. So, I think keeping market value ratios of banks and large intermediaries that are subject to this kind of liquidity risk above a number like a nine or ten percent would be a great way to avoid having to lend or assist insolvent institutions. But that indicator should have been relied on a lot more by the regulators. I know that they were aware of it, but they weren't reacting to it.

MR. WESSEL: Don, how hard is it to tell in a mark-to-market world whether an institution that is insolvent should be allowed to borrow from the discount window or not?

MR. KOHN: It's very hard to tell because you don't know what the real prices of those assets are going to be in six months or a year. Whether the prices we're seeing on the market today are indicative of the underlying value or if you lend to them and get them through this period and get the markets calmed down they'll be plenty solvent. So, it's very hard to tell.

I think in some cases it's pretty clear that there's hardly any imaginable rebound than asset prices that would make a particular institution solvent, but there are a lot of borderline -- and you don't have very good up-to-date data. That's another problem. To some extent, you're sitting there looking at last quarter's call report and trying to make adjustments to what you see. So, knowing whether an institution is solvent is very difficult.

I think Charlie's point about earlier intervention, making sure there are ways of building solvency is exactly right. And that's what the stress tests are about, and that's what CoCo's are about. So, having bail-in-able capital that bails in while the institution's alive, not just bail-in-able at death, will help to keep that market solvency up there.

MR. WESSEL: And I assume it matters if it's a one-off at a time when the world is calm and if they're all going at once?

MR. KOHN: Yes. If it's idiosyncratic, fine. Let him go. But when it --

MR. WESSEL: Darrell?

MR. DUFFIE: I was going to say that I agree with what's been said, but I think the reputational concerns of the Fed are something of a (inaudible) against that. The Fed is going to taken to account afterwards if it lends to insolvent institutions, and its risk management of its own reputation is, to some extent, going to mitigate this issue.

MR. CALOMIRIS: Just one other point that worries me that nobody has brought up yet. Most financial crises that have ever happened that involved banks relate one way or another to real estate. And right now we're in a situation where, because of financial innovations and securitization and the migration of different kinds of bank lending outside of the banking system, we now have a banking system that has an unprecedented concentration of real estate risk. Large banks who have fifty percent of their loans in real estate; small banks about seventy-five percent.

That is, as one economist said, the business cycle is the housing cycle. So, you've this very systemic, sort of, characteristic. This is going to be coming back. We have to be thinking about this deeper problem that I don't have an answer to, which, I think, is all the more reason we need to be very careful about our prudential standards.

But another issue is so much of banking risk is systemic risk.

MR. WESSEL: There's a question over there. There's a mic coming behind you.

MR. WALLACH: Hi, I'm Phil Wallach from Brookings. Thanks for this discussion; it's been really great. I'm wondering if someone on the panel can try to put themselves in Congress's shoes and give a little bit more charitable interpretation of their reactions to all this.

We've heard about them shutting down all these tools that proved really successful and useful during the crisis and just comes off as just a mystery. So, what pressures do you think Congress was responding to in making those changes?

I'm especially interested in the change in the EESA to that Exchange Stabilization Fund with the money markets that was such a successful thing. But they didn't tell you that Exchange Stabilization for other purposes; sort of left it there for another day for uses to be determined.

What's going on in Congress's head? What kind of accountability are they looking to produce, and what should they be thinking about in those terms?

MR. WESSEL: Let me just respond to one thing on the Exchange Stabilization Fund. Every time the Treasury uses it for something, the Congress then outlaws it. I mean, they did that after Mexico. So, on that one I think we know it what it is. They don't like the idea that the Secretary of the Treasury has some kitty he can use to do something.

And remember, in the Mexico case the Secretary of the Treasury used it for something that Congress was asked to approve and couldn't get its act together. So, I think that's what -- but who wants to volunteer to be a Congressman and not kill himself? (Laughter)

MR. CALOMIRIS: I just want to say that I think --

MR. WESSEL: I'm looking forward to your campaign, Calomiris. (Laughter)

MR. CALOMIRIS: I don't want to put myself in the shoes of Congress, but I think that their actions speak very clearly. Even in the TARP legislation, they made very clear that they wanted to do something, and they insisted on something I felt was very counterproductive, which was to make sure that assistance to banks was viewed as profitable in terms of the right options. They had Warren Buffett envy -- that's not the purpose of bank assistance, is not to make profit.

So, why did they insist on that? People hated the banks. They still hate the banks. Any politician -- we saw this with Tim Geithner. Tim Geithner in March of 2009 came up with a pretty good idea about bank assistance that was related to some stuff Ricardo Caldera was writing about and I was writing about, and it lasted about two weeks. He sent that up the flag pole and people said, you must be kidding.

So, there are fundamental political realities that come down to things like hatred that politicians reacted to, that were very counterproductive.

MR. WESSEL: I think if Tim Geithner were here he would put it slightly differently. He would say that these rescues are inherently unfair. That in a financial crisis innocent bystanders get hurt, and in order to protect them you have to appear to reward the arsonist. Members of Congress, many of whom wouldn't understand a word that we've said here this morning to begin with, found that an overwhelming concern.

MR. CALOMIRIS: That's what I was trying to say.

MR. WESSEL: Right. (Laughter) I was suggesting that saying something's unfair doesn't require hatred.

MR. DUGAN: Yeah. I would add one other thing. So, there's huge, longstanding, populist strain that this taps into in the unfairness of banks being treated differently and preferentially. And it's an interesting thing because in other cultures it doesn't necessarily end up that way.

So, if you talked to the Japanese, for example, everything we've talked about, about having more self-insurance in terms of holding more liquidity, holding more capital, is designed to avoid being in a situation where the government has to use some extraordinary powers. But it also could mean you'd end up with less intermediation, less lending than is desirable.

And I think some other cultures will take the position that if you have a big problem that is when the government should step in. And if it requires some nationalization of companies, then that's what they'll do. And in the meantime, you have an ability to provide more intermediation to the system. And it's not obvious that our view is right, but there is a huge political component to it that is different here than it is in other places.

MR. DUFFIE: Further to that, I want to recommend Charles's book with Steve Haiber, which helps us understand how the attitude of legislatures towards their banking systems is very country-specific and historically dependent.

MR. WESSEL: Okay. There's three questions here. Let's take the two women here first, and we'll ask them both questions, and then we'll get to Paul.

MS. MATTHEWS: Thank you very much. Barbara Matthews, BCM International Regulatory Analytics. I'd like to congratulate Brookings and the panel for a breath of fresh air on the liquidity rules. I've been watching them with some alarm for the last four years. Having been in the trenches on the details over the last four years, not to mention previous incarnations of very helpful engagement to shed some light on how the frame work can operate or not operate as the case might be. I have two questions.

MR. WESSEL: Okay.

MS. MATTHEWS: I was surprised not to hear a key component of liquidity provision to banks not be mentioned. If you lived through this, and I read the transcripts from the crisis era, the central banks' swap lines did a great deal to provide liquidity to banks not technically domiciled or headquartered in the United States. So, when we're talking about the liquidity rules, it's an international negotiation even though the authority is domestically domiciled here.

MR. WESSEL: Right.

MS. MATTHEWS: So, not discussing the central bank swap lines, how they operate to provide stability and liquidity, I feel there's a missing component. Maybe we'll talk about it later, maybe you'll talk about it in --

MR. WESSEL: Okay. And your second question?

MR. CALOMIRIS: That's a good question.

MS. MATTHEWS: My second question is the international spillovers as well. And it's actually to Professor Calomiris specifically. You have a great deal of faith in the CoCo's as a provider of stability. I'm wondering why do you not believe it will accelerate liquidity pressures when the triggers get pulled no matter who pulls it, whether it's the private sector or the government?

MR. WESSEL: Okay. Could you pass the microphone the behind you? We'll take that question, and then we'll answer.

MS. BOESKY: Thank you. My name is Hayley Boesky. I'm at Bank of America. A large Bank which I think you've all heard of, but in any case thank you very much for organizing this. Thank you for inviting me here today.

Much of what you said was music to my ears. I think much of what you said really hit on some relevant, very important issues; of course, except for the twenty percent capital requirements and eleven percent leverage ratios. (Laughter)

But in any case, one of the things that I wanted to address was actually to the point that you raised earlier. I had actually the pleasure of sitting side-by-side with many people in this room and Tim Geithner during the crisis. Tim Geithner would say what you had suggested he'd say, but he also said something that I think is one of my favorite quotes: "If you want to know who caused the crisis look in the mirror."

So, in my view, and you said, that the banks appear to be favored in the bailouts or in the response to the crisis. But I think one of the things that I'm very concerned about is the impact of all this regulation on credit intermediation, and that was resonated through all of your comments.

And you look at numbers that came out today, almost no growth in this country. And I'm worried about, yes, Congress has a very short-term view, and there is a lot of anger towards the banks, but the education process wasn't there. And they were very concerned about addressing their constituents over a very short election cycle, if you will, and not really thinking about what the right responses might be over a much longer-term cycle, which has an impact over the generation.

So, I ask this very esteemed panel, how do we address that?

MR. WESSEL: Okay.

MS. BOESKY: Everyone raised great points today, but what can we do about it?

MR. WESSEL: Let me break these in three pieces. The first, Don, can you talk about -- so, during the crisis there was an innovation really where the Federal Reserve lent a lot of dollars to other central banks so that they could lend dollars to their banks, which were long-dollar assets and short-dollar supplies, or maybe I got it backwards. Anyways, how does that fit into all this and how important was it?

MR. KOHN: Well, I think it was very important, and it fits in because it gives dollars to the other central banks then to extend them through a lender of last resort, through a discount window kind of facility to their banks. The other central banks, the primary regulators, are in much better position to judge what the need of the bank is, whether it's solvent or insolvent, what the liquidity is, and judge the collateral that the bank is bringing.

So, I think, in a sense, the Fed allowed the other central banks to make those loans with dollars with being guaranteed by the other central bank. Where it got difficult was when it went beyond the industrial world. So, we did establish swap lines with, I think, four emerging market economies. And that was very hard to figure out which ones and to say no to some and yes to others.

I think it would be much better if the IMF were in a better position to make those judgments rather than the Federal Reserve.

MR. WESSEL: And just to be clear, nothing in Dodd-Frank limits that from happening in the future.

MR. KOHN: I don't think so.

MR. WESSEL: Right?

MR. KOHN: Not that I know of.

MR. WESSEL: And there was a, kind of, reverse stigma here. It was seen in the world as being, if the Fed would do a swap line with you that must mean you were a grown-up country, and if you had to go to the IMF, that means the Fed rejected you.

MR. KOHN: Oh, and the IMF, of course, there's -- countries don't like to go to the IMF because there all these conditions they go through, and the Fed didn't put conditions on these loans.

The IMF is trying to devise lines, and has devised lines, that don't have that kind of conditionality, but there's still a reluctance to go to the IMF. So, I think the IMF is still working on its role, but I --

MR. CALOMIRIS: The Fed loans were collateralized.

MR. KOHN: By the other central bank, right.

MR. CALOMIRIS: It wasn't an unconditional loan in that sense.

MR. KOHN: Right. It required collateral, but it wasn't conditioned on behavior. The behavior of the banks, right.

MR. CALOMIRIS: Right.

MR. WESSEL: Right. John, you've dealt with Congress a lot, so I think what Hayley is asking -- I'm going to rephrase her question. So, we know one way to have long-run planning in government. That's, kind of, the Chinese model. If you don't have to get reelected, it's pretty easy to take the long run. It may not be in your peoples' interest, but you can take the long run's perspective.

What observations do you have about how our democracy, how our Congress could do better, at dealing with these tradeoffs between the anger, the people, and the long-term interests of the economy and people? Twenty-five words or less.

MR. DUGAN: Oh, boy. I think there has to be a certain amount of patience, and respecting independence of agencies, and I think they did make an important distinction. They said, we really don't like helping individual, open banks that are in trouble, and they drew that line.

I think there was basically consensus on that point provided you had to tools to deal with and resolve. And I think what they ended up doing in Title 2 as added by later interpretations to create the single point of entry thing is a really powerful, good thing that they ended up with.

And so, there are some places they went that I think they went too far. That is the inevitable political response in our country to this that I think you're going to have to expect. But there are places that they did some quite responsible things. So, it's always going to be a mix.

I think the thing that I find most troubling is usually you have that period, intense heat, and then over time things cool off and you can do some technical amendments and make some adjustments and changes, and we're seeing none of that.

MR. WESSEL: Right.

MR. DUGAN: And I think that's problematic because this is so big, so unwieldy, so many issues. You'd like to be able to have a credible debate to make some adjustments and to fix things. And there'd be some things that they got wrong or just not having --

MR. WESSEL: Right. Not limited to Dodd-Frank.

MR. DUGAN: Correct.

MR. WESSEL: And Charlie, the question about are CoCo's just a trigger for -- why don't you explain what CoCo's are first, and then --

MR. CALOMIRIS: I remember the question. So, first I want to acknowledge that Mark Flannery really, in my view, was the first person to articulate these really good ideas in reaction early to this crisis.

And I think they key point, at least of my incarnation of this idea, is that you don't want to have bail-in CoCo's, which have the problem you're talking about. You want to have market triggered, very high equity ratio triggers so that when a bank is contemplating this they can avoid it. They can avoid the triggering by doing voluntary issues of equity into the market, so that this becomes like a thermostat that just keeps that equity ratio higher, and the CoCo's never convert. They really become, like, a senior debt instrument.

Also, I think at Goldman Sachs some people -- Steve might want to talk about it -- also developed similar ideas a few years ago. So, I think there's a fair amount of agreement that as long as you structure these with a sufficiently high trigger and in a dilutive way that encourages the banks to be proactive in responding to them. What they really achieve is just keeping that market value ratio high.

MR. WESSEL: Mark?

MR. FLANNERY: Yeah, I think a lot of the things we've talked about today almost exclusively are what happens when things have gone wrong, and we've gotten to a potentially insolvent situation. And Don's comment that -- at that point it's very hard to tell who's solvent. I think that's a point that we got to deal with, and so the response I've come up with -- I think it's really important, I agree with Charlie in this, that we just don't get to that point.

What you have to do is you have to have a mechanism at a relatively high capital ratio where the firm is clearly solvent, and you got to have a mechanism for keeping the firm more than adequately capitalized in economic terms.

There are a range of questions about market value and anticipations, but I think as long as we stay away from two percent market capital, twelve percent book capital, what the hell does it all mean, then we're in much better shape. And the problem needs to be addressed way before all the things that we've talked about in terms of last-minute lending.

MR. WESSEL: Paul Saltzman, why don't you wait for the mic.

MR. SALTZMAN: Sure. Paul Saltzman from The Clearing House. I was just struck by Charlie's, what I thought, was a very profound statement at the outset that no one really seemed to comment on. Charlie, if I get your observation correctly, I think you said something to the effect that liquidity risks are really manifestation of insolvency risks.

MR. CALOMIRIS: Correct.

MR. SALTZMAN: And I just wanted to question that a little bit. Are you really saying that there could be no exogenous liquidity crisis without some insolvency crisis? For example, 9/11, Y2K. I mean, those were examples where the Fed stepped up and we had no insolvency. Activity restrictions, Volcker Rule, proprietary trading, derisking, deleveraging.

I mean, you could have a host of exogenous circumstances that create liquidity pressures independent of anyone's triggering insolvency. Those may trigger an insolvency, which again creates whatever the opposite of virtuous circle is, but I was just curious as to -- could you, maybe, restate your original thought and then, maybe, get some commentary whether people agree with that because I thought that was pretty profound.

MR. CALOMIRIS: I want to be careful about definitions here, but yes, I'm going stick with my comment which is that illiquidity is always, in every crisis I'm aware of, is a manifestation of what amounts to a loss of confidence having to do with solvency. However, some of the shocks that you're talking about can become insolvency related.

So, let's take the most obvious place where these problems you're alluding to will come up, and that's in emerging markets. So, let's take, for example, the Russian crisis and its effect on Brazil in 1998 and early 1999. So, you could say, why did Brazilian sovereign debts, dollar value sovereign debts, decline so much in value in the wake of the Russian crisis? What kind of shock was that?

And I would say, well, that was a problem where the same intermediaries that were holding the Russian bonds were also holding the Brazilian bonds. They got stuck with a solvency problem. Their solvency problem forced them to have to liquidate some assets, and the only ones they could liquidate were the Brazilian ones. So, now you have a massive flow of Brazilian debt onto the market.

From the standpoint of innocent bystanders who are holding Brazilian sovereign debt that was an exogenous shock to their solvency, and it was coming from a solvency problem of the intermediary that was holding the two. But my point is it always comes down some market value change of underlying securities that have ramifications on peoples' solvency. Even though the initial shock can be something that sounds -- there was no shock to Brazilian solvency, and yet there was a solvency problem relating to holding Brazilian -- I don't know if that was helpful, but that's an example.

MR. BAILY: That sounds like liquidity, not solvency.

MR. CALOMIRIS: No --

MR. WESSEL: There wasn't any question about Brazil's solvency.

MR. CALOMIRIS: That's my point. But the problem -- yes.

MR. WESSEL: So, I thought it was a question of externalities.

MR. SALTZMAN: Right.

MR. WESSEL: Then why should -- if just because my bank happens to begin with the letter "C", and Citigroup begins with the letter "C", and there's doubts about Citi's solvency, do -- I thought the role of the central bank was if people get confused and they go to the wrong bank of "C", then the Fed should lend me money. But there's nothing I can do as the other bank to build my reputation in the marketplace, my solvency to avoid that. I'm being affected by the insolvency of Citi.

MR. CALOMIRIS: But it doesn't really work out that way. Even if you looked at the asset-backed commercial paper crisis in August 2007, the characteristics of only about forty percent of the commercial paper was forced not to roll over, and it had identifiable characteristics in the market.

The real estate betas of banks had a lot to say about which banks suffered the most. Banks didn't all suffer the same declines in their equity values. JP Morgan Chase didn't suffer the same decline as Citibank. So, it's not all impossible to figure out. There were identifiable characteristics of banks that were associated with relative differences.

In fact, I think it's a really important point that Rene Stulz and others made, that if you look at the cross-section of which banks were hit in 2008, it looked a lot like the cross-section of 1998. In other words, there seems to be risk management deficiencies that were bank-specific that the market knew about.

MR. DUGAN: I do think there were instances of things that markets could have been overreacting to perceptions of insolvency that didn't occur. The one that sticks out in my mind is Wachovia.

There clearly were -- it was a really open question; tremendous amount of uncertainty whether we needed to resolve them that weekend. There was a feeling we did. There were worries about their liquidity although they had $100 billion in liquidity on their balance sheet, and it was all about a perception about whether run -- government acts thought they needed to do an assisted transaction. Turns out Bitter comes in and says, you know what, we think it's a really good franchise.

MR. WESSEL: It was a little more complicated than that, but, yeah.

MR. DUGAN: Yeah, okay. I get it. I mean, you're absolutely right. But I think their and our examiners definitely had this feeling that it was way exaggerated as to what their actual financial health was, and in the end it's proved to be a quite lucrative transaction for the acquirer. My point is it's not such a clean line.

MR. WESSEL: Right. I think with that we'll end it. I want to thank the panel for what was really an interesting conversation. (Applause) There's coffee outside, and we reconvene here for the next panel at 11 o'clock, so that's 10. minutes.

(Recess)

MR. ELLIOTT: Okay, everybody. You can now just come on in. I've got to tell you. I wish people always obeyed me like that. I appreciate it. Okay. Thank you, all.

And I'd say, I thought that was a terrific panel, so congratulations to David, and all of the Panelists. So it gives us a bit of a high hurdle here for the second Panel.

What we are going to be focused on in Panel Two is that while there's broad agreement that we need the Fed or other central banks as lender of last resort, I think there's also quite broad agreement; we don't want the lender of last resort function to be used all that often. And, therefore, we need to make sure that banks and, perhaps, other important financial institutions, maintain sufficient liquidity, and so this Panel will focus on the rules intended to ensure that there is adequate liquidity at the banks.

So we have a great Panel of experts to explain and debate these issues, you have bios in each of your packets, so I'll only very briefly introduce each one. After I walk through a few introductory slides, because there is a chance some of you don't actually already know these rules, though that’s a pretty knowledgeable crowd, I will say, from people I know here.

So I'll go through a few introductory slides, and then we'll start Mark E. Van Der Weide. He is a Deputy Director in the Division of Banking Supervision and Regulation at the Fed. He will be followed by Marc Saidenberg, who is Principal in Ernst & Young Financial Services Office, and he was previously at the Fed for 15 years. Paul Ackerman will follow. He is Treasurer of Wells Fargo, a small bank you may have heard of. And finally, we'll end with Adam Gilbert, who is a Managing Director at JPMorgan, who focuses on Regulatory Policy.

Thank you, to each of the panelists for joining us. So I'm going to just briefly introduce the topic, and then after I finish we'll bring the panelists up on the stage and have them go through one by one from the podium. So I think we -- it's pretty clear at this point, particularly after the financial crisis, that liquidity does matter.

Banks have always been vulnerable to runs, because they make multiyear loans which are illiquid, and they do it using deposit funding. And we've had, as banks have expanded their activities, and as non-banks have joined in to similar types of activities, it's expanded beyond just that narrow issue, but you still have long-term loans or other important assets, funded by short-term funding.

So lender-of-last-resort function is intended to protect against runs like that, but we do want banks to handle most of the liquidity needs by themselves, because we don't want the lender-of-last-resort function being called on very much, and we want to reduce the problems that are caused by fire sales prior to the lender of last resort stepping in.

It's also clear that banks were too illiquid prior to the last financial crisis. Liquidity regulation was really pretty loose, and there was no equivalent of the Basel capital standards, which created more quantitative globally agreed standards. Liquidity seemed abundant and it felt like it would always be abundant, that there had been a C-Change from earlier years, and banks, therefore, you can argue reasonably, sensibly, decided not to increase their expenses in order to improve their liquidity.

Because liquidity does cost money, you either give up some investment income by shortening your assets, or you pay more for your liabilities in order to get longer term liabilities, since there's usually yield curve where longer-term assets and liabilities have higher yields than short-term ones. So to deal with the illiquidity problems that we have observed, certain new liquidity rules are being put in place and they’ve been foreshadowed a bit on the first Panel, but I just wanted to touch on them for those of you who haven’t followed this as closely.

There's a liquidity coverage ratio or LCR which is part of the Basel III Agreement, that’s the global agreement on capital liquidity standards; and that will be effective as of 2015. There's also something called the net stable funding ratio, and I'll tell you more about these two, that’s also part of Basel III and comes into effect in 2018.

In addition, there are liquidity stress tests, akin to the capital stress test that we have now, that the regulators are applying, and in general there's going to be more careful liquidity supervision in addition to these quantitative tests.

So the liquidity coverage ratio, as I view it, is a stylized stress test. You basically postulate a 30-day period of intense liquidity pressures in the financial markets, and then the quantitative formulas have you try to estimate whether banks would have enough cash to last through the 30 days. So you assume that on the one side funding sources will dry up to some extent, so some of your deposits, and even more of your wholesale funding will go away, and that the assets you were planning to sell to raise cash, won't be worth as much in a crisis, so that you'll have a haircut to their values.

On the other side, we assume that there will be more needs for cash than in normal times. Your corporations will come and draw down on their credit lines, for example. And so the idea is, you need to have at least 100 percent of the required funding in order to pass this. The net stable funding ratio is intended to tackle a somewhat different issue. So the LCR is the stylized stress test, it looks at an emergency situation.

The NSFR is intended to deal with longer-term structural issues where, maybe, some banks have relied too much on short-term funding for their long-term assets, and have created a situation in which problems could occur. So there you look at the available stable funding, so you essentially say things like deposits from retail customers are pretty stable so you want to treat them as pretty valuable, on the other hand, some other sources are likely to away to some extent, so you give them a lesser credit.

And on the other side, you'll look at what portions of the credit lines might be drawn down. You look at haircuts on securities. So, again, a little bit like the LCR, but it's trying to look on a longer-term basis for that. So those are -- LCR and NSFR are terms you are going to be hearing in this panel.

And at this point we can put the lights back up again, and let's bring up the panel members, and we'll go through one-by-one. So if you could all come up front. And I'll just ask that you each speak from the podium when it's your turn; starting with

Mark Van Der Weide.

MR. VAN DER WEIDE: Thanks, Doug. And thanks for the invitation to participate in the conference. I thought in my remarks today I would first offer some views on why regulation of banks makes good policy sense as a general matter, and then make some comments about the specific framework of bank liquidity regulation that the Fed and global regulators have developed in the wake of the financial crisis.

I apologize at the outset, the extent of the first piece of my presentation treads on ground that might have been well-trod in the first panel, but I find it hard not to start from first principles.

Before I say anymore, let me make clear that remarks today are my own, and they may or may not be articulate, they may or may not edifying, and they may or may reflect the views of any Governor of the Federal Reserve system.

Now let me start with a metaphysical question of why we need bank liquidity regulation. Following the hallowed traditions of micro economic theory I think this question roughly translates into, what is the market failure here that we are trying to solve? Or more specifically, why can't we rely on each bank to self-insure against its own liquidity risk? Or failing that, why can't we rely on interbank markets, or on the private sector more broadly, to provide needed liquidity to solve the illiquid banks?

As Governor Stein explained in an excellent speech on Bank Liquidity Regulation last year, the business -- and as Doug explained this morning, five minutes ago, the business of banking involves maturity transformation by definition, and therefore banks are inevitably exposed to various forms of run risk.

In response to shocks, the relatively fragile funding structures of banks can result in rapid cash outflows, and will leave them to fire sell assets, to fail, or both. And fire sales and bank failures can have substantial negative effects on other financial firms and on the economy as a whole.

So banks will naturally keep on hand some amount of liquid assets, to deal with potential unanticipated cash outflows; but banks are unlikely to hold the socially optimal amount of liquid assets, because while they bear all the costs for holding those liquid assets, in terms of reduced profitability, they do not capture all the social benefits, in terms of enhanced financial stability, and lower costs to taxpayers in the event of failure.

It's also not clear that we should substantially rely on interbank markets, interbank funding markets to ameliorate bank runs. Most fundamentally, it seems imprudent for policymakers to assume that other banks will be willing and able to lend to a solvent but illiquid bank that's under liquidity pressure. Information asymmetries are part of the problem. Healthy banks are often loathe to increase their lending to a stressed bank because of its opacity. It's hard for a healthy bank to determine whether the stressed bank is solvent, or illiquid, or insolvent.

The second problem is that the financial conditions of large banks are strongly correlated with each other, and with the condition of the broader financial system. And this correlation has been increasing over the past decade, as banks have gotten larger, more inter-state within the U.S., more international, more interconnected with each other and more internally diversified as the Glass-Steagall walls have come down.

In other words, when a non-large bank is stressed, it's often the case that all or almost all other large banks are stressed. And part for these reasons the interbank funding markets in 2007 and 2008 were not exactly a material source of strength for stressed banks.

If you agree there's a market failure here, it seems you have two principal options for addressing this failure, simplifying a bit. The first option is central bank lending to solvent but illiquid banks. The second option is bank regulation. These options are not of course mutually exclusive. Central bank lender-of-last-resort facility should clearly be part of the solution. Some have argued that they might be the complete solution, according to this view, if you assume a well-functioning regulatory capital regime for banks, the central bank can always avert fire sales, and bank failures ex-post, simply by serving as a lender of last resort.

But I believe there are good reasons to not rely exclusively on central bank lending, to address bank illiquidity, and good reasons to think that social welfare can be increased by attempting to conserve on use of the lender of last resort. And I'll give three reasons why. First, we can't ignore the fact that there are legal limits in the United States on who can borrow from the Fed. Most notably the Fed's firm specific discount window is only available to depository institutions.

It's not available to broker-dealers, to non-bank lenders, to asset-backed commercial paper conduits, to money market mutual funds, et cetera. And Section 23(a) of the Federal Reserve Act prevents the depository institutions from lending any of those -- credit from the Fed to affiliates.

Second, viewed ex-ante, the existence of Central Bank lender of last resort facilities, creates obviously moral hazard, incenting banks to take on more risks than they otherwise would. Third, viewed ex-post, Central Bank lending can create risks for taxpayers. Central banks are smart, but distinguishing an insolvent bank from an illiquid but solvent bank is challenging, particularly in a financial crisis.

And as we say in the crisis, insolvency is a leading cause of illiquidity, and illiquidity is often a leading indicator of insolvency. For all these reasons I think that liquidity regulation is good idea, and that the Basel III Liquidity Rules are an important part of the Global Regulatory Reform Program.

The Basel Liquidity Rules for global banks do have and should have both microprudential and macroprudential purposes. The principal microprudential of LCR is to reduce the probability of a banking firm's liquidity insolvency over a 30-day time horizon, through a self-insurance regime, of holding enough high-quality liquid assets, HQLA, to meet short-term stressed funding needs.

The principal micro-credential purpose of the NSFR is to ensure that global firms have a stable funding profile over the longer one-year time horizon. Another primarily microprudential purpose of the Basel III Liquidity Rules is to create a level, global playing field across national jurisdictions. The Basel Capital Rules, create a level global playing for bank leverage, the Basel Liquidity Rules create a level playing field for bank maturity transformation and liquidity risk.

But the Basel III Liquidity Rules also help accomplish macroprudential goals, such as improving financial stability but reducing potential fire sale externalities, and reducing the probability of SIFI failures.

I thought I would move next to a brief discussion of the limits of the Basel III Liquidity Rules, although these rules are critical to the financial stability efforts of global regulators, it's important to recognize that these rules do not ensure that there will never again be a liquidity failure of a large, global financial institution. They should help make such a failure much less likely, but they can't reduce the run-risk of a bank to zero.

And it's important that we understand what these global rules don't address. And I have eight things I wanted to mention. First, the rules only apply to internationally active banks; they don't apply to broker dealers, to non-bank lenders, to asset-backed commercial paper conduits, the money market mutual funds, and other aspects of the shadow-banking system.

Second the rules don't address maturity mismatch inside the LCRs 30-day window, or between the LCR's 30-day line, and the NSFR's one-year line. Third, the rules require a global bank to have liquidity adequacy on a consolidated basis, but they don't ensure liquidity adequacy in each legal entity or branch of the firm. Fourth, the rules don't address potential currency mismatches. Fifth, the rules impose, effectively, no penalty on matched books of repos and other kinds of securities financing transactions.

Sixth, the rules include in the definition of what counts as a high-quality liquid asset, HQLA, some assets of pretty limited liquidity, including covered bonds, municipal bonds, and private-label mortgage-backed securities. Seventh, the transition path for the global rules, which were effectively born in 2010, is a fairly slower transition path. Under the international agreement the LCR phases in from 2015 to 2019, and NSFR becomes effective in 2018. And finally, the rules treat the stability of central bank lending rather favorably given the Fed's current discount window policies.

I list off all these limitations not to implicitly criticize the rules that Marc Saidenberg created, but rather to help remind us of what liquidity risks in the global financial system the Basel Rules currently cover, and what they don't cover. So what should be done about some of these limitations? The Fed and global regulators have a lot of work in train in the liquidity risk mitigation space.

And I thought I would just close by touching on a few strands of that work. First, the Basel recent proposed some amendments to the NSFR, these amendments are fairly wide-ranging, but they include provisions that will address two of the limitations that I just mentioned.

The proposal would require some amount of stable funding, for certain short-term extensions of credit by banks to non-bank financial firms; thus introducing a meaningful regulatory charge on some forms of the Securities Financing transaction-matched books. The proposal also withdraws six-month maturity line for certain purposes, thus reducing, somewhat, the cliff effects from the LCR's 30-day line, and NSFR one-year line.

Second, the Fed and the other U.S. banking agencies, and their proposed rule to implement the LCR in the United States, decided to go super-equivalent to the Basel standards, in a number of ways. The proposal accelerated the American LCR transition path so that the largest U.S. banking firms would have to be in compliance by 2017 instead of 2019. The acceleration reflected the substantial improvements in the liquidity position of U.S. banking firms, and the regulatory desire to prevent any backsliding in the meantime.

The proposal also excluded from the HQLA definition certain relatively illiquidity assets that count ass HQLA in the Basel standard, namely the ones I mentioned before, covered bonds, muni bonds and private label MBS. Moreover, the proposal addressed maturity mismatches inside the 30-day window for the largest U.S. banks.

And finally, the proposal did not permit U.S. banking firms to treat standard overnight discount lender -- lending by the Fed as stable throughout the entire 30-day window of the LCR. The public comment period for the U.S. LCR and NPR has ended, and staff is analyzing comments.

Third, numerous Fed principals including Chair Yellen, and Governors Tarullo and Stein, have indicated that addressing residual risk from short-term wholesale funding markets, remain one of our principal unaccomplished financial reform goals. As Governor Tarullo has indicated, the Board is considering a variety of policy actions to address these risks. Policy actions include capital surcharges for SIFIs tied to their short-term wholesale funding usage, further changes to the capital or liquidity rules applicable to banking firms, and minimum margin requirements for securities financing transactions.

Fourth, we need to admit that we can't intelligently regulate every liquidity risk faced by global banks, there remains and always will remain a critical role for firm-specific liquidity risk supervision. Supervision of bank liquidity risk can help fill in the understood gaps and weaknesses of the regulatory regime, and just as importantly, can help mitigate some of the idiosyncratic liquidity risks that individuals, firms, face that no regulatory regime of general applicability can efficiently cover.

In addition, supervision is our first line of monitoring a defense against attempts by banks to arbitrage around the new rules. Let me close by acknowledging that we need to recognize that the science of liquidity regulation is new, it's new to regulators, it's new to banks, it's new to the financial markets. As with any fledgling science, we are certain to go down a few unproductive paths, as we move forward. We will have our Ptolemaic epicycles, and our Lamarckian evolutionary cul-de-sacs along the way.

We need to attend carefully to the impact of the new rules, on banks, markets and the economy in good times, and in stressed times, and you need to be willing to change the rules in the face of new learning. Thanks again, for the opportunity to participate.

MR. SAIDENBERG: Good morning. Thanks, Doug. And thank you, to Brookings for inviting me to participate today. I, frequently in the situation, would start my comments by saying something about perspectives and the insider, I no longer get credit for doing that anymore, and notwithstanding Mark's comments. So I'll just say that I wanted to offer a couple of perspectives from an active participant in the development of liquidity regulation.

I want to take just a minute to just sort of look back, at least I think it is looking back to the development of the LCR and, in particular, and what some -- in some ways what we can and cannot infer from that. And then spend a couple of minutes sort of looking ahead. I was tempted to start my comments today as sort of in defense of the idiots, but I actually think Mark has done real an incredible job of defending the idiots, and so we can continue that conversation later. I think it's -- that was a compliment, that wasn't --

MR. VAN DER WEIDE: I wasn't sure --

MR. SAIDENBERG: Sorry. Just to be clear, that was intended to be a compliment to Mark, not anything -- should not have been inferred as something else -- being one of the former idiots -- that was my point.

MR. VAN DER WEIDE: Uh-huh, I sense some self-flagellation --

MR. SAIDENBERG: Yeah. So that was -- anyway. I think it's helpful to reflect on the objectives in the development of liquidity regulation within the Basel community and outside. And I say objectives, plural, not just because, as Doug and others pointed out, there are multiple objectives about reducing the risk of the externalities associated with the failure of a large, systemically important institution, as well the fire sale risks.

But it won't surprise you all that when you get together representatives from 26 different jurisdictions, by the time we were done, of over 45 agencies and other onlookers, that describing the single set of agreed-upon objectives is a little bit challenging. I will say that trying to navigate that collectively, I think it's fair to say the Basel community is notwithstanding -- or inclusive of the observations that Mark had about the limits of the Basel Agreement.

I think it could, sort of, be seen as coalescing around a view that --

requiring firms to have ex-ante self-insurance, not for all risks, but risks up to a degree without reliance on public sector support, for the reasons that have been described of mitigating the risks of failure for the mitigating the run -- the spillovers associated with fire sale, is sort of where the Committee coalesced.

I think one of the challenges, as I look back though, in relation to the subject of the conference today, is that that design has led some people to infer that the intent was to never have banks rely on access to, specifically the discount window, or more broadly, public sector liquidity support. And that's where I think there's a giant leap from saying something about a policy design, and ex-ante incentives, and then to describe the LCR as being a depiction of how behaviors, how different actors in the economy should behave conditional in a crisis.

So, again, I think the point of what I would like people to take away from this, is that with respect to access to public sector support, and very much in relation to the first Panel's discussion, I don't believe liquidity regulations, even with their limited recognition, or non-recognition of public sector support, should be seen as a statement of, there is no role for public sector support, there is no role for discount window, or the lender of last resort. It's a distinction that's drawn between the ex-ante incentives in terms of designing a public policy, and then how you expect firms and the public sector to behave.

So let me change gears a little and say from my perspective in looking ahead, so where are we? Clearly, as Mark outlined, efforts to address those two core objectives of the spillovers associated with the distress of a large, systemically important institution, and the fire sale risks still exists in terms of the policy objectives, the discussions around and the continued discussion around the net stable funding ratio, and short-term policy of funding more broadly, are sort of focused on that.

I think though what I would observe is that there is another current running through the policy debate. Some of which came up this morning, and some of which I think is acute. If you get to spend time watching the Basel committee, and even the U.S. regulatory process, is there is a perspective on, what are the tradeoffs between, sometimes it's characterized as complexity versus simplicity, other times it's characterized as risk sensitivity versus something else. I'm not sure what the other side of that is.

So, I choose to sort of split the proverbial descriptions, and say it is a tradeoff between trying to be risk sensitive, and trying to have something that is simple. And where one thinks you want to fall in that balance is very much dependent on a range of factors, including how well one thinks you can design a risk-sensitive framework. What you think the unintended and intended consequences of a risk-sensitive framework versus one that is simpler and may create unintended distortions in the markets.

And we were talking last night, and earlier this morning, and say to characterize, regulation is intended to distort markets, consistent with Mark's point, the question is, are you creating the intended distortions, or are you creating some of the unintended distortions? So, having said that, I think there's a real challenge when it gets to liquidity regulation that funding markets, this is not rocket science, or terribly innovative, funding markets tend to be very complicated, and have a lot more activity going on in them, than I think some of the simple policy tools would give them credit. So I think that the wave of simplicity particularly within the Basel community but elsewhere has led to an affinity for some of the simple solutions to addressing liquidity regulation. Without, I think the appreciation of how -- some of the simple solutions, may have unintended consequences. They may have some of the intended consequences, but they will also be associated with some of the unintended consequences.

So what's the response to that, because what I just said is sort of true of almost any policy debate? And so I think one effort that's going on now that we, at Ernst & Young, are involved in, and actually with Clearing House, and a number of institutions that are represented in the room today, is trying to deepen the shared understanding of the activities that are going on within wholesale funding markets, so you could have an informed dialogue around the policy debate.

I mean, I would characterize generally, if you are going to have a policy debate, there is, broadly speaking, there's two views you could have. One is that you have participants who have different objectives, that's certainly, you know, a possibility or different views about how to solve it for those objectives, for the difference of objectives.

The other is, there's a perception gap about to what degree you have addressed the objectives you have achieved. And so in that way, I think having efforts to deepen the understanding of the activities that are going on in a given market is a valuable one. The survey that we've been conducting and have shared the results with the Federal Reserve and others is an effort to enhance the array of the data collection that is there, and get an appreciation of the nature of the activity in wholesale funding markets; it's going to influence the types of risks that we described.

So if you consider the world is not as some would characterize it, simply, the wholesale funding world is not simply made up of financing inventory and matchbook financing, and that's the end of the world, there are other activities, that are being conducted, quite a few activities being conducted, within wholesale funding markets, where, if you can deepen your understanding of what those activities are, the nature of the risk of those activities in terms of their objectives, but then also how the risk has been mitigated.

So the information of the data that are being collected relate to the business purpose, what's the nature of the type of activity, but then importantly also, what's the nature of collateral that's being financed through different channels, and what's the tenure of that collateral. And I think if we could get to a point where there is a shared understanding of the activity, then at least we could narrow the debate to, we have a different view about what the objectives are.

And that would be a better situation, I think, for all of us, rather than a fundamentally different idea, of what is the world we face, or how far have we gone. So let me stop there, and turn it back to, I think, Adam.

MR. ACKERMAN: Well, good morning. I'm happy to be here and I'm a bit humbled, there's a lot of great minds in the room, and I'm sure I'm not one of them. I hope that with respect to liquidity policy, I can bring a little bit of a unique perspective to this discussion, because I'm an active practitioner. If I asked for a show of hands of people in the room that have responsibility for a Fed account, and knew how much was in it last night, and knew how much is supposed to be in it tonight, my guess is, mine might be the only one.

So I think I bring that. The other perspective I might bring after listening to the panels today, I guarantee not to use words that have more than three syllables, because as bankers we just don't understand that. So first, let me say that even though I'm from a bank, and a GSIB at that, it might surprise you to understand that I'm a strong proponent of banks having an ample amount of liquidity.

And I think this was informed by having a ringside seat and being responsible for managing the liquidity of Wachovia, right during the height of the crisis and from the day that we announced the merger with Wachovia, and it was simply astounding to see the amount of liquidity that was consumed in a short period of time, and astounding to see what we had to do to stop that.

So I come with a healthy respect of runs. I even benefit lately by that respect, even when we had the debt policy, or this debt ceiling debates in the fall and in the spring, we had minor, minor market disruptions, but it was really good to have a huge balance at the Federal Reserve, maybe that's my -- finally, my internalization of Charlie's admonition that cash has some value. So I am -- I am a strong proponent of liquidity.

But having said that, I think there are some things about liquidity regulation that we can do better, and I'm going to talk about several of those. First, I think there are some things that are proposed in the LCR that really need to be fixed, and I'm hopeful that in the revision that's going on now, we will address those.

Second, we absolutely have to make conscious decisions to keep the process simple, and then, finally, I think I would agree with Mark that we have not done a good cost benefit analysis. There is a cost to having too high a stock of liquidity and we have not explicitly considered the tradeoffs.

So, let me say a bit about some of the current issues I see in the proposed LCR, I'm just going to focus on a couple. The first is a treatment of the way municipal deposits, collateralized municipal deposits, are handled, that has the effect of requiring high-quality liquid assets to be held for the entire amount of the deposit, rendering it useless. The other part of that, kind of, another element of municipal finances that municipal securities are assigned no liquidity value, and so as a sector, then municipal finance, does create strong disincentives for any bank to be in the business of financing municipalities.

So I think that is one thing that has to be fixed, and it simply doesn't reflect the behavior of either the deposits or the assets during the crisis. And I'm probably wasting my breath on this next point, but I just have to say that that the limitation on agency securities in HQLA is just not based on observed market data. And the limit really should be eliminated.

So I think that through the Clearing House and others, industry has done a pretty good job of presenting a limited number of things that we think are important to be changed, and I'm sure Mark will be very attentive to each and every one of those.

So my second point is that the administration of the LCR is becoming increasingly complex, and Marc, if I understood you correctly, described it as simple. As a practitioner I'm going to take a different view of that. Let me give you some examples of that. So every day Wells Fargo has to submit 20,000 data elements on liquidity to the Federal Reserve, 20,000. There is a new requirement that we think is coming out in January that our estimate is that it will increase by four to five times, okay.

That’s a lot of data to be pushing through. And while some of the data elements absolutely need to be evaluated on a daily basis, big security settlement flows, things like that, there's a lot of things that really just don't need daily attention. And I think another example is this, kind of the increasing complexity of the rules, so one test that we have to apply to determine operational deposits, requires that we evaluate eight separate criteria for each deposit, and then try to quantify those.

And while I think you could argue that there's, you know, actual correctness to all those criteria, at the end of the day it's important to realize that we are trying to estimate customer behavior, and that’s always going to contain some degree of imprecision. So I think these a false precision that we are trying to apply in the rules, and my point of this is not that I object to the work or the cost, it's that this process is growing increasingly complex, without any certainty that the complexity increases its efficacy, and I think from my experience, I'm inclined to argue just the opposite, that when there's the presence of a lot of complexity, efficacy is actually decreased.

And then my final point is that from an outside perspective as regulations like this are written, you can see that when the authors are faced with the decisions to make a balanced choice or, perhaps, a conservative choice, it's easy to take the conservative choice, I understand that, but what I think is not explicitly considered in this process is the accumulative effect of this -- of all these decisions.

So the LCR has a number of things that are -- a number of conservative choices that are pretty easy to identify, the assumption that all outflows occur on day one, limitations, arbitrary limitations on the amount of contractual inflows that can be counted. Zero liquidity value ascribed to municipal securities, as I described, and an asymmetric -- is that four cylinders -- four syllables, I may have just violated my rule.

MR. GILBERT: You can't use it.

MR. ACKERMAN: I can't use asymmetric -- the unequal treatment of operational -- including operational outflows but not any inflows. Now, I was kind of relieved to hear that Mark Flannery can't find a serious study of this. I haven't found one. I found some that are online that seem to suggest that there really is no cost to access liquidity being held by the banks, and as a practitioner I can assure you that's just not the case.

So, I think in conclusion, I think we are on the right track. We have to have some liquidity regulation -- it needs to be strong regulation. I think we may be heading down -- what cul-de-sac were we in?

MR. ELLIOTT: Lamarckian.

MR. ACKERMAN: The Lamarckian cul-de-sac, I'm just quoting him -- those are not my words -- we may be in the Lamarckian cul-de-sac at the moment, in some of these areas, and I think we have an opportunity to be on a better track by addressing some of these issues. Thank you.

MR. GILBERT: Thank you. Thank you, to Brookings for having me, and for the Clearing House for sponsoring this terrific event. I want to say at the outset my remarks do not necessarily reflect those of Mark Van Der Weide, or JPMorgan Chase for that matter.

What I wanted to do was just briefly review that a lot has been accomplished in the space, that more is being done, but in response to some remarks David Wessel gave us last night, talk about some things that I think should be considered, and then I think reiterate some of the points that Paul made, at least, thematically about there are implications. So lot's been accomplished, capital has doubled or more so over the last several years and it's going higher. The CCAR process is firmly in place and it is one that allows the Federal Reserve leverage quite an extensive stress-testing mechanism to ensure that banks' capital does go northward in direction, not southward.

Leverage has sharply reduced in the system, probably by a third by many estimates, and that's welcome. Increased liquidity, I was hoping Charlie was still here, I don't see him, but he threw out a 20 percent number for his reserves at the Fed. Well, he may be interested to know that in -- in case of our firm -- we have over $500 billion of high-quality liquid assets as defined in Basel, and that's on a balance sheet of about 2.4 trillion, so roughly about his 20 percent.

Capital and liquidity are both stressed. Internally I think that's an important part of the supervisory toolkit to encourage banks to do internal stresses as well as the well known external stress of CCAR. Many are probably not familiar, Mark, with CLAR, but that, too, is an important stress mechanism, it's evolving but forcing banks to engage in a very structured liquidity stress exercise.

So more is being done. Structural liquidity, Mark, you lamented a little bit about the 2018 implementation, for example, of NSFR, an important structural liquidity measure, but you'll be happy to know that many banks are already compliant or planning to get there a lot in advance, and that's a good thing.

It's part of the overall toolkit and it's in contemplation, but some type of debt shield in the context of orderly liquidation to facilitate single point of entry resolution, is probably in the works, both domestically and globally, and that will aid us in the overall amount of resources that are available to facilitate a resolution of a -- financial institutions should get in trouble.

Intraday credit in the repartee repo market, which is by a $1 trillion, we've imposed intraday limits here, and so this is also a welcomed development. So we are becoming very fortress-like, we, the industry as a whole, and it's increasingly hard to see how banks won't be in a good position to deal with the next shock or severe stress.

But more could be considered, so five examples of things that, Mark, you and others might want to think about, if you're not already. You mentioned standardizing haircuts, that's something that we think would make sense, and I think there's already work, that the FSB has done some work in that area and that could be expanded.

Introducing an interim tenor measure between 30 and 365 days we do that internally and Paul, I'm sensitive to the complexity concerns you have, these rules are complex, even though intended to be relatively simple, but an interim tenor might be something that bridges the concerns that you all have, rightly, about these types of gap risks.

Increasing availability of repo clearing for liquid assets, that's done in the dealer community today that work is being done to think about more extensive use of repo clearing and that could be an important part of the overall mechanism for addressing concerns about short-term wholesale funding and fire sales. This one I think is an interesting one, and it's something we do internally, and should be considered more broadly, incorporating stress market capacity analysis in defining a liquidity profile.

We do that, we think about what the potential is for being able to liquidate assets and stress, and what that might mean, importantly for our capital position, not just whether we could, you know, those market capacity that dump securities but what -- at what price or what might that mean for our capital. So in the previous Panel, people talked about the importance of connecting liquidity and capital, and we thing that's one way to do it.

I will share an observation that Paul had, which is, though U.S. proposal for LCR really takes this to a one-day giant stress, the way it's structured, and you have to ask the question, gee, could you really liquefy as much as you might have a big stock of high-quality liquid assets, could you really liquefy it if the measure is really a one-day stress, and that ties into the market capacity issue? And I think the answer is probably no, so we have to really think about that.

And finally, ensuring appropriate policies and requirements apply to all significant market participants, not just bank holding companies, we think is an important part of this. All of this comes with implications, of course, and I just wanted to mention a couple, and Paul has rightly mentioned a few as well. Be aware of the drawbridge.

We now have the concept of a bad deposit, that's not something we used to think about before, but given the definition in the LCR, in particular, distinguishing between operational and nonoperational deposits, we now have a bad deposit called a non-operational deposit, and banks won't want to take those.

They certainly won't want to take them especially in stress times, and it raises the question, can banks be a safe haven in the next crisis? And it also asks the -- raises the question, well where will these deposits go? Will they got to money market funds, for example, because they are meant to be short-term, but as, you know, the SEC is considering changes to money market fund rules, what the potential gates and all that, and how will these things intersect?

And, by the way, funds will need to be shorter under SEC rules these days, while financial institutions need to be longer. So we are not issuing the paper that they would want to buy, so where will -- what will they buy with these short-term deposits? So important questions to consider; how will the leverage ratio and the liquidity requirements interact? Bank provided liquidity backstops become very unattractive in the new regime. Will banks less be -- be less committed? We provide committed lines of credit, but will we be less committed? Paul mentioned municipalities, CP issuers, definitely adversely affected.

You know, the pricing, in conclusion, the pricing structure and availability of products and services will change which might require important adjustments by wholesale consumers of our products and services. And we may be okay with this, the collective we, but as other panelists have observed, Mark and Paul, we are not sure this has been studied in its entirety.

So a lot of important changes, we've improved the resiliency of the system, more is on the way, more could be considered but we should try to understand the implications in so far as we can. Thank you.

MR. ELLIOTT: Thank you all. So, before we go to the audience I just have a couple questions for the panelists from things that arose over the course of your various discussions.

I do think one of the central points that we could probably all agree on, is that it would be useful to have a better cost benefit analysis of these -- liquidity requirements than we have at this point. It's not that none have been done, the Basel Committee on banking supervision has done analyses of this, as they put together the liquidity rules, but I think we'd all agree that there's a lot more that could be done.

So I'd like to ask you about that. Two points, one, none of us have yet really addressed the point of what's the societal value of maturity transformation? I happen to personally think, as I think most people who follow banking do, that it's quite useful to take short-term money and turn it into something medium to long-term that could be used in the economy, but I've talked to serious economists and international organizations, on the official sector, who aren't sure there's all that much value in it.

So I'd be curious about your views, how you think of it, and then what your thoughts are on the kind of cost benefit analyses you've seen to date and what more might be done? So I'll give you a chance first; Mark.

MR. VAN DER WEIDE: Okay. I probably will have to skip that second question, it's a little too metaphysical for me, but I'll go on the first one, on the cost benefit analysis. Cost benefit analysis is pretty hard to do, both on the cost side, and the benefit side. We try to do what we can when we issue individual regulations to size the cost that those would impose on the banks that would be subject to them; the financial markets, and the economy more broadly.

We try to quantify the benefits to the broader financial system of the rules, but both sides of the ledger are pretty difficult to quantify. We also try to take a look, be careful at the intersections from the different rules they we are imposing, we're obviously imposing lots of different kinds of rules on different sets of banks. We are trying to look at the potential positive and negative synergies between those rules that come out; to measure those to the extent that we can, so that there's a -- so that the interactions are also taken a look at pretty carefully. But these are difficult things to do.

Part of the way that we attempt to quantify the cost side for all these regulations, and this is done in Basel and is also done internally at the U.S. agencies, is we do a fairly extensive quantitative impact studies of the potential shortfalls to the different banks. We have the new capital rules, to the LCR, to the NSFR, to the single-counterparty credit limits the Basel Committee just put out.

So we do attempt to quantify the slightly -- a somewhat more quantifiable side of the ledger which is the cost side versus the benefit side through that work. We also spent, you know, quite a bit of time internally trying to figure out what would be the cost to the U.S. banks. They are going to be subject to the LCR, there's lots of different ways to come into compliance with the LCR. You can terminate your liabilities, you could hold more HQLA, you can cut your credit lines, but we did a bunch of work internally to attempt to assess how much of a cost it would impose on the current banks, at least, subject to it.

The benefit, calculations are just pretty difficult to do, so the work there tends to be a little bit more qualitative. The Basel Committee, as you mentioned, did do an assessment a few years ago, tried to do kind of a regulatory assessment of the Capital Rules, and at least the NSFR, if I remember correctly, part of the liquidity program, took a look at the impact of that. Measured the cost and the benefits as well as they could, through economic models, and decided that the new capital regime and the NSFR were well within the range of social welfare increasing and, in fact, you could add a couple more percentage points of capital on top of what you have done, and it would still be net beneficial -- even more beneficial to the economy, perhaps, than what we've already done.

It's one study, the numbers are hard to get super-comfortable because of all uncertainties around it, but we do the best we can.

MR. ELLIOTT: Okay. Anyone else?

MR. SAIDENBERG: Sure. I mean, I think that -- I actually think Mark understated the challenge of doing the cost benefit analysis. I remember when I was still part Basel Committee when the studies were being done, and even when you can measure, let's say the direct sort of cost to comply, what you are seeing there is the commercial cost, sort of the private cost to comply with the regulation, and on the better days, the appreciate on the cost benefit analysis is one of the social costs versus social benefit.

MR. ELLIOTT: Right.

MR. SAIDENBERG: Where I think the measurement error -- not error -- the measurement uncertainty is even greater. I know that I had a renewed appreciation of the challenge that the environmental economists went through because I -- at a time when I was in a position to largely be arguing for policies that were promoting financial stability, I would much rather it have been, if it was just a debate, on the side of the debate that said, the immediate costs to economic growth outweigh the benefits of financial stability, because it's easier to observe, it's easier to project the immediate cost than the uncertain and, hopefully, unlikely benefit of promoting financial stability.

So I think that, as we think about how to understand better the cost and benefits, it's not as simple as just saying, we need to do better cost benefit studies, but really to, if we can, deepen to almost at a tactical level, what are the impacts of what's happening, and then make what is admittedly a judgment, a shared judgment, of whether those are the right outcomes to -- you’ve heard these phrasings -- intended outcomes versus the unintended.

There is going to be, and David made this point last night, there is a set of intended outcomes. If we understand those, we can decide, are they predicted outcomes within the intended class, or in the unintended and that we would say, in a judgmental assessment of the social cost, social benefit are not the ones we want to pursue.

MR. ELLIOTT: Adam?

MR. GILBERT: Yeah. Just a couple of comments. I think it will be helpful in the policymaking process to, in so far as possible -- as possible be up front about what those intended consequences are, because sometimes you only find out after going in and reviewing the proposal and trying to assess what the impact might and providing that feedback, and they said, that’s what we really wanted, but it's not obvious in all cases that that’s the case.

So it's not clear to me and -- again, aligning myself with Paul on the issues around munis, you know, is it clear that we want to have some effects on the municipalities manage their deposits or issue their debt. So I don't know and maybe that was an intended effect. The other thing, in fairness to the supervisory community, it's very hard to know, upfront, what the -- the response function the banks will actually be, and so that’s a very difficult position for them to be in. And it's the sequencing of the process that makes it so hard.

Supervisors come up with a proposal, they issue it, we get it, we try to analyze it, we talk to our business folks, and finance and risk folks and try to assess what the impacts might be, and then we project back to the supervisors, what those impacts could be. But we haven’t yet taken the actions, that we haven’t really though alternatives, et cetera. So we don't know whether there will be alternative providers in the marketplace such that there will be a net zero effect on the municipal issuers.

So that’s all very hard to do. And Mark, you struck a chord with me earlier when you said, we have to be thinking, going forward, in a way that lets us evaluate what the impacts are, and make adjustments as necessary, if we don't get it right up front. And that we want to believe as bankers that that is really an evergreen process and is easy to do, but I think, you know, some of the comments Paul made, and some of the observations I've shared with you, that's hard once the policy gets, you know, fixed to change it sometimes.

And so I think loosening up the reins on that might make it easier for us to adjust, if we can't readily predict upfront what all the impacts will be.

MR. ELLIOTT: I'm not going let you off the hook quite that easily. Since you do sit a major bank, and I'll ask you as well Paul.

MR. ACKERMAN: Sure.

MR. ELLIOTT: What do you think the impacts are going to be? How are banks going to be reacting to this set of changes?

MR. GILBERT: So, we will change product, structure, pricing and availability on certain products --

MR. ELLIOTT: And what are the major areas where you see that having a real impact?

MR. GILBERT: I think certainly in the area of lines of credit, liquidity backstops in this context. There are other impacts from the Capital Rules, and so forth, but I'll confine to liquidity. There is no doubt that -- yeah, because the Rules take a harsh view of liquidity backstops, for example, and so if you are CP issuer, or if you're a financial institution looking -- another financial institution looking for liquidity from, you know, G-SIFI, that's going to be much harder to come by going forward.

It will either not be available, or be priced radically different. That may be an intended consequence, and it won't surprise me to hear Mark and Marc say that's intended consequence, but that's definitely true. There will be adjustments required, or rather consumers of those products. So I think that's absolutely an area where -- deposits is another area where I think you will see a big change, and then deposits may end up getting termed out, they may get eschewed. We'll have to see, but if I were a corporate treasurer I would be thinking a lot about what these rules mean for me, and try to talk to my bankers about how things will change.

MR. ELLIOTT: Paul?

MR. ACKERMAN: Yeah. So let me go back to the cost benefit analysis, I think we -- I think we need to spend more time on that. I think that gets short-shrift in the process. And I think it's subject to the -- kind of a super-equivalent mentality, where, with the -- I think the agencies may put things out there that are intentionally conservative or have intentional impacts that aren't explicitly communicated. I think it would benefit. the dialogue as a whole, to be more explicit about that because then we won't waste our breath if that's an expressed intent, kind of thing. The other thing though on industry, industry needs to tone down its super-equivalency too. So, every regulation industry's first response can't be, the world is going to end. And that frequently is the case, and so, while it's easy to sit up here and say, I think, a conscious decision to spend more time on the evaluation as opposed to the implementation, would be a very useful thing.

As far as the impacts, you know, it's pretty simple. Adam summed it up, we are going to keep more cash on the sheet, period, and some of the changes are going to be really beneficial. As a practitioner a lot of the contingent liquidity instruments that were issued, probably never should have been issued in the crisis, and so I think that keeping cash -- either prohibiting those, or keeping cash sufficient to satisfy those should they be drawn, I think is a good thing.

On the other hand, it is going to increase kind of the cost of credit and the cost of risk-taking, because if you take the simple balance sheet, you're going to have to -- you have less of the deposits to deploy, and you're going to end up with more cash, which is a drag on returns. And so far, we have not seen the capital markets drop their returns anywhere near commensurate with the increase in equity requirements.

So, you know, the idea might be, well, we are making banks safer, and the return requirements should decline, and there will be an equilibrium. So far we haven't seen that, right, we've seen equity requirements go up, which has the impact of obviously reducing return on equity, but risk premium for equity has not gone down by anywhere near the amount that equity requirements have gone up.

So I think that's a problem. It hasn't sorted itself in four, five years, and so I think the outcome of that is probably an increase in pricing and more expensive or less available credit.

MR. VAN DER WEIDE: Can I pick up on one comment that Adam made earlier about back to the cost benefit analysis. You know, one way that we try to improve our cost benefit analysis is to put proposals out for comment. The Basel Committee, the industry comments, the public comments, and then the U.S. implementation, also, always involved, so at least one round of public comments.

So that helps a little bit I think. But I think there is this fundamental point that Adam made that some of these regulations, it is hard to predict exactly how the banks that are subject to them, or the financial markets, more broadly are going to react. So you need to kind of watch and learn, and I think there's at least some good signs on the liquidity regulations that the regulatory community is willing to watch and learn and change.

We've put out the LCR in final form in 2010, made it effective 2015, I think was the original effective date. We amended it in material ways two years later, two-and-a-half years later before the thing even went into effect due to additional learning, additional conversations we had with the industry and the public at large. So I think on the liquidity regulations we've recognized, and need to continue to recognize, that this is stuff that's new, and we need to be very aware of potential unintended consequences, and I think we have been, and we'll continue to do that.

MR. ELLIOTT: Okay. Now I noticed none of you have touched the broader question I asked, which is, why should anybody who isn't in the industry care about these rules, in the sense of, is there a real value to maturity transformation for society as a whole? Is it good that there are people who want to put deposits and know that they get back anytime, and yet we also want to use that money from medium to longer-term projects? Can you just give me some sense of how you think about that, or is it something you're just not focused on? Anyone?

MR. BAILY: –That tells you something…

MR. ELLIOTT: It does tell me something, and I've read into this before and it does worry me. Now I will say for the benefit of the audience almost everybody who is focused on financial regulation thinks maturity transformation has significant value. The economists I talk seem more skeptical, generally, have not focused on the area, but the fact that there are these real -- that I can ask this question and people are reluctant to answer, is a concern.

It makes cost benefit analysis harder too, obviously, if you're not quite sure what the benefit is to society in the first place.

MR. ACKERMAN: I'll try a main street view, right. I'm sure -- I may get some eye rolls from the academics here but, look, when we lend to a customer so we are primarily, of course a commercial bank, all right, so we take deposits, our customers have a clear preference in the way they choose the deposits that we have available to them for liquidity. Right? So the customers are expressing a preference for liquidity, no doubt about that. Certainly commercial customers are that way, and retail customers are as well.

On the other hand, on the asset side, when you are lending to small businesses and they want to build a building, that may have a useful license of 20 years, they want to have financing that is going to be predictable for that 20 years. And so I see it played out every day in the choices that our customers make, both on the asset and the liability side. Now, theoretically, can I quantify that? No, but I can tell you that I see it in practice every day as we go about the business of gathering deposits and making loans.

MR. GILBERT: I guess I'd add that the observation could be, Doug, in the fact that the banking industry is all prone to paroxysms of -- a lot of syllables, Paul, sorry about that. You know, despite the episodes we have, has contributed significantly to economic growth in time. And so the idea that we would transform savings into productive credit and assets for that support economic growth I think has been validated over and over again. No doubt in the United States we've developed capital market functions that are a substitute for banking and, I think, many parts of the world wish they had the capital markets that we, notwithstanding some of their challenges.

But, you know, the banking model has proved very successful in promoting economic growth, and I think that we should take that as validation point number one, and deal with some of the issues that come up through the structure we've created, to deal with the episodes we have where there is crisis of confidence through insolvency risk issues, et cetera, so yeah.

MR. ELLIOTT: It will be good to continue the conversation later, but I'll just say briefly, I certainly believe that banking has been useful for society despite the paroxysms, but there are multiple things banks do. They pool money together, they have informational value where they acquire customer relationships, et cetera, and they do maturity transformation and I'm probably missing a couple other things they do.

So the issue really is to figure out how much of the value is coming from the maturity transformation. I suspect quite a lot, but until we can nail that down more, it makes it all a little bit harder to talk about it.

MR. SAIDENBERG: So I mean, I think this was -- for me this was always the challenge, and part of some of the cost benefit analysis, because frequently the discussion would be phrased, and not just the zero one question that you asked, is it valuable or not? But can we differentiate the good maturity transformation from the maturity transformation? And what I can tell you from a policy design perspective, anytime that -- and maybe this demonstrates I'm a little bit of a chicken -- but anytime the debate was framed in those terms, that’s the conversation I was trying to avoid. The conversation I think we tried to actively get in is the one that was framed the way you and Mark teed up the question, which is, if we know that there are two really core forms of externalities that are associated with liquidity -- distress in liquidity, in funding markets.

One is the potential failure, and as Charlie was saying it is related to a solvency question, but I think there are some challenges in trying to link the two, but it is related to, that there's just externalities associated with financial distress of an institution; and the other is the fire sale externalities. And so a lot of the design discussion turned into trying to understand the nature of what would make a financial institution more or less resilient, and so you could say, implicitly, as well it had the effect of not being the sort of -- valued then -- or what are more and less valuable.

But I would -- but this where, something Mark said at the beginning, I don't -- I would never -- I would try never to describe the intent of the policy as reducing the amount of maturity transformation, I would frequently go with the intent of the policy which is to address the externalities, it had the effect, in many cases, of putting pressure on -- or it could be for the purpose of this conversation -- characterized as the less valuable maturity transformation.

MR. ELLIOTT: And I think that's a reasonable way to view it. I guess one reason -- and I'll turn to the audience in just one second -- but the reason I keep coming back to this is, perhaps it's been bad wording on the part of some of the regulators out there, but sometimes they seem to talk as if every form of maturity transformation was a bad thing. And I doubt that's what they seriously mean, but it does, again, create confusion.

So let me turn to the audience and, again, to expand on David Wessel's ground rules, please identify yourself and your affiliation, as people have been doing, and you know the difference between a question and a comment, so try to make it a question. And, Bert, you can't be the first guy every time, so, Krishna?

MR. GUHA: Thank you. I'm Krishna Guha, formerly with the New York Fed, now at ISI. I do think in the conversation one aspect emerged that I think has struck a chord with me, which is, I do think that regulators need to have a conservative bias, because every other actor in the process, has a bias in the other direction, for very reasonable and rational purposes. So that itself doesn't trouble me, but when we look at the question of short-term wholesale funding, and a specific question, there's an expressed policy intention that Mark Van Der Weide referred to, to address this issue further going forward. There are a lot of different tools that could be used to do that, some of which you briefly commented on.

I would be interested in the panel's assessment of what's the sort of optimal mix of those tools would look like if we would tweak in different dials, with the purpose of making further progress to reduce vulnerability to short-term wholesale funding runs?

MR. ELLIOTT: I assume you're going to duck, Mark?

MR. VAN DER WEIDE: I'd love to duck. I'll just say some meaningless words then --

MR. ELLIOTT: Okay.

MR. VAN DER WEIDE: -- turn to these guys for something more intelligent. So I think, you know, the first effort that the global regulators took on in short-term wholesale funding, was really the LCR and the NSFR, so the first set of tools that we uncorked were bank liquidity regulations, I suspect that the primary reasons for that would include such things as tailoring the solution to the problem, if it's a liquidity risk problem, a liquidity regulation, might be the most narrowly-tailored solution to that problem.

It's a loss absorbency problem. Maybe a capital rule is the right fix to the problem. So I think there's some tailoring benefit there. I think secondarily there is a recognition that, you know, I think you can make a decent argument that the Capital Rule could address any possible risk we might see out there, at least in the banking system. But there is some reluctance, I think for the global bank regulatory community to try to solve every problem with the Capital Rule.

There's already a lot in the Capital Rule, and maybe we should have a little more of a policy of regulatory policy, portfolio diversification, and come at different problems with different sorts of tools. So I think that was part of it too. You know, we've not been convinced that the LCR plus NSFR is enough of a solution to the problems in the short-term wholesale funding market, so we are exploring additional things we might do, kind of. In addition to that, on the capital side, also on the margin side, one clear area where any kind of bank regulation doesn't fully solve the problem is when you've got short-term wholesale funding markets are not bank specific.

Banks are gigantically important players in those markets, but they go well beyond the banking system. Our regulatory tools tend to be fairly bank regulatory; there are a couple new tools you've got now to get at the market-wide phenomenon. You've got non-bank SIFI designations at the FSOC and NCORC, and if there is some single-shadow bank out there that's looking pretty scary, they can go out and designate it, but again, that's only a little piece of the problem.

There's also the problem of systemic herds of classes of individual firms, like money market mutual funds. There are a few market regulatory tools that we now have, one is the derivatives margin requirements that Dodd-Frank created. I think those are kind of part of the program. We've also had authority to impose margin requirements on securities financing transactions for many, many decades.

The FSB is not currently looking at whether that should be part of the global financial response to the short-term wholesale funding, securities finance in business. So, I think that we are kind of looking at all different tools at this point and trying to figure out what that right optimal balance is.

MR. ELLIOTT: Yes?

MR. SAIDENBERG: So, I mean, I -- this a point I made ineloquently before. I think that as we consider the remaining risks, I think there are two criteria that we could use in thinking about what policies to pursue, which would be the exact wrong ones to use. The one would be -- we have a hammer so let's hit things, and so I know this is temptation, and Mark, this is consistent with what you said, of capital regulations, capital is great for solving everything; it is a very big and painful tax.

And I guess my concern is that, and it certainly creates incentives, it runs the risk of not being the right tool for the right purpose, and so at the risk of violating Paul's concern and being characterized as someone who's is pro complexity, I would say

I am pro tailoring of rules to solve specific problems. The second is a pure public -- I don't even know how to describe it. A political science problem maybe is -- and this ties back to something Adam said, we should not be afraid to use tools that have otherwise been considered done.

And I think there is a temptation in the policy debate to say, well there are some things we have finished, and there are others that we are still working on, so let's use the ones we are working on to solve some set of problems. And in the same sphere tailoring, I would say, in many cases there's a right solution for the right product -- what you think is -- if you have what you view is the right problem, then identify the right solution for that problem, even if it means sort of having to go back and break a few eggs and reopen policy that you otherwise considered complete.

MR. ELLIOTT: Yes?

MR. ACKERMAN: Can I just address that conservative advice issue. I'm am with you that there ought to be conservative advice, what I'm suggesting is that the unconsidered accumulation of a series of conservative decisions, is what I'm concerned about, and it just needs to be explicit and considered.

MR. ELLIOTT: Yeah. Others? The woman in the back on the side --

MS. WILKINS: Michelle Wilkins with the Export-Import Bank. I wanted to see if Paul Ackerman could expand on a comment that he made, that limitations of agency securities need to be changed. What in particular did you have in mind?

MR. ACKERMAN: So there is a limit in the proposed rule, agency securities are limited. There's a cap on the -- they are known as level two securities, and there is a cap on the amount that can be included. So you’ve got these securities, and depending on your mix of other HQLA and level one assets, you can have a restriction that limits the amount of agency securities that are considered as liquid.

And our assertion is that if you look at the market data, and the performance of those securities during the crisis, they were indeed liquid. They were arguably as liquid as you can measure, as many government securities, and so the limitation, we think, just isn't based on market data.

MR. GILBERT: Our view, consistent with that is, if you don't want to get rid of -- if you don't want to eliminate a haircut, meaning treat them the same as Treasury, you can haircut the securities but get rid of the cap.

SPEAKER: Yeah.

MR. ELLIOTT: Okay. Bert, why not?

MR. LEE: Thank you. Bertie Lee, Banking Monetary Policy Consultant. This is a question I think primarily for Paul and Adam, and that has to do with the -- again coming back to the issue of deposits. Deposits represent the largest source of bank funding particularly for domestic institutions. And I'd be interested in hearing more about how you see the LCR affecting banks' appetite for deposits?

And what the impact of changes that are made by the banks subject to LCR in terms of their deposit-gathering program, what feedback affects that, and spillover effect that’s going to have to community banks? To banks not subject to the SOR -- the LCR.

Or, to put it another way, to what extent is this going to really cause distortions and unintended consequences, in the deposit-taking market; which again, represents the largest single source of funding of a bank balance sheet? And then kind of a related question; is the LCR kind of a backdoor way of trying to impose the narrow banking concept on U.S. commercial banks?

MR. ACKERMAN: Do you want to go first?

MR. GILBERT: So I -- Bert, I think you're right, this will affect, and I mentioned it in my opening remarks, this will affect the bank's appetite for deposits, and we will work hard to distinguish what is considered operational versus not in the context of the rules, and we will have to adjust our offerings to reflect that. Now what you might see, is that banks change structures, so remember the LCR is a 30-day measure, so perhaps you get, you know, what heretofore have been kind of demand type deposits terming out.

Mark might find that appealing, policymakers might find that appealing from a stability standpoint, but does change the nature of the deposit for that corporate treasurer, and so forth. So they will still be offered but they might change in nature, or they could change in price. But we haven't thought heretofore in such a semi-rigid way about what's a good deposit versus a bad deposit. Because if you have a bad deposit, you're going to have high-quality liquid assets held against it, and that means you are not going to be doing something else.

MR. ELLIOTT: By the way, just to be a little clear, is this summary correct? That the operational deposit -- the non-operational deposits we are talking about, are corporate deposits which are not necessary to maintain a minimum balance for their sort of day-to-day activities, but are kind of voluntary deposits?

MR. GILBERT: Right, correct.

MR. ELLIOTT: Yeah. Fair enough.

MR. ACKERMAN: I guess my response is, I'm going to disagree a little bit with Adam. I don't think there are bad deposits. There are different kinds of deposits, and there are deposits that have different value, but I don't think there are bad deposits.

So, might I change my structure in pricing, and the way I comport myself as a treasurer if I have a lot of nonoperational deposits? Absolutely. And that will have to get baked into the way those deposits get priced in value to the customer. But I don't it -- I'll just speak for us, it's not going to change our appetite to take deposits from customers, because it is a valuable function.

A corporate treasurer that needs a safe pair of hands, for $2 - $300 million dollars even if it's not operational, that's still providing a service to them, and we'll figure out a way within, kind of the regulations or, you know, reasonable liquidity management to provide that service to that customer; so I don't think it's going change our impact.

As far as large versus small, I don't know that there's going to be a huge disparity impact. I think there are reasons why some customers choose large banks, particularly in the corporate realm, because of the array of services that can be provided to them, that simply aren't available in some of the smaller banks. So I'm not sure we are going to see a tremendous movement between the two, because of the differences in regulation.

MR. ELLIOTT: Okay.

MR. GILBERT: And maybe the distinction Paul is making between our views is nuanced, and that has to do with the business model, we're a global banker's bank, and a huge prime brokerage operation. So we are going to have classic deposits that don't fare well, under the LCR, and so again, we are going to have to factor that in, too, I think.

MR. ELLIOTT: David?

MR. SCHRAA: David Schraa, IIF, a very interesting discussion. I don't think anything has been said really, maybe directed, a little bit, by Mark just said, about the effects of these liquidity regulations on market liquidity, it's maybe have been a little bit alluded by the two "Marks" in talking about short-term financing transactions.

Certainly one of things the industry is very concerned about is the potential impact of NSFRs, currently proposed on market liquidity for equities and -- well all short-term markets. I wonder if you could comment a little bit on that.

MR. VAN DER WEIDE: I can comment a little bit, yeah. So this might be in reference to the recent proposal by the Basel Committee to put effectively -- a required stable funding factor, or a haircut on some of the reverse repos that some of the large banks have. You know, one of our fundamental ways in which we are not convinced that the LCR plus NSFR does all it needs to do to mitigate risk in short-term wholesale funding is because both the LCR and the NSFR are -- until this recent proposal from the Basel Committee, were really completely blind to maturity matched books of repo and (inaudible) that borrow, and while that might not be maturity transformation it might maturity matched book.

It still feels like there are some pretty significant liquidity risks there. I think both from a microprudential and macroprudential purpose. From a microprudential perspective, it's not at all clear that we should expect the global bank that comes under liquidity stress to yank every single one of its reverse repos to all of its customers, platinum, gold and silver. So I think there just some, just natural, selfish microprudential reasons why we probably shouldn’t expect complete inflows of that kind of short-term lending by broker dealers.

And then also just from a macroprudential perspective, even if you’ve got overnight repos, matched with overnight reverse repos on the other side, a quick unwind of that book, if it's large, in particular, is going to have some pretty negative financial stability effects. So we felt like one thing that needs to be done to kind of ameliorate some of our STWF anxieties, is just to impose some kind of asymmetry, some kind of regulatory charge on that matchbook.

Now the Basel Committee filed a proposal a few months ago that would impose a 50 percent required stable funding factor, on some of those reverse repos and short-term loans. A lot of negative feedback on that during the comment process and the Basel Committee will be taking a look at that. That will be one of the key issues that they'll be taking a look at as they move to a final NSFR later this year, and we'll be actively engaged in that debate, although it's been criticized as too high.

It's been criticized as not risk-sensitive enough, it's a 50 percent charge, basically, for all reverse repos no matter what their term, no matter what the collateral is, we we'll be taking a look at whether risk sensitivity, granularity, is a good idea there. The provision also carved out banks, so the interbank markets were left, kind of, free and clear, and it's really kind of bank lending to hedge funds that got with the 50 percent charge, there was some criticism of that, picking of winners and losers in the repo market. So that will be an initiative that we'll be looking at quite a bit as we move to finalize -- refinalize the NSFR later this year.

MR. GILBERT: This gets into the tradeoffs around simplicity and complexity, right, because we are certainly not allergic to having stable funding against these types of assets, but they need to be adjusted for credit quality and the type of asset it is, well, that means you're going to have to get more granular with respect to the rules, and that runs at cross-purposes with the simplicity argument. So there's a balance in there somewhere that will have to be found.

MR. ELLIOTT: Okay. Other question? Back there.

MS. RICE: Thanks. Tara Rice, the Federal Reserve Board. And within the Fed the two "Marks" in here are heroes. So we've been talking a lot about this from a domestic perspective --

MR. ELLIOTT: I'm sorry. I'm sorry. Did you say, near heroes?

MS. RICE: Are heroes.

MR. ELLIOTT: Oh. Okay.

MS. RICE: So we've been talking about this a lot from a domestic perspective as we showed but I'm just curious as we have differences with Basel III and how it's been interpreted internationally, I'm just wondering if anybody has opinions on how, what may be some of the major differences as we come to implementation again, across countries. I know one of them could be the definition of HQLA, I'm wondering if you had any other thoughts?

MR. VAN DER WEIDE: So the Basel Committee has paid a lot of attention in the last couple of years to making sure, as they write all of these new different rules for global banks to comply with it, jurisdictions are actually implementing them faithfully, both in the letter of the law, and also in the implementation of the law. So, the Basel Committee has moved quite significantly, I think, from being a rule writer, to being a -- I won't say rule enforcer -- but they definitely are spending a lot of time making sure that jurisdiction implement the rules faithfully.

And I think the -- the focus of the attention, so far, has been on the Capital Rules, and I think that’s significantly because under the current Basel Capital Rules, there's a lot of discretion given to bank internal models and internal rating systems, which are obviously susceptible to quite different implementation by individual banks and individual regulators.

So the Basel Committee is kind of all over that issue, in particular, over the last couple of years. They are also going spend a lot of time trying to make sure that the liquidity rules and some of the rules that have been adopted are going to be implemented faithfully across jurisdictions. The way Basel agreements work, the way they’ve always worked, I expect, and indeed hope, they always will work is that they are floors.

So each jurisdiction is permitted under the Basel agreements to go super-equivalent, as we like to call it, and each jurisdiction -- for some jurisdiction we'll do that, the United States is proposed to do that, in some material ways, and we are still thinking about all those issues as the comments come in. Liquidity regulations, I think, and Marc, might have a different view, or might have the same view, but I'll be interested in hearing his view as well.

One of the challenges of producing a globally applicable Liquidity Rule was the very significant differences in funding markets across the world. To me, at least, it seemed conceptually easier to make a capital rule apply to all global banks, more difficult, because of the heterogeneity of the funding markets around the world to come up with a Liquidity Rule that worked, kind of, for all global banks, all markets, but we did the best we could and the Basel Committee will make sure that that floor is set -- is complied with by all the jurisdictions around the world.

MR. SAIDENBERG: So I think the other challenge -- I'm not convinced that that’s much harder -- well let me rephrase it -- I'm not convince it's that much easier to get a globally consistent Capital Rule, because I think that asset markets, when you get to things like the standardized approach, thinking the risk of a mortgage is comparable in different jurisdiction --

MR. VAN DER WEIDE: Yeah, they are both pretty harsh, I think.

MR. SAIDENBERG: It's a pretty generous step. But I think the challenge that is incrementally hard for liquidity is that there are few boundaries to institutions operating in multiple funding markets. And so I think it is of great importance that the Committee actually finds a way to promote consistency in the implementation of liquidity regulation. I think there are some operational observations that, as Paul said, the reporting burdens are high. I'm not sure if that's intended or unintended…That their burden is --

MR. ACKERMAN: Super high.

MR. SAIDENBERG: -- super high.

MR. ACKERMAN: Go with super high -- go with super high.

MR. SAIDENBERG: And then when you get differences across jurisdictions, it has an increment to that, because having sat in a conversation with another agency, we'll leave out which agency it was, and the intent was for two agencies across borders to agree on liquidity reporting. Everyone agreed it was the most important thing they could do, and the conversation started with, but you of course will agree to with that we just put out in regulation, and the conversation, as you would imagine, did progress terribly well after that.

So I think that there are, one, they are a high cost to not getting consistency from an operational end. The other is -- given the sort of flexibility in funding arrangements. They are very cost if firms are firms are not subject to a consistent regulation that they can -- even with the FBO Rule, you'll see foreign banks can fund themselves in U.S. markets, and if they are not being subject to comparable regulation, it will get a very different funding on AMX between the domestic and foreign organizations.

MR. VAN DER WEIDE: Another problem with manufacturing a Global Liquidity Rule was, one of the key issues that we had to debate with and have debated and will continue to debate is how to make those rules interact with the central bank, lender of last resort facility. And different central banks around the world have very different policies around how they view -- how they a multi-policy, how they lender of last resort, and that was another challenge concept to produce a globally common template for Liquidity Rule.

MR. ELLIOTT: Do you have a question, Martin?

MR. BAILY: I'm trying to make sure that it's not too -- so maybe I'm putting on the -- pushing on the same string that Doug was putting on in terms of maturity transformation. But how much intermediation do you think should go through banks in our economy? We have a certain level of deposits. Deposits, historically, were quite unstable, and so we had deposit insurance, and we made that unstable -- liability to be quite stable.

So now banks can lend against that, and they can lend long, even though they are borrowing short. That didn't seem to be enough money, so they went out and started looking for wholesale funding, they are getting money from money market mutual funds, so that's sort of deposits also that are cycled through the money market mutual funds.

I'm a little surprised that the bankers here are so sanguine about these changes. You know, you can't use these forms of funding that are not stable. We are not going to lend you liquidity as a lender of last resort except under extreme circumstances. So I'm just wondering where is the money going to come from to provide intermediate -- banking intermediated loans that are so important for, companies, small companies and so on.

And is that -- when you were making these regulations, did you do any kind of adding up, and sort of say, okay, there's the amount saving, here's the amount of deposits, here's the amount of the mediation? Is that going to be enough to finance growth? Or, did you just say, we don't care, we are just going to make it safe?

MR. SAIDENBERG: Let me start.

MR. GILBERT: Of course they said, we don't care.

MR. SAIDENBERG: Yeah. Secretly the conversation was, we didn't care -- no, that wasn't serious. I think that there was an appreciation that you didn't want safety at any cost, and that you wanted to -- not promote -- wrong word, to not interfere with stable maturity transformation. And so that's why, notwithstanding some of the comments earlier today, any of the questions about the deposits now, the LCR, for example, intentionally differentiates among types of deposits.

So there is a strong recognition I would, maybe not a perfect recognition, because there's still an assumed outflow of insured deposits, but there is a strong recognition of the benefits of deposit insurance, and so the incremental cost from liquidity regulation on that form of absent deposit insurance, but with deposit insurance, stable maturity transformation is not what the intended and unintended discussion.

It's not what the -- the LCR was intending not to tax that type of maturity transformation. I think the hard part is then, when you get to everything else, and I think there were two in the discussions then, there were sort of two ways one could have gone about this, one is to come to a view of sizing the right amount of maturity transformation, which had all of, I think the cost benefit -- social cost benefit challenges we described before, or to come to a view about, there are significant costs of financial distress.

The big takeaway for a lot us from 2000 -- 2007 to 2009 is that we may have underestimated the cost of financial distress at least within regulated institutions, and may be more broadly, and so I don't think we should be surprised that coming out of that, and maybe to David's point from last night, there's been an overreaction so -- but I don't think we should be surprised that there was an intent to move the lever, and say, on the tradeoff of transformation versus financial stability, the pre-2000 point on that tradeoff, not where we want to be.

Pretty clear where -- which direction we need to go, and then to everyone's point, I think there's a good debate about, over time how do we determine if we've gone far enough, just right. The odds of getting just rights are, I'll go for zero, but either not far enough or too far, and then have the willingness to be somewhat flexible over time. I do think there will be a market mechanism that provides some relief, I don't say this critically, but banks are very good at appropriately arbitraging the rules that exist, in a way that allows the risk and the return to come into -- appropriately.

In some cases there's less appropriate arbitrage, some of that is from exiting -- activity exiting the banks to the shadow banking, and that's why I share Mark's view, that there has to be discussion and that was teed up his morning, about what are the incentives to move activities outside of the regulated sector. But it's -- I hope the reaction we get is not that, how do we get in this -- with David's point from last night -- how do we get back to where we were?

You know, this was big, very painful experiment that said we needed to move the needle, and that was the overriding perspective as we were going through it.

MR. GILBERT: Martin, you expressed surprise that bankers weren't kind of more opposed to the rules, and I think Paul and I have had insight to some of the issues that we have with the specifics. But by and large, these rules reflect how we think about liquidity, both from a stress and a structural standpoint, and in fact the binding constraints may not be particular rules, but actually will be our internal liquidity stresses, and the external type of stress measure.

So this is not inconsistent with how we think about the risk and the crisis, had a lot of important lessons, and I think there's been a significant adjustment in how banks, at least this one, how we manage liquidity, in a post crisis world.

MR. VAN DER WEIDE: I just want to add onto that. Back to the shadow banking point, you know, these rules are going to apply to the global banks and they are likely only to apply to global banks. Lots of the scary forms of maturity transformation that occurred that caused firms to collapse back in 2007, and 2008, weren't part of firms that were subject to bank regulation. More of the financial sector, right now, currently is under the bank regulatory perimeter, but there's no guarantee that it will always remain that way.

One thing we definitely spend a lot of time thinking about as we constructed this liquidity regime was, Oreg and I just put this severe constriction on this relatively small set of large global banks and just the activity flow right out of them to other firms not --

SPEAKER: (off mic)

MR. VAN DER WEIDE: Right, right. And so we try to do some things to makes sure that we are not just pushing the risk elsewhere into the completely unregulated space which may not be at all better. One, I think, important set of things that we did, and spent a good time negotiating, in the past few years was, a lot of the shadow banks that did engage in a lot of the scariest forms of maturity transformation back in the crisis, were only allowed to do that because they effectively had a bank sponsor; or a bank liquidity provider or a bank credit enhancer.

And so part of the changes to the Basel III Capital Rules, part of the provisions that were put into the LCR and the NSFR, were to make it much more expensive for banks, at least to sponsor a lot of those shadow banks that engaged in the scary maturity transformation activities. So -- and in the world that we are creating it does like, you know, banks will be able to still engage in form of maturity transformation, more stable forms.

Shadow banks will still be able to engage in those sorts of activities, too, but there's just going to be much greater constraints bank -- let's say, much greater constraints on really big banks. Greater but maybe not much greater constraints on the medium-sized banks, and less constraints on the shadow banks, but we are putting the levers that we can to make sure that there's not quite the same sort of Wild West activity going out in the shadow banking system too.

MR. ELLIOTT: Okay. Please join me in thanking the panel; we've come to the end of our time. (Applause)

SPEAKER: Good job.

MR. ELLIOTT: So the next step here is, you should eat. We've buffet lunch out there; you can eat in here or nearby. Please be back in about 20 minutes I think it is

SPEAKER: I've got five -- 12:55, Mary goes --

MR. ELLIOTT: Yeah, 12:55 we have Under Secretary of Treasury, Mary Miller will be speaking, start at about that time. Thank you, all.

(Recess)

MR. BAILY: So we're very privileged to welcome Mary Miller, the Under Secretary for Domestic Finance. Mary serves as the U.S. Department of the Treasury's Under Secretary for Domestic Finance. In that position she's responsible for developing and coordinating Treasury's policies and guidance in the areas of financial and institutions, federal debt financing, financial regulation, and capital markets. Previously she served as the Assistant Secretary for Financial Markets.

Prior to joining the Treasury, Miller spent 26 years working for T. Rowe Price where she was the Director of Fixed Income Division and a member of the firm's Management Committee. She earned her B.A. from Cornell and then MCRP from the University of North Carolina at Chapel Hill. She also is a chartered financial analyst designation.

And just to go off the page a little bit, I think everybody that I run into has said what a great person Mary is, how knowledgeable and how sharp, and it's a great privilege that we have her in the Treasury and an even greater privilege that she's here to talk to us today. Mary Miller. (Applause)

MS. MILLER: Thank you so much for the introduction and of course the opportunity to come and talk about this important topic today. So, since the 2008 financial crisis there has been, rightly so, a great deal of focus on ensuring that banks have significantly more capital and higher quality capital; however, in the midst of a crisis in the moment, liquidity can be even more important. Modern central banks are designed to provide banks with access to liquidity in a crisis. That is the essence of their lender-of-last-resort function.

The Basel III Reforms will require banks to significantly increase their liquidity buffers with the liquidity coverage ratio and net stable funding ratio. These reforms should decrease reliance on central bank liquidity but may require other trade-offs.

As I understand it, the panels this morning largely focused on the debate over who should be the primary provider of liquidity in a crisis; that is, the degree to which firms should be required to self-insure by holding large liquidity buffers versus relying on the central bank's lender-of-last-resort function.

Rather than reprise those debates I thought I would talk about financial market liquidity. Of course, banks and other financial institutions are intimately connected to financial markets, but focusing on market liquidity can help us think through a series of other questions. I don't necessarily have the answers to these questions, but I thought they were important ones to ask as we consider the issue of liquidity broadly.

Let me start with the definition of liquidity in a financial context. Liquidity is a measure of the ability and ease with which assets can be converted to cash. Further definition might address the ability to sell without driving down the price. I should probably add here that I spent my years before Treasury working as a fixed-income asset manager and a consumer of market liquidity. Having weathered many difficult market downturns over 25 years, both interest rate and credit driven, nothing compared to the financial crisis of 2008.

I'm going to just diverge for a moment and talk about a particular experience I remember from the Fall of 2008 which was a day when we needed to raise cash in a portfolio, and we attempted to sell a block of $10 million of a household-name corporate bond, highly rated. I think it was AA-plus. So, we did what we usually did. We went to the Bloomberg screen, and we put the bond out for competitive bid to 30 brokers. Within moments we had the answer. We had one bid, and one bid that was 10 points below the market valuation of the security that we were attempting to sell.

So, that had rather important ramifications because we held lots of bonds that looked like this bond, and if we trade the bond 10 points below the market valuation that sort of resets the pricing of everything you have in your portfolio.

So, what did we do? We didn't trade the bond. We said, you know, we ask for 30 bids. We got one. That's not really a market. We turned to some electronic trading platforms. We put the block of bonds out for bid, and over a period of a day or two we sold the block at our market value, so that raised a lot of questions in my mind about, what is market liquidity? How do you ascertain prices? How do you execute in environments like this? And importantly, it was teaching me the difference between credit impaired assets and liquidity impaired assets, and I'd never worked through a market where we had quite as much difficulty in terms of sourcing liquidity.

So, back to liquidity. I think there are different ways to think about liquidity, and the ways that recent developments and financial regulation and market practice are evolving. First, we can talk about the liquidity of financial instruments. Which instruments have the properties to be readily converted to cash? Regulators have gone a long way to defining this through the liquidity coverage ratio, through things like risk-weighted assets, and standards for suitable collateral.

This raises the related question of whether there are enough liquid securities in the market. Some rudimentary work that we and others have done suggest that supply will not be a significant constraint. A little more on that later.

Second, we could consider the liquidity of the institutions that make up the market. Here again, financial regulation has gone a long way towards imposing new requirements on banks addressing capital, liquidity, and leverage. The aim is for institutions to have enough capital and liquidity to be able to weather financial market turmoil. As a practical matter, the liquidity of a financial institution will be at least partially dependent on the liquidity of the instruments it holds and the liquidity of the market for those instruments during periods of economic stress. While regulators have gone some distance towards addressing liquidity concerns for financial instruments and financial institutions, it would be important going forward to continue to focus on the role of market liquidity.

This raises another set of important questions such as how should we measure market liquidity, and how can we be sure it will not evaporate when it’s most needed? As I mentioned before, there are many measures of market liquidity. In the context of reducing liquidity risk the important thing is that liquidity assessments of financial instruments and the institutions which hold them must be dynamic and as real-time as possible.

An analysis of market liquidity will be key. Liquidity stress tests should consider the particular properties of individual instruments and the likely market dynamics that will prevail in stressful situations. We know that illiquid markets can increase volatility raising the likelihood of a destabilizing cycle where firms seek to raise liquidity in the market but are forced to do so at large discounts thus impairing the firm's capital positions and exacerbating their liquidity problems.

Over the past couple years market participants have raised concerns about the potential lack of liquidity in certain markets, particularly the corporate bond market as a result of significantly reduced dealer inventories in response to changing risk appetite, evolving business models, and regulatory reforms. Dealer inventories are down by some measures as much as 80 percent compared to pre-crisis levels.

I would note that corporate bond markets have shown strong resilience over the last several years with record debt issuance, narrowing credit spreads, and steady inflows into corporate bond funds. But the concern is whether liquidity will evaporate in rising interest rate and weaker credit markets.

So, the depth and durability of market liquidity does bear directly on some of the central questions being debated on the other panels today. It also bears mentioning that concerns about market liquidity are relevant to the range of assets permitted to count toward liquidity buffers or serve as collateral. On the one hand, it's important to ensure that only the safest assets with the most reliably liquid markets are being looked to as the potential source of liquidity in times of stress. On the other hand, if all firms are forced to hold the same narrow set of assets, the selling that ensues when all firms attempt to raise liquidity could destabilize those markets. Striking the right balance would be important.

Finally I'd like to address developments that may impact the demand for and availability of safe liquid assets as well as several structural changes in the marketplace that may have implications for market liquidity.

In addition to the new regulatory requirements which will require banks to hold higher levels of liquid assets, increased demand is also being driven by increased central clearing and the associated posting of collateral on margin with the central counterparty and new margin requirements for un-cleared swaps.

By some estimates global reforms will require financial institutions to hold several trillion dollars in additional safe assets compared to pre-crisis levels, but overall the supply of high-quality liquid assets is still enormous. According to a recent analysis by the Bank for International Settlements, the available supply is many times the expected demand for collateral.

It will be important going forward, however, to look closely at the sources of that collateral and assess the ability to match supply and demand. This may become more important as regulations take effect, requiring institutions to hold large amounts of safe assets and as some sources of liquidity such as central bank asset-purchase programs are wound down.

As a natural consequence of positive economic trends the supply of safe liquid assets is likely to shrink in coming years. For example, governments in most developed countries will be reducing their issuance of sovereign bonds as deficits continue to shrink. In the United States alone, the annual increase in marketable U.S. government debt outstanding is expected to shrink from $1.1 trillion as recently as 2012 to $620 billion in issuance this year, a decline of almost 50 percent.

Increased demand for safe assets was one of the factors that led Treasury to develop floating-rate notes, the first new product issued by Treasury in 17 years. In conversations with market participants it became clear to us that there was real demand for a term security that re-set its interest rate on a regular basis and would therefore trade with relative principal stability. Issuance is still relatively small. We just began these auctions in January, but early results have confirmed that demand for such an instrument is indeed significant.

Another potential policy development that will have bearing on this question of where market participants will source liquidity in the future is the reverse repo program currently being tested by the Federal Reserve. It's possible that market participants will look to the Reverse Repurchase Program as a substitute source for safe assets. Some commentators have noted this feature of the program arguing that it would help expand the supply of a potentially scarce resource. It's important to note however that assets borrowed under the RRP, at least as currently structured, are not permitted to be re-hypothecated. Accordingly those assets would not be available for use as margin or collateral, for example.

Several structural changes are underway that are changing the way market participants interact and the nature of financial intermediation. For example, there has been a broad shift away from unsecured financing to secured-financing arrangements such as repo and securities lending. There's also been a trend towards increased electronic trading and increased use of central clearing. These evolutions in market structure are broadly positive, but as always it will be important to closely monitor these developments and the changes that they themselves bring.

No one wants to run a real-time stress test of market liquidity, but if we have to I think there are now some important mitigants to the conditions we faced in 2008 including less leverage among banks, which decreases the potential volume of sales and more central clearing with important counterparty protections.

The sudden rise in interest rates last summer provided a mini-stress test, if you will, of the market's ability to absorb an interest rate shock. Overall, the markets appear to have proven resilient in the face of the bond market sell-off. According to a recent IOSCO Report, smaller trade sizes and increased reliance on electronic trading helped to fill the void left by reduced dealer inventories.

I'd like to close my remarks with an anecdote that sums up several of the issues that I've touched on today and is an example of the kind of liquidity issue I think we should consider. I was recently approached by a fixed-income portfolio manager who asked me whether I was worried about the lack of liquidity in corporate bond markets. I replied that of course I was worried, but I was even more worried that he was asking me about it. I told him that he should be worried about promising to provide daily liquidity to his fund's investors if he believes the assets underlying the fund are not all that liquid. While there is an obligation on the part of policy makers to consider the impact of our actions on market liquidity, it's equally incumbent on market participants to pay close attention to liquidity and to take account of the changing environment.

I have now probably asked many more questions than I have answered, so I'd like to turn it back to you and to Martin to see if you can ask me a few questions about this. Thank you so much for your attention. (Applause)

MR. BAILY: Thank you and thank you for that great discussion. At the risk of being boring I'm going to ask you a question that you raised earlier which is the liquidity in corporate bond markets, and I guess if you think about the large corporations, their bonds seem to be very liquid, and the concern about liquidity is really about some of the small and medium sized enterprises -- I guess the very small are not going to go into the capital market -- but some of the medium sized enterprises and the lack of liquidity that may be in those. So, is that a concern to you? And that's a set of firms we really sort of want to encourage because we think a lot of the employment growth is going to come from those firms, and we want to get employment and investment growing. So, talk to me a little bit about the liquidity, not just of the overall market but of some of the small-firm bonds.

MS. MILLER: No, I think that's quite a legitimate concern and I think a few years ago, post-financial crisis, there was tremendous risk aversion among bond dealers, and they just simply didn't want to own anything that they couldn't immediately trade or transact in. I think that's gotten a little bit better, but I think -- what I hear is that given a new regulatory landscape, given new sort of business models that are less driven by transactions and trading revenues, I think the real problem is for smaller, less liquid securities that don't trade often in the market, there's not enough price information to really support carrying these bonds and making sure that they're deep liquid markets.

Now we are seeing some evolution in terms of investor-to-investor trading platforms. We're seeing more activity in smaller pieces. I hear this constantly that instead of large blocks we're seeing much smaller blocks of securities trade, and I think we do need to give it a bit of time for people to watch sort of the evolution of the market. If there's money to be made in trading these securities, I think that over time there will be an evolution towards some greater sources of liquidity.

A few years ago I was hearing a lot of concerns about the Volcker Rule and how that would impact --

MR. BAILY: That was going to be my next question, yeah.

MS. MILLER: Well, let me just jump right in there.

MR. BAILY: Go right away.

MS. MILLER: It was odd to be hearing about that years before the rule was even adopted, that this was harming corporate bond liquidity, and I think it was something that the regulators thought a lot about in really defining a very adequate, I believe, market-making exemption in the final rule, and the intent is not to stop trading and transacting in these markets but to make sure that there's adequate compliance and risk management so it's done in a proper way. So, I think we're going to have to take some time with this, but I think it is very important that new sources of liquidity develop in the markets and that they are developed in ways that provide adequate protection.

MR. BAILY: You were active in T. Rowe Price and so let me ask you this. We had quite a discussion on the panels earlier. We had several people on the panels that said, look, there was excessive intermediation in the period leading up to the crisis, so in a sense banks were lending too much or financial institutions were lending too much. There was just too much money slushing around, so yes, we've introduced a regulatory environment, and yes, it's reduced the amount of intermediation, but that's okay. Do you agree with that?

MS. MILLER: Well, I don't like the sounds of too much money slushing around financing things.

MR. BAILY: Well, this was before your watch.

MS. MILLER: Obviously I missed your panel in the morning, but give me a little more color on what people were driving at in that context?

MR. BAILY: Well, that there was too much -- that the risk premium was too low, that we had too much money flowing into mortgages and hence into banking, into -- excuse me, housing, so that in a way that, you know, Ben Bernanke has written about the savings glut and how a lot of money was flowing to the United States, and so we sort of had too much of that activity going on.

MS. MILLER: Well, this may not at all answer the question that you're raising, but I think that in the United States we do have a very highly-developed capital market system, and I think there were too many poor incentives in that system to secure ties, package and deliver risk into the capital markets that was driven by, probably, over-liquidity and low-risk premiums, but there are some market correcting factors there. If things are underpriced and people lose money, eventually the prices will adjust and things will come back into balance. What you don't want to happen is for that to happen in such a disorderly way that it impairs liquidity across the markets and secure assets, strong assets, are harmed at the same time that the more problematic assets are harmed, and I think that's what we saw in 2008.

MR. BAILY: I'm stealing again from the comments earlier and this was one that John Dugan made, and he was talking about liquidity tools and the need for liquidity tools, and he mentioned that as a result of Dodd-Frank, as he put it, we've preserved some of the liquidity tools we have. This is Fed lending or other sources of liquidity. We've added a couple. We've also restricted four others, and he was a bit concerned about and I agree with him on these.

So, the Treasury has had the exchange stabilization fund and that was used in the crisis, and Congress kind of took that away. They can't use it for that anymore, so the Treasury really doesn't have a slush fund to bail out -- I didn't mean to use that word -- to liquefy the markets if they need to.

The second one he mentioned was the FDIC Systemic Risk Exception which had been added in FDICIA was, as he put it, rather stretched in the crisis, but actually turned out to be a very powerful source of getting us through the crisis, and that has been curtailed.

And then the third one was it's now quite hard for the Fed to lend to individual institutions. It can lend under 13(3), and the final one was that it's hard to encourage bank mergers now because banks are under a lot of pressure. They're told they're too big already, and therefore they're not going to buy another bank, or even if you give them a lot of encouragement they're going to say we don't want to do that, and any case, we don't know what we're taking on. You're going to come after us if we buy this bank. Do you think those four add up to a concern about liquidity or you think maybe that's being overstated? How do you react to some of those?

MS. MILLER: Well, I think that broadly one of the important things that Dodd-Frank was making a distinction about was assistance provided to a failing institution versus assistance provided to solvent institutions, and I think it goes back to my point about credit impaired and liquidity impaired, and I think there are certain tools that you would drive toward a credit impaired, failing institution. There are other things that are available for illiquid but solvent institutions that need help in the moment, and I think probably the distinction is rather important in thinking about post-financial crisis; what are the tools that policymakers have and to make sure that they're being deployed in the right way.

So, the exchange stabilization fund, I'd say let's not overplay that. It's not a very big fund, and it is there to help us assist in currency crises if we needed to step in and support a currency market. So, it should not be, in my view, a tool that is broadly available to fix every problem that could arise in a financial crisis, and I think providing that protection was a good thing.

I think that some of the other tools -- I mean I'm not going to speak for the FDIC or its --

MR. BAILY: I understand.

MS. MILLER: -- policies or authorities, but I think that generally the thrust of the legislation and the world we're in today is to, if you're going to extend assistance and you can do that in a broadly available context as opposed to single institutions, then you probably are addressing conditions of market's systemic liquidity problems, and I think that's another feature of the legislation.

Again, I said no one wants to run a real-time market test on all of these things, but I think I understand the architecture and sort of the reasons for why things are designed the way they are, and part of the problem that I saw so clearly in 2008 is that people in the markets were just broadly confused. They did not understand the rules of the road or the playbook, and different solutions were being deployed in different ways for different institutions which led to different outcomes.

And if you're a bond trader or a bond investor and you have an idea of the capital structure of a company and the way it's supposed to work and the way things are supposed to work and suddenly it's not working that way, that's very, very confusing, and I think one of the benefits of the legislation in the world that we're in is that there's much more clarity about how things work in a resolution or how things can work in a period of market stress.

MR. BAILY: Let me ask you a slightly broader question. The level investments at the moment in the United States, the level of loans is pretty low; loans to assets out of the banking system, loans to deposits. It's hard to unscramble how much of this is because people are reluctant to borrow and how much of it is because people are -- banks or whoever are reluctant to lend.

Do you get feedback from -- I'm sure you do -- from people out there in businesses and other folks? Does that feedback suggest to you, or do you have a sense that we are in an environment where credit has been rationed or curtailed even though interest rates are very low, or do you think that the market for credit -- the reason we're not seeing more loans is because of a reluctance to borrow?

MS. MILLER: I would say that I find all the surveys and the data that I get to see on this question rather unsatisfying because they're generally very big aggregate numbers, and they don't give me enough granularity into the issues, and I think sometimes the anecdotes can overcome the reality, and so I don't want to do that.

I would say that a few years ago what I was hearing was more that it was a demand problem. Then we went into a different phase where small institutions were saying they simply didn't have access to credit or to capital. Today we've seen some broad recovery, again in aggregate in numbers in terms of loan volume from both large and small institutions. I'd say the smaller institutions are still lagging, but they're closing the gap, and we're paying a lot of attention to that.

I would say as an aside that one thing that I was very interested in a few years ago was the question of why we were seeing so little capital formation for new, young companies, and this is 2011. We convened a group of small companies, exchanges, venture capitalists, sort of the whole ecosystem of small companies to say what's going on? What is really happening because we'd seen such a sharp drop in public company IPOs, and we're hearing so much about the lack of access to capital, and I'm not talking about loans here but just more capital. And it was an interesting exercise in trying to find out all the reasons why small companies were struggling, and what we saw were more companies choosing to sell themselves as small companies rather than to try and grow through public and private capital sources.

And as you probably all know, that led to the passage of the Jobs Act the following year in 2012 to try to get at some of the causes of restrained capital formation, and like every piece of legislation, you're never done when it passes. There's all sorts of rule-makings and after-passage work, and we're paying a lot of attention to that.

We're seeing quite an increase in the number of IPOs. I certainly don't want to go back to the tech bubble of 1999, but I would like to see a healthy market for small companies.

And why do we care so much about that? We care about it because we know that small companies are the biggest job creators in the country, so anything that we can do to nurture and allow that type of growth I think is an important contribution to the overall economy.

But that leads to even more market structure questions about how do these small companies fair when they enter the public markets, and is there enough support for the stocks? Is there enough research following these companies? Do they find liquidity? Do investors fair well if they invest in these companies? And these are all ongoing policy questions.

Last week there was a big -- the last two weeks there's been so much discussion about high-frequency trading, and one of the features of that activity is it generally focuses on deep, liquid stocks of large companies, so in a high-frequency trading book you're not going to find a lot of the smaller companies represented. I'm going way off course.

MR. BAILY: No, no. That's great. Let me ask the audience if we have some questions. I hope we do. Okay, you're always our first in line, but I'll let you get us started.

MR. LEE: Thank you, Mary, for being here. Bertie Lee, banking monetary policy consultant. I'd like to come back to something you said in your remarks; that there might be a need for new sources of liquidity. Could you expand on that and what those new sources of liquidity might be?

MS. MILLER: I'm trying to remember what -- in which part of the remarks or contexts --

MR. LEE: It was towards the end of your remarks when you talked about the need for new sources of liquidity. You made that remark (inaudible).

MS. MILLER: I think that I introduced that idea in the context of a recent example of the Treasury of deploying our floating-rate note program. We have a stated desire to extend the average maturity of Treasury debt, but at the same time when we do that we are taking a lot of Treasury bills out of the market, and so in designing the floating-rate note program we designed an instrument that can have a term. It could be two years. It could be five years, could be longer, but has an interest rate re-set every quarter that keeps it -- I'm sorry. Rates re-set every week which keeps the price of it very close to a T-bill and makes it a highly liquid instrument.

In part, in testing that we were reaching out to the market and saying is there more demand for T-bills. It seemed that there was, but we had a different objective of issuing term debt. Could we design something that might put a new source of liquidity into the market? I think I also referenced a program that the Federal Reserve is testing.

If you were asking the question in the context of market participants, what I was raising at the end of those remarks is really the concept that I think all market participants need to think about providing liquidity, finding liquidity, and having it.

I sometimes think that the direction of regulation is largely been at the banking sector, and I think on the other side of the banking sector are the people who invest in securities, and they shouldn't be -- they should not be ignorant of the fact that they may need to carry more liquidity than they did in the past if the market isn't providing the same amount of liquidity. And so the question is where would they go to find that? What are the new instruments? What are the things that could supply that?

MR. BAILY: More questions? Yes, Paul.

MR. SALTZMAN: Mary, thank you very much for your insightful remarks. You'd made the point about the importance of the banking system self-insuring and not necessarily relying on the lender-of-last-resort as the sole or exclusive source of liquidity. Do you recognize at some point, at least conceptually, that there is a cost of over-insuring? In other words is there a cost to economic growth associated with too much liquidity in the system, and how do we go about evaluating that trade-off?

MS. MILLER: Well, I certainly wish I had the answer to that question. We don't know. I mean we're just in the early, you know, as they say, in the foothills of understanding sort of how the financial landscape is adjusting to liquidity requirements, capital requirements, et cetera. So, I mean I think we were concerned initially about, are there enough instruments out there to meet the demand for what the regulatory environment is setting up here? And I'd say our early answer is yes, but there's some areas where I see some reduction in things like sovereign debt that may be bringing down the supply. And whether that has an impact on cost, we don't know yet, so I applaud the desire to put more liquidity in the system. There is nothing more gut wrenching than not being able to find liquidity when you need it, and I've been there, so I applaud the steps that we're taking to put more liquidity into financial institutions. I think what I was saying is I think there are other market participants who have an equal obligation to think about these questions too.

MR. BAILY: Let me ask you a question on the international front. When you travel oversees you sometimes get the reaction, "Well, America's just doing all this financial regulation. It's not really paying attention to what other countries are doing." And I know that's unfair, but are you satisfied with the extent of coordination that we've been able to achieve in liquidity regulation or perhaps other areas of regulation? Is this something that you are involved with, regularly meeting with your counterparts in Europe or in Asia?

MS. MILLER: Well, I should begin by saying that of course I sit over the Domestic Finance Operation of the Treasury --

MS. BAILY: Yes, I know, but --

MS. MILLER: -- but there are many ways we touch the international sector. Many of my visits in international circles have been really to talk about the Treasury market with foreign investors, and I would say there that I am always so impressed with the confidence and trust people place in the Treasury market, and the importance of providing liquidity to the world through the Treasury market is always driven home when I have these meetings and talk to people.

On the financial regulatory side, I'm interested in sort of the pace of development, the take-up of some of the ideas that the U.S. has led with. I recognize that when you lead on anything, you become a lightning rod for all sorts of critiques and constructive comments about our regulatory process.

I most recently -- I was on a trip to Asia to try to do a sort of check-up on where they are on a number of things, and I'm interested in particular in the sort of evolution in derivatives markets regulation, and recently I've been very interested in the trade repositories and whether they will deliver on the promise of good insight into markets and exposures. So, I was having a lot of those discussions with our Asian counterparts, and I think what I felt there was that there had been somewhat of the wait-and-see attitude to see what is the U.S. and possibly Europe going to serve up together, and should we adopt or follow or engage here? What I felt on this trip was a lot more interest in engaging and sitting down at the table and sort of closing the gaps.

People often talk to me about regulatory arbitrage and whether things are going to leave the United States and go to other markets where it is more lightly regulated. I actually don't sign up for that at all. I know in my own experience when I was managing assets for clients, I did not look around the world to try to find the most lightly regulated market where I could put my client's money at risk. We were looking for good returns, but we also wanted to do it in places where we had the rule of law, we had good regulatory frameworks, and that we felt there were adequate protections, and I think that's the way people are looking at the United States. I mean there's a lot going on here. A lot's under construction, but I think if at the end of the day we restore confidence in the regulatory framework, the safety and soundness questions, I think there's a lot of opportunity for others to follow.

MR. BAILY: Yes. Well, I agree with you that the safety and soundness of the U.S. system is definitely one of its attractions and brings a lot of funds to the United States. I do hear though that derivatives trading may be -- some of that may be shifting overseas. Is that something you've heard, and are you concerned about that, or do you sort of feel good riddance to some of them?

MS. MILLER: I think we're in -- again, we're in the early days of bringing up swap-execution facilities and ironing out differences between regulatory regimes in the U.S. and other countries. I do think that there's some coming deadlines where Europe will be bringing into play regulations that will be narrowing the gap between the U.S. and Europe, and I think that our regulators have extended a lot of sort of time relief to sort of allow that convergence to happen. So, early days.

I'm watching the derivatives-trading activity pretty carefully on SEFs and how that's evolving and developing. I just mentioned I'm very interested in the trade-reporting side of this and how much insight we have into that, and frankly I think there's a lot of work to be done to make this framework strong, but I do like what I'm seeing in terms of the bones of what's been built.

MR. BAILY: Can I see if there's a -- come on. We need to get the audience -- yes, there we go. Marcus, good for you.

MR. STANLEY: Thank you. You made reference a couple times in your remarks and in answer to one of the questions as well to the need for better discipline and practices and perhaps more self-insurance by the buy side, by investors and asset managers, and, of course, that's been an issue of some controversy recently. There's been kind of a push by asset managers to claim that they don't pose systemic risk, and several SEC commissioners have spoken out about how this is not an appropriate area for prudential regulators to move into. Did you want to comment on that controversy at all, or perhaps on the Fed's upcoming wholesale funding rule and how that might move across both buy and sell side?

MS. MILLER: I can't comment on the latter thing. On the first topic, as you know, as probably most people know, there's a new group that Treasury chairs, the Financial Stability Oversight Council which is charged with looking broadly across the financial landscape and making sure that there are no gaps in terms of understanding or oversight or no ability for risk to develop that could threaten financial stability.

So, in the process of looking across the financial landscape, we are looking at the asset-management industry, and I'd say that that is still in the early stages of review to look at the activities of asset managers and to try to determine whether they present risk to the financial system that requires further oversight. I'm always very careful to say that we're really -- no judgments have been made. No decisions have been made. It's really a deep dive right now to understand the features of the industry, the practices of the industry, and I would say based on my own experience, too, that it is a very heterogeneous industry, so trying to understand the full range of players in the market and what sorts of activities they engage in is what we're up to right now. But I think the topic you're so interested in today is of great interest to asset managers, so.

MR. BAILY: Well, you were an asset manager and one of the arguments that my colleague, Doug, has made is that to what extent, when you're looking at asset managers, if they are in the business of pass-through -- in other words if they are basically doing what their clients want them to do -- if their clients want to sell U.S. stocks or foreign stocks or technology stocks or bonds or something like that, does that mean that the asset manager is a systemic risk or are they simply reflecting the variability that's going to be natural if people get spooked by certain kinds of assets --

MS. MILLER: Yep.

MR. BAILY: -- and want to move in or out of them?

MS. MILLER: I think the question you're getting at is whether the asset manager is acting as a principle or an agent in --

MR. BAILY: Exactly, and I should have said it in that clear a way.

MS. MILLER: I think for the most part, asset managers are serving as agents. I think where the risk can arise is if there is a stampede out of an asset class at the same time, and everybody is selling at the same time and whether there is collateral damage. I remember another feature of 2008 when certain classes of assets became highly illiquid and you couldn't sell them, then you sold the thing that you could sell, so we were seeing very odd outcomes where high-quality assets that were very liquid were performing as badly as lower-quality assets that you would expect to be illiquid.

So, I think sort of understanding how the assets are deployed and watching the flows and trends and seeing that there's adequate liquidity to meet demand when you need it. That's the key question --

MR. BAILY: You need to go? So, thank you so much. (Applause)

MR. KOHN: So our third panel is entitled: Liquidity needs in the post-crisis world and liquidity provision for bank resolution. So, I think we will -- some of our panelists will deal with the liquidity provision for bank resolutions. Others may be drawing together some of the other issues that we've heard -- we've heard earlier today. We have another terrific panel -- in this case, I'm going to go in alphabetical order -- not reverse alphabetical order. So, Randy Guynn is partner at Davis Polk -- he's head of their financial institutions work there. Paul Kupiec, resident scholar at AEI, former FDIC, former Federal Reserve. Paul Saltzman, who, everyone knows, is the Clearing House Association President. Marcus Stanley -- there he is -- policy director for Americans for Financial Reform, and Steve Strongin, head of Goldman Sachs Research, Equity Research, and former Chicago Fed. So, Randy, do you want to head it up, start it now?

MR. GUYNN: Okay. Well, I just have a picture here. What I'm going to talk about is the distinction between CAPM Liquidity, which we talked about some, and more importantly, the role of lenders of last resort, and the context of the rapid and orderly -- resolution of a U.S. Global and systemically important financial -- systemically important banking group, or GSIB, that has failed or is in danger of failing. I'll actually spend most of my time framing the issue, but once that's been done, it will be pretty easy to see both the need and the appropriate role for lenders of last resort in this context.

As almost all of you know, I assume, the FDIC has developed a strategy that it calls the single point of entry resolution strategy, or SPOE, for resolving U.S. GSIBs that fail or are in danger of failing. In less than two years, it's been widely endorsed in the U.S., and around the world, as the solution, or at least, the most promising solution to the too big to fail problem. On the screen is a highly stylized and simplified picture of a U.S. GSIB. Four subsidiaries -- three subsidiaries. I'll use it as a prop for illustrating the distinction between CAPM liquidity and the role of lenders of last resort in an SPOE resolution.

The SPOE strategy has four distinct features. First, the parent company, the one there are the time, is put into a receivership for bankruptcy proceeding. Let's see if I can get this to -- let's see. Should just be this arrow, right? Okay. Second, the parent's resources are used as a source of strength for its operating subsidiaries, but pushing losses at the operating subsidiary level up to the parent level.

Third, the operating subsidiaries are kept open and operating and out of their own insolvency proceedings. And fourth, sort of as a product of this strategy, the long term, unsecured debt at the top tier parent, is structurally subordinated to the short term debt at the operating company level. In other words, long term, unsecured debt acts as a type of buffer or debt shield between the short term debt and losses, thus reducing the incentive of short term creditors to run during a financial crisis, and reducing the need for liquidity, at the same time.

The success of the SPOE strategy, however, depends on the top tier parent of a U.S. GSIB, having sufficient, loss-absorbing resources on both the right and left sides of its balance sheet. Both the Fed and the financial stability board recognize this need, and are currently working on minimum loss absorbing resources requirements. The FSB refers to these requirements as internal and external GLAC. Of course, you have to have an acronym. Or, what it stands for is Gone Concerned Loss Absorbing Capacity.

The top tier parent needs enough equity, long term unsecured debt, and other capital structure liabilities on the right side of its balance sheet to re-capitalize the parent. This is what the FSB refers to as external GLAC. An undercapitalized or insolvent parent is recapitalized in an SPOE, in this picture. The old one had failed, the yellow one on the left, and the new one on the right is -- basically the FDIC or someone in a bankruptcy proceeding forms a new company, called a bridge financial company, and transfers all of the assets of the failed parent, including its operating subsidiaries, to the bridge, and leaves behind, in the receivership or bankruptcy, all of the parent’s equity, long term unsecured and other capital structure liabilities.

Because the bridge financial company starts out with all the assets of the failed parent, but none of its capital structure liabilities, the bridge is not only solvent, but even super-well capitalized. But that's only the recapitalization at the parent level, and you know, the first thing someone points out is that most of the losses are actually going to be at the operating subsidiary level. And that's where the left side of the balance sheet comes in. There needs to be enough assets on the left side of the balance sheet -- some of which, the FSD refers to as internal GLAC, but that's kind of a funny term. In any event, that is used to recapitalize any supporting subsidiaries that may need recapitalizing in an SPOE situation. Now, it's extremely important, at this point, to sort of highlight the role for a lender of last resort in this context, to make a distinction and emphasize a distinction between capital and liquidity. Assets need to have real and measurable value to provide capital. They do not need to be liquid to do so. Both liquid and illiquid assets count as capital. So, when we talk about the holding company, or the operating subsidiaries being recapitalized, that doesn't mean that they are fully liquefied. Now, assuming that a U.S. GSIB has sufficient internal and external GLAC, an SPOE strategy can quickly separate a U.S. GSIB into a good bank and a bad bank. The good bank is the super-capitalized bridge financial company, and it's newly acquired operating subsidiaries that have been re-capitalized by down streaming the assets from the bridge of the operating subsidiaries that are in need. The bad bank is the failed parent, and its liabilities left behind in the receivership or bankruptcy, which is illustrated here by the yellow box. So that's the framework of SPOE.

Now, we get to the role of lenders of last resort in an SPOE resolution. The bridge and its newly acquired operating subsidiaries are now re-capitalized. That's why I refer to them as the good bank. But SPOE will not be successful unless the good bank has access to sufficient liquidity.

If the market has sufficient confidence in the capital value of the goof bank, it should be able to transform its illiquid assets into cash or other liquid assets, through market facilities, including a dip financing facility. But that's true only if the market is operating normally. The problem -- in the situations we're usually talking about, the market is dysfunctional. And even good banks may not be able to get enough liquidity from the private sector -- that's exactly why we have the discount window for good, insured banks, and for the uninsured U.S. branches of foreign banks -- good foreign banks during a financial crisis. But now, let's compare it here. The bridge financial companies and their non-IDI, Non-Insured Depository Institution subsidiaries, are not insured banks. They're not even uninsured IS Branches of foreign banks. They're not otherwise eligible for the discount window. Even if they're super-capitalized, uninsured good banks, very similar to what does have access. So, who will be the lender of last resort for them?

If the answer is no one, then we may be faced with another Hobson's Choice between taxpayer funded bailouts and a fire sale liquidation of an indisputably, well capitalized good bank. We know, from decades of experience, how that dilemma will be resolved. Bailouts will be inevitable. No responsible decision maker, no matter how committed he or she is to the free market, or avoiding moral hazard, will risk forcing the public to eat out of tin cans or live in shanty towns because of not providing liquidity. The Orderly Liquidation Fund, in a Title 2 proceeding, the Orderly Liquidation Fund will act as the lender of last resort.

The FDIC has said, and this is not necessarily in the statute, but this is their policy, that they will only use this lender of last resort authority in accordance with the rules established by Bagehot. That is, they'll only lend to entities, all of which, by definition, have been re-capitalized, or solvent and well capitalized -- they'll only provide liquidity on a fully secured basis, and only at above market interest rates.

Now, this was developed for title 2 of Dodd Frank, but it could actually be used in the bankruptcy code, either using a current provision -- 363 of the bankruptcy code, or with a new Chapter 14 that some people proposed. In that context, a Fed could function as a lender of last resort in an SPOE under the bankruptcy code, except for one thing -- the condition imposed on section 13-3 by Dodd Frank creates enormous uncertainly, and possibly some real hurdles about whether it will be available to a good bank in an SPOE strategy under the bankruptcy code.

So, in conclusion, if we think that it would be useful for the bankruptcy code to be a viable alternative to title two, and reduce the need for title two which, I happen to be a person of that belief, then we actually need to resolve this issue, and we need to have a clear lender of last resort authority, that can provide liquidity to a good bank, an indisputably good bank, in an SPOE strategy under the bankruptcy code. Thanks a lot.

MR. KUPIEC: Hi. I want to first thank the organizers for inviting me. It's quite an honor to be here among all these smart people, and I'll try to keep up with the rest of you. So, in this session, I sort of had to decide what to talk about, and that was a tough thing. Liquidity is a big area, but what I decided to do -- first, sort of have this beef.

I think that the hard wired liquidity rules are really an expensive thing for the economy. I mean, basically, the LCR says that every bank, every day, must be prepared to meet a 30 day run. Okay, so every bank has to self-insure for a 30 day run. NSFR says you have to be prepared to have a very tough year, where you assets roll off and your liabilities -- and they're matched for a year, so everybody has to self-insure for a really bad time. All the large banks.

You have a whole lot of liquidity locked up to meet the rules. I don't see how this can't but restrict bank credit and push intermediation out of the system, and many of the people up here earlier today said that. So what I think is, in this post-crisis world that Don told us to talk about -- in the new world, when we move forward -- I think we need a market for systemic liquidity, and I will say that this is my idea of a market of systemic liquidity, but after talking to Darrell Duffie at lunch, he thinks that some other folks have some similar ideas and I'll track those down and give them credit, but right now, I can only tell you what I've been thinking the last few days.

So, I think the Federal Reserve should, in the future, figure out how to sell systemic liquidity options. If the systems need liquidity to avoid a crisis, the Feds going to have to provide it. They're the only ones who can liquefy things, and so why not get paid to provide liquidity insurance ahead of time, and it goes back to the taxpayers. And so I'm thinking of something that I would call a systemic liquidity option, and it would work in my roughed out idea, something like this. And do I have all the details down -- absolutely not. But here's sort of the big picture.

So once a month, periodically, the Fed would auction one month options that would allow a holder to repo collateral overnight with the Fed. The Fed would set the haircut and the repo rate on specific collateral -- specific types of collateral. They could offer a series of haircuts. They could have a big, small -- you know, smaller, bigger haircut than is in the market, but relatively small, and maybe a medium sized haircut over the market and a larger one.

And, the contract should cover the collateral that's typically used in the market, and they would take dealer bids from -- bids from dealer banks. And in my world, they would take bids from people in the shadow -- firms in the shadow banking industry that are qualified, but under 13-3 rules, maybe they can't do that, so we might have to work on that a little bit. But they take bids form the dealer -- dealer banks and other qualified firms, and -- who would big an option premium rate and a quantity of these repo options they wanted. The Fed would decide how much insurance they want to issue, just like they did in some of the past auctions during the crisis. And the repo holder -- the person that buys the repo -- the institution that buys the repo would have the right to post the collateral with the Fed overnight for as -- on the terms of the repo contract for as many nights as it wanted in the option active month. So, it could be one night, it could be many nights. And at the dealer banks, whoever buys these repos could resell them, so there'd be a secondary market in these liquidity options, partially used options, so there'd be a real market, I guess, for used options.

Anyway, primary and second -- there would be this trading, and the secondary market prices would allow the Fed to monitor liquidity constraints in the repo market in real time. I mean, one of the big problems in the last crisis was, the Fed didn't really know what was going on into the repo market until it was a real problem. And, with these kind of things, you would be seeing daily dealer quotes, secondary quotes on what these liquidity options were trading for, and they could reopen if they wanted to, or if they thought.

And once these things were in place and issued every month, it would be a form of liquidity insurance. I would envision the Fed would not dominate the market, it would price an option so that it was insurance under a haircut bigger than the market, but if the market got into trouble, and it needed to use this strategy to provide liquidity, it could easily adjust the haircut, so that it would be at the market -- it could make the market, by just adjusting the terms of the option. Just an idea.

So, anyway, to make these -- to make people want to buy these options, you'd have to adjust the liquidity regulations. You'd have to adjust the LCR and the NSFR so that you would get credit for these liquidity options, and right now, in the LCR, for example, there's a whole bunch of collateral that gets a 50 percent haircut or a 15 percent haircut, and it's limited to 40 percent of the high quality assets. If you had one of these -- if you owned one of these options -- these overnight options, well, you'd be able to use that collateral, you know, at the haircutted value in the option. You would have bought the right to use it -- the central bank credit. You would have paid for it ahead of time. The Fed would get a fee for it.

So, not only -- why does this help the economy? Well, not all of the large institutions have to fully self-insure each and every day. So, the insurance somehow gets pooled, we need less of these assets tied up for insurance, and if we created the appropriate regulatory incentives for non-financial banking institutions, they would buy these things too, and use these things too. So, it's really a market base substitute for something like Jeremy Stein's Uniform Regulatory Haircut Rule, where he wants to expand -- he says, we can't just do it, you know, in the banks. We're going to have to be able to regulate haircuts throughout the financial system. Why don't we introduce a market that somehow gives us information back in real time, and we get paid for this insurance, since we're going to have to insure it anyway. And Gary Gorton's got some things on limited purpose banks. So, I'm going to stop there, since I'm out of time. Thank you.

MR. SALTZMAN: Hello everyone. I want to thank Doug and Martin for a great conference. The level of discourse has been fantastic, and thank you all for paying attention. There are benefits to sort of going later in the program. You get to comment on the panelists that are preceding you, which I'm going to spend my five minutes on doing. The negative is that many of the people that have preceded you have already stolen your talking points. So, I'm just going to be very brief and perhaps save the remainder of my time for the panel discussion.

I do want to comment on Charlie Calomiris' point. I do think it's worth belaboring a little bit -- this notion that liquidity risk is a manifestation of insolvency risk. I do think, as a paradigm that really needs to be questioned, the consequence of Charlie's observation is that capital is the solution to all problems, and I think, as we heard earlier, that's a regulatory panacea too often and we need to sort of rethink that. So I was pleased to hear that Mary was focusing on market liquidity. Too often we're focused on the resiliency of intermediaries, and not enough focused on the resiliency of markets.

I do think it's a little late to be questioning the fundamental premise underlying bank liquidity regulation. The fact of the matter is, the LCR and the net stable funding ratio is here to stay, whether we like it or not, and I think we need to learn to live with it. I would say that one often forgotten paradigm is that regulators forget that the marketplace often accelerates the implementation of rules and regulations. And if you listen to bank investor calls, bank disclosures, they're already talking about compliance with LCR and Net Stable Funding Ratio Parameters, so, again, although I would welcome this sort of fundamental review of the costs and benefits, I do think we need to understand and appreciate that we are going to live in a world where we do have very prescriptive bank regulation of liquidity.

A couple of keep issues in the bank liquidity space that haven't been mentioned, that I would just bring to your attention. Number one, we haven't really talked about the disclosure impacts of bank liquidity regulation, and whether or not that's a self-fulfilling prophecy. Banks need to disclose where they are in terms of LCR coverage. If they drop below LCR coverage, are there disclosure obligations that create the very self-fulfilling prophecy of bank runs that we were trying to avoid?

The other problem that the industry is very concerned about is, when you look at the bank liquidity regulation, there's no credit for mitigation. It kind of assumes a cliff effect -- it kind of assumes that all of a sudden, J.P. Morgan's 500 billion dollars of level one assets just go poof, and there won't be management actions to reduce the balance sheet or de-risk. I think that potentially leads to the over insurance that we were talking about before. And then lastly, again, something that might be a little more self-evident to those in the industry is, just like CCAR has become the binding constraint, you know, superseding really, the Basel and Fed Capital rules, I think it's pretty self-evident that at least, on the industry side, CLAR and liquidity stress testing will rapidly become the binding constraint. So, it's nice to talk about all the prescriptive rules, and so forth, but I think it's highly likely that the Fed will impose CLAR type framework on liquidity.

The next observation -- kind of interesting. We were talking about how difficult it is to distinguish between classic theories of lender resort liquidity lending to solvent institutions. I do think it's important to appreciate that one of the benefits of CCAR, of CLAR, of Capital Regulation, of Liquidity Regulation, at least with respect to the banking industry, is that that probably enhances the ability of the central bank to make those difficult determinations. They now have a plethora of data about what bank balance sheets will look like under various stress circumstances, so that difficult determination as to whether you're lending for credit impaired assets or liquidity impaired assets might be a little easier, so I would offer that for discussion a little later.

The last thing that I'll talk about, which I suspect will mix it up a little bit on the panel, is it's terrible disconcerting how the political dynamic has redefined lender of last resort liquidity as somehow being a bailout. Central bank liquidity and the Bagehot functions that have been around for 200 years, somehow now is getting this you know, re-characterization as a bailout, and it's very important that we not conflate those two concepts. Very, very different.

And then lastly, I'll just say, it's also interesting how very little discussion has been had about the impact of all this liquidity regulation on monetary policy, and maybe Don, we can talk a little bit about that on the panel. Is the discount window in an anachronism at this point? You know, central banks do often impact liquidity for money supply purposes, and it's not just about sort of providing liquidity to the system, so it'd be interesting to mix that up. So, with that, I'll just stop and turn it over to my fellow panelist, thank you.

MR. STANLEY: Hi. So, I'm Marcus Stanley. I'm the policy director of Americans for Financial Reform. We're a coalition of public interest groups working for stronger reform of the financial system, and it's often my role at these kind of events to say the things that none of the other panelists say, to kind of hold down the left end of things, and so I'm going to start out by doing exactly that, and say that I really don't believe that Dodd Frank has restricted lender of last resort liquidity assistance, and that it may even have increased it. It's changed it, that's certainly true, but it may even have increased it.

And I take it that John Dugan took on this issue before I came, but you can see three of his new limitations there on the left side. FDIC Debt Guarantee is requiring congressional approval, they haven't disappeared, but they require fast track approval. The exchange stabilization fund cannot be used to backstop money market funds, though it can be used to backstop other things, interestingly. And of course, the restriction on emergency lending to individual institutions, but against these three, we have three new avenues for liquidity assistance that I think are pretty important avenues.

One is, the discount window access for financial market utilities, which could become quite important, especially as more and more things get moved to central counter parties, the Treasury line of credit, the Orderly Liquidation Fund for failing financial institutions, and third, I think that there hasn't been enough attention paid to the significance of the way the Dodd Frank Act, even though it takes away, 13-3 lending to individual institutions, really gives statutory ratification to so called broad based programs, for multiple institutions.

What the Fed did in 2007 through 2009 was really historically unprecedented. Really pushed the boundaries of 13-3, and most of the money that went out in that period wasn't to individual institutions, it was through a whole alphabet soup of different facilities that supported broad markets. But sometimes, very narrow, those facilities were often dominated in their use by very narrow set of institutions. Two, three four, maybe not two, but three, four, five different institutions. And that is -- now there's explicit statutory permission for that.

And, the impression -- this is important, I think, is strengthened when you look at the actual Federal Reserve rules, the policies and procedures for 13-3 lending, which came out a couple of months ago, and there's really almost no specific restrictions there. There's no restriction on the duration of program use, how long you could be dependent on these programs, there's no realistic solvency check for users of the program. There's no definition of broad base beyond not being a single company, and there's no specification of Bagehot-type penalty rates fort use of the program.

Now there is -- it is secured lending, it is lending against collateral, but there's a circularity there, in that the value of the collateral may depend on the availability of 13-3 emergency lending. If you're supporting a market, then, you know, that collateral is fine when the market is supported, but it starts to become difficult to withdraw that collateral.

Now, in terms of single point of entry, we've already had some discussion. The commitment in single point of entry seems to be to keep the subsidiaries open. That's going to be a very demanding of liquidity to do that. I mean, one number, I should have put it up here, the largest private sector debtor and possession loan in history is 8 billion. For the largest global banks, they have about three to four hundred billion in short term liquidity needs, so you look at the gap between eight billion and three, four hundred billion -- that's a big liquidity hole.

Now, the Treasury line of credit, you know, the Orderly Liquidity Fund is secured by the value of the company -- 90 percent of the value of the company, but once again, we have something of this circularity problem, that the value of the company is dependent on the availability of liquidity, then it becomes difficult to extract yourself out of that liquidity without losses. And there are provisions to repay the losses -- any losses that are incurred to the Orderly Liquidation Fund, but there is an effectively unlimited period to do that. It can -- it's five years and infinitely extendable, in terms of the repayment period.

So there's potentially serious exposure there, and I just wanted to end with, I think, an apropos quote from Ben Bernanke, from the Open Market Committee transcripts that were recently released, in which he says that the idea way to deal with moral hazard is to have a well-developed structure in place before the crisis, that gives clarity on the terms and conditions for the use of lender of last resort support. And I don't really think we're there yet. I'm not going to tar lender of last resort support in saying it's always a bailout -- there's a long tradition, but I think the structure and limits on it are critical, and I don't really see that structure and limits there in the combination of SPOE and the 13-3 emergency lending authority, yet.

MR. STRONGIN: It's a pleasure to be here. I assumed, and when I was talking after Marcus, said the only thing that I would be doing is responding to him. Instead I'll say I agree with what Ben just said. I actually want to talk a little bit about the question David asked, and Mary raised today, which is, what's on the other side of it.

I think one of the reasons liquidity rules themselves have not generated a tremendous amount of anxiety on the part of the banks goes back to what Adam said. I think it actually reflects the way that most of the major banks looked at their liquidity to begin with. I think the point where it potentially has some interesting policy implications is what happens when you're stressed. There is a very big difference between internal policies and guidance, and formal rules. Because, if it's internal policies and supervision, and you get into an emergency situation, and the right answer is to draw against those numbers. You can't. If there's a formal bright line that says you're supposed to have at least X, then all of a sudden, that can become a very hard boundary, and become a binding constraint. So, the formalization of what had been good industry practice may actually become a real problem.

And I think Mary pointed to the place to look, which is the market liquidity. You know, one of the interesting things, when you sit through a conference like this, especially a good one, and I think it has been that, is understanding the shared perspective of the speakers, and then asking the question, is that really the perspective you need for the whole question? And one of the things about today was, the definition of liquidity in almost every sentence was, funding for a bank. It was not liquidity for an asset or liquidity for a client of a bank. And so, as you hold liquidity in the bank, the real question you want to ask is, what does that do on the other side of that line? What has it done to market liquidity, what has it done to available client liquidity?

The answer is, as Adam put it quite succinctly, is it will change the products and prices. And as Mary put it, and that will cause the asset managers to change their behavior. Well, that actually has happened, and I think in thinking about the changes we have seen, you begin to get the answers to the questions. Martin asked the question, what is lower liquidity? When you look at the corporate bond market, what you see is roughly the following -- the top tier of assets trades today about the way it traded five years ago. The mid-tier of assets trades about 20 percent less liquidity. The bottom third trades with about 40 percent less liquidity.

The response of the marketplace to that has been to shift their portfolio to valuing liquidity. You see it in the prices of corporate bonds, you see it in the prices of certain types of stocks, you see it actually in the structure of companies. You can fund cheaper if you're large. That's not banks, that's regular corporations.

You know, you place 49 billion of Verizon debt in a half an hour, a high yield bond will take an extra hundred basis point of commissions, and will take two weeks to fill. So you've changed the funding costs across corporate America, you've changed the optimal corporate structure across the entire economy. And that has real implications. Not super well defined.

Mary made the argument, in essence, that it would hurt jobs, because those other companies are the job creators. I actually believe large corporations create jobs. So I won't take that as exactly the given. But I do think it does raise questions about where we're going. It also raises a different specter. You know, the other thing I was thinking about today, speakers, is how all of us are clearly all tarred, feathered and focused on 2008.

My first crisis was '87, and I think if you think about the spectrum of liquidity, what we have done is substantially reduce the probability of an '08 style, where the banks ran out of funding, and substantially increased the probability of an '87 style problem, where the markets ran out of liquidity. Because under a stress environment, the banks are not going to be able to provide that liquidity out, and so the markets are -- and you're already seeing this, in the way markets act. Every risk adjustment today, and you saw this with respect to what just happened in emerging markets, you saw it as the Fed did tapering, the ability of the asset managers to move their portfolio around to substantially reduce. What that means, in practice, is asset prices move more. That, in general under real pressure, creates price gaps, and prices begin to stop trading.

Now, that works differently with different markets. And that's something that isn't well understood in these discussions. High quality markets, short term funding markets, tend to stop. They're not well structured to deal with greater risk. You know, I run research at Goldman Sachs -- this was mentioned. Well, at any given time, myself and my counterparts across the street are managing a couple thousand people who analyze equity risk. We're managing a couple hundred who analyze bond risk. We're probably collectively managing less than one person who's analyzing short term debt risk.

And so, when the short term debt markets have a problem, they stop. The large markets gap in price down and continue trading, exactly what you saw in the crisis. And so, we're creating a situation where we're probably going to replace funding problems at banks with market volatility. And the social costs of that are going to be complicated to assess, but very real. The other thing we're going to do, as we stop banks from taking on that risk, is we're going to keep it in the real economy.

And as we keep it in the real economy, it'll be the factories and inventory, financing, and all of those things that suffer through the next crisis, rather than the short term banks, and the short term debt market for banks. So we're transferring the risk, we're not making it go away. The risk we made go away is economic activity that didn't happen. Hopefully there's not too much of that, although the evidence suggests there is at least some. So I think, as we look at these questions, going forward, we really do have to think about that dynamic of bank funding risk versus market risk, and begin to ask what that tradeoff is we want to take.

And lastly, and this goes back to something that Darrell was bringing up.

We also, I think, want to look at what the causes of the problems of these markets are, which again, differs. In the short term market, the core issue is the ability to value collateral. What we are doing in this process is essentially causing people to hold liquidity buffers against the uncertainty and how you will value that liquidity in a stress environment. Perhaps what we really ought to be looking at, is how do we adjust market structure to make it easier to get prices on that short term collateral, because government guarantees have one aspect of this, Charlie talked about that, lender of last resort is essentially the government's saying "floor," below which those assets will not be valued. One could think of clearinghouse types of arrangements, they're the things that give us better prices, but really what we probably ought to be focusing on, if we want to system to work well, is how do we improve those prices as opposed to how do we buffer up the system. And with that, I will stop.

MR. KOHN: Alright, another terrific and thoughtful set of panelist comments. Let's see if we can lead off the discussion. So, thanks for a terrific set of comments again. I'd kind of like to start with the -- where Steve left off, or explore that topic, because Mary brought it up too, the intersection between liquidity -- funding liquidity requirements and market liquidity issues.

So, and I guess I'll start with Steve and go down the line -- anyone else with comments. When people talk about the erosion of market liquidity over the last year or so, they often reference the Volcker Rule, leverage ratios, risk aversion in the wake of the crisis. How important are these liquidity requirements to that development, and are there things the authorities could do with liquidity requirements to ameliorate these adverse effects?

MR. STRONGIN: I think one of the things that's made this very hard is the sheer number of rules. One of my colleagues has commented a couple of time, that if it's a three, four letter combination of letters that it's a banking rule. And you know, there's a real probabilistic, sort of very complicated math issue that we now face on a daily basis, which is, we find ourselves estimating product line by product line, what is the probability of various rules binding.

Okay, so that in the matchbook zone, which Mark, I know, talked about earlier. It's the liquidity rules and leverage ratios that tend to be the binding rules. They're low on risk but high on balance sheet, so those activities tend to get bound there. The issues with high yield bonds would almost certainly be the capital rules and CCAR rules, and the Volcker rules, which would tend to bind you there.

CCAR and Volcker, together, penalize stuff where you're going to have to warehouse it. Because under Volcker, if you're having to warehouse it, the regulator could decide it's a prop trade. And under CCAR, you have to hold it for a long time, there's a chance it gets caught by the shock. And so, your willingness to warehouse for a client has been substantially reduced by those two rules. In anything that is lower liquidity in the corporate debt market, the equity market, or the commodities market. Those two rules are not that important outside of those markets. There the other rules are binding.

MR. KUPIEC: You know, I think the unintended consequences of these liquidity rules in a crisis. Circumstance is something that needs certainly more study. I mean, if everyone is rushing to acquire high quality level assets, what will that do to non -- the liquidity, the markup liquidity of non-high quality liquid assets. You're essentially replacing governmental determinations of what's liquid with -- or, you're replacing private sector determinations of what's liquid, with public sector determinations of what's liquid.

If a bank says, hey look, I see a positive return on a level two asset, I really would love to buy that -- I'm otherwise solvent. Oh, I have my LCR or my CLAR and whatnot, so I think more study needs to be in that regard.

MR. STANLEY: Well, the Fed has specifically said that it's going to draw down the LCR limits in periods of market stress, and I mean, the purpose of liquidity reserves is precisely that you would want to draw on them in stress periods, and you know, the feds specifically said in the rule, it was going to permit that. I so believe that they're going to permit that. And in a way, what you can look at liquidity reserving is doing is moving lender of -- , it's taking a stock of resources for something like, not lender of last resort exactly, but that liquidity backstop and moving it out of the government, and into the private sector, and you pay a higher price in good times when you're holding that reserve in the private sector, but you do get to use it in bad times. So you can think of liquidity reserving, I think, both as a counter-cyclical, and also is related to monetary policy.

MR. KOHN: Do you see this adverse connection between the liquidity requirements, the funded liquidity requirements, and the market -- the deterioration of market liquidity that others have noted?

MR. STANLEY: Well, I mean, this is not something -- unfortunately, I don't have a staff of thousands of analysts to look at these issues for me, so I'm not going to get into modeling kinds of issues here, but I guess I would say something about this issue of market liquidity, which is that I think in the wholesale funding markets, and this goes back to what Doug was saying about maturity transformation.

The people figured out how, in the wholesale funding markets, to do very extreme maturity transformation in a sort of non-institutional, uninsured environment, through the medium of collateralized lending. And that was great, and the liquidity promises that were made in terms of having access to your money in the short term -- short term, were great, until the music stopped and the challenge we're faced with now, is wow, you know, we understood bank runs in the institutional context -- how do we deal with bank runs in this sort of wholesale funding context. And I think what Steven said about having only one analyst on the short term funding side was very telling too, because there is -- we're -- how are we going to get that market discipline in there? And I think that having those reserves are kind of a way of trying to mutualize that risk a little bit. Not mutualize, necessarily, but create a private sector backstop for that risk.

MR. KUPIEC: I think liquidity and liquidity regulation -- the LCR and the banks are the first, are the first round. I think the stricter these are, the more it moves into the shadow banks, and I think the FSB and other people are on record, basically saying we're going to have to regulate liquidity in the shadow banking market, which is repo and other things, and the repo run. And the thing about that is, things like collateralized, overnight lending, repo, they serve a purpose in an economy. Now, there's this notion, since the last crisis, there must have been too much of it -- there was excess liquidity. But as a profession, there's a whole lot of literature that says, you know, people take long term assets and they use them to borrow short term as inside money, and it serves a very useful purpose. Growth is higher in all kinds of macro models when you have inside money.

So there's a right amount of inside money. Now we, as a profession, don't know if we have too much inside money, or you know, not enough inside money, and if we -- the liquidity rules, pushing things to the shadow sector, and then if the next step is treating shadow banks like banks, and putting the same banking regulations on all the shadow banks, you know, we've got this bank constrain mentality. And I don't think, as a profession, we know the effects of that. I think the private markets do things for a reason. Sometimes they go to excess, but let's hope most of the time, it's actually for a productive purpose, and sorting out when enough is enough and too much is too much is a hard question.

MR. KOHN: Maybe this goes to the issue of price versus quantity restraints. So, there were certainly repos done against illiquid collateral. Bear Stearns is a good example. And that stuff -- those collateralized loans collapsed. And they lost access to liquidity, and it was clear ex-post that those weren't priced appropriately. They were priced to be more liquid than they turned out to be. So there are ways of regulating here, but one is to build -- the externalities into the price, without necessarily setting ceilings.

MR. STRONGIN: We have to be careful. Marcus made a comment in there that I think it's important to understand why you can't do that. He said it's important to get appropriate market discipline into those markets. When you talk about a short term instrument, there is no information to analyze. You know, 30 or 40 years ago, you had a correspondent banking arrangement where a bank actually knew that the weekly balance sheet of a company was. You only have quarterly information on these firms, so your ability to analyze how risk changes from week to week simply doesn't exist. So, you're really assessing their long term debt risk and applying it short term. Because that's all you can do.

Right now, there are certain instruments in ABS and other things, one you can think of is macro instruments. But I think, in the broader sense, particularly, of the corporate specific instrument, the short term debt market is a logistics exercise of short term funding, and needs to be safe. And I think one of the most important aspects of SPOE is it segments the risk. It makes the risk holder the long term debt holder, and says, we're going to put lots of protection in front of the short term debt holder, who isn't prepared to take that risk.

And so, you get the right market answer by structurally protecting the short term debt holder, not by getting the market incentives to be analyzed correctly. You actually reduce the risk, which is a different kind of solution.

MR. KOHN: Right. And there was the point, I think, Randy made in his presentation about using the long term debt to protect the short term debt, which gives me a way of transitioning, I think, into.

MR. GUYNN: Let me actually comment on that last point, because, I'm probably the only non-economist here on the stand here, so I hesitate, but it does seem to me that there was this discussions about cost benefit analysis, and some of the prior panel, and I know that Mark Van Der Weide and others, you know, raised the skepticism about the ability to sort of measure the benefits of some of these things. But I think one can actually measure the cost, and I'm not sure that one shouldn't at least have an economic impact study of the cost.

So, for instance, if you say, if in fact the banking system is forced to over-insure both in capital and liquidity, for various policy goals, it must be the case that corporate America says, well if the banks are going to be more constrained on lending to me and providing liquidity to me, I'd better self-insure as well and maybe over insure, lest I find myself in a financial crisis, and unlike the last one, not have -- if Steve's right, not have ability to get liquidated from the banks. And so, and it seems to me, it's worth studying that to find out whether we've hit the right balance. And again, not sure how you measure the benefits, but certainly you can measure the cost of saying that there must be some kind of an overhang on the economy if people are over-insuring.

MR. KOHN: It's a tricky question, in part, because yes, the regulations raise the cost of intermediation just -- not in the current situation, where interest rates are at zero, but in most situations, the Fed could offset that with lower interest rates to get the economy back to full employment, but there would be a different set of intermediation patterns. But I mean, it's a good point, look at -- we need to look at how we're forcing those intermediation patterns around, and whether we're creating more risk and more dangers outside that system. Okay, Marcus, and then Paul.

MR. STANLEY: I'm just having -- I find myself kind of bewildered here. I mean, first of all, to the point you said about Fed control of interest rates -- I'm having a hard time seeing where the real economy cost comes form if it's not mediated through interest rates. At least, the bulk of it. And the Fed has had a lot of success in keeping interest rates down.

I mean, up and down, the bond markets, including for higher risk kind of debt. You know, spreads are low, the absolute borrowing rates are low, and a lot of -- and when you look under the hood of these cost benefit analysis models, which, I don't think -- you know, the Fed does a valiant job, but I think they're problematic, because I don't think macroeconomics really understands the cost of financial intermediation, or frankly, I don't think there's a macroeconomic theoretical proof that fractional reserve banking is a necessary thing, but when you look under the hood, there's like, in the DSGE model, you add on, exogenously, an extra charge onto the interest rate, you know, from a higher capital ratio, or more liquidity, and that's done kind of in this ad hoc way, and I'm kind of like, why can't the Fed make that go away. So, you know, I just am somewhat confused by how -- the theory of how these costs work. That's a confession of ignorance.

MR. KUPIEC: Let me take a stab at that. So, there's this kind of ironic thing that we have, and I was a regulator for years, and regulators want market discipline, but a bank run is market discipline. We want to talk that we want it there, but when it happens, we hate it and we want to stop it. Now, one of the discussions last panel was, why -- what's this maturity transformation value, and I thought there was a big literature in banking, and I'm thinking there's some guys in the audience that have written articles I've read in graduate school, about, the banks issue short term debt and invest in long term, because the short term debt is the deposit -- the ability to withdraw your deposits -- a disciplining device, that you've got no vision on what the bank's investments really are, but the fact that you can come in and take your deposit out at any point in time, you know, scares the bejesus out of the bank owner, and he controls his risk. It's a disciplining vice.

In corporate finance, you use short term debt, because it's cheaper -- because the short term debt holders have the option to get out sooner, right? Long term debt costs more. So, if we're telling the banks they have to fund themselves much longer term, there is a body of literature and finance, I think, and you can argue with me, that says the cost of financing a bank has got to go up. Now, they either got to make less profits and live with it, and not charge higher loan rates, or they're going to pass the cost on. So I think there's a body of corporate finance and banking literature, at least, the one that I read, and maybe I read it wrong, you know, my professors would tell me that, but I think it says that. I think we know that.

MR. STRONGIN: Can I add a number or two onto that? Which is, because the cost on a macro base is -- you're right. The Fed under normal circumstances, when it doesn't have zero rates, could offset the macro costs, but it does change the relative prices of things, and in particular, and you can see this in the market today, large corporations fund today cheaper than they did pre-crisis.

Small corporations fund 100 to 200 basis points more expensive than they did before the crisis, because they're more dependent on banks. So, what you've really done is you've shifted the cost of funding across different customers. The more they needed banks, the higher their funding has been. The less they need banks, the lower their funding now is.

So you've changed the structure of the U.S. economy with these banking rules toward large corporations, particularly multi-nationals and large (inaudible), and away from small and mid-sized businesses. You've had equivalent impact across consumers. The average credit card for someone who earns more than 250,000 dollars today is essentially what it was five years ago. For someone who earns less than 100,000, it's about 300 basis points more. You've changed the relative prices of who need a bank, and that has changed the economic outcome.

Now, you may view a small business and a large business -- okay, that averages out, and that poor person, that rich person, that averages out, but to those people, it doesn't average out so well.

MR. STANLEY: Right. I mean -- a couple of things just in quick response to that. With the thousand researchers, I'm sure your data is more up to date than mine but -- on the entire street, but you know, I think, for at least a couple years post-crisis, some of those differentials in terms of the banks were frankly due to the capital overhang of undercapitalized banks prior to the crisis. That there was -- that attempt by banks, that need by banks to recapitalize themselves post crisis, you know, did have an impact, and that's actually -- I think you have to look at that as a cost of undercapitalization prior to the crisis, more than a cost of rules post crisis, because I think the market was demanding that, and would have demanded that independently of the regulators. So I think there's something about the bank stresses that relates to lower capital ratios before the crisis that isn't often commented on, so that was one point I wanted to make.

MR KOHN: I'd like to bring it back to the.

MR. STANLEY: I'm sorry -- just one more thing. We actually do support regulation in the shadow banking system. What form that regulation takes is entirely another question, but I think having this only within the banking sector does raise some real problems.

MR. KOHN: Thanks, Marcus. So I'm going to bring it back to the provision of liquidity in crisis times, in troubled times. And, I think we heard a couple of different views on 13-3. Paul K. certainly, and Randy, felt that 13-3 might not be available enough to sell your options, or to provide the bankruptcy backup liquidity, whereas Marcus thought there was plenty of room in 13-3. So I'd like to hear your thinking through this, as you heard some of these other views.

MR. KUPIEC: So I had some slides prepared on liquidity and the SPOE. In my view, I wasn't really -- the way I read the SPOE and the FDICs paper, strategy paper on SPOE, where they explain it is, they're not going to the Fed for liquidity. They think that their line of credit, the Orderly Liquidation fund Privileges with the treasury are big enough, that they could provide a guarantee and the bridge company could fund itself in the market with a guarantee. Now, I would point out -- I think there were some facts thrown around. According to the FDIC's paper, their access to the SPOE is ten percent of the consolidated assets of the entire holding company. When it's first taken over, it moves to 90 percent, after they do a complete reevaluation of all the assets, which takes six, seven, eight months. It take a long time -- It doesn't happen in a week. So really, you have ten percent, you have a ten percent line of credit with the Treasury before something special has to happen.

And then the question is, when you go through an SPOE, and I actually had an example where -- sorry about that, but I actually went through Wells Fargo and had them fail, but I won't show you. The problem is, you've got to recapitalize, probably the biggest bank, because the biggest bank is where the loss is going to be, so you have to recapitalize that. You have to recapitalize the holding company, and really none of these things is going to come under FSOC, let's close this thing, unless there's a run first, right? These things never violate the capital requirement, and people look at the end of one quarter and they say oh, it's too low, let's go close it. They run, right? They run, and they've already gone to the Fed and the Fed says we're not lending anymore -- you guys do something about this, and so the run has already happened, so if you've already run ten percent of your deposits, if you have a WAMU run, 8.8 percent of your deposits in a short amount of time, so you need 8.8 percent of the assets just to refund the deposits, or it's an asset -- a fire sale, which you're trying to prevent. Then you've got to plug the losses.

And so, my view is, if you're going to rely on this Dodd Frank title 2 OLA fund, ten percent's probably not enough, realistically, because the equity isn't going to be the real equity in the book, and there's going to be -- you're going to have to fund runs and losses. So, I think even not going to the Fed.

MR. KOHN: Okay, Randy.

MR. GUYNN: It's interesting. I'm going to focus on 13-3, but let me make one comment of OLF, because it's interesting, a lot of people that observe it, actually think it gives the FDIC a lot more room than it appears at first glance. So, the FDIC, I think, has actually said in various times that they think they can reevaluate the assets pretty quickly, and if they really needed to get to 90 percent, they could reevaluate very fast. Now, whether it would be an accurate reevaluation or not, I'm not sure.

They also believe that the Orderly Liquidation Fund actually gives them the ability to do guarantees and, and that they get, it's only like, maybe a half percent for every dollar of guarantee that would count against the ten percent. So I think there are ways -- I think most people are actually concerned that the OLF actually is unconstrained, and we've actually -- I think the industry and others have suggested that it probably makes sense, and I think the FDIC has now said this as a matter of policy, that they will actually, instead of using it the way it could be used, at least under the title two, they will in fact use it like a traditional lender of a last resort, and have it be fully secured at about market interest rates and so forth, which I actually think is a good idea, because I don't think you want to actually create a possible situation where there are actually losses that need to be spread around the industry. I don't think that's really a good idea.

But on 13-3, I think the problem is, if I were in a room and I were press, and I were the general council of the Federal Reserve 20 years from now, when someone needs to take a creative interpretation of 13-3, I think I could probably get to, you know, find a way to use 13-3 in one of these situations. The problem is that, number one, the way to get there might be to make it -- you have to basically make it available to the whole world, and so it seems to me that that's an odd way to say, we don't want you to make it available to one or two, unless you make is available to the whole world, and so the Fed says, like we really have to make it available to one or two, so I guess we'll make it available to the whole world. That doesn't strike me as fiscally, very sensible.

The second thing though is, it's the uncertainty, the market uncertainty about -- you know, when all the lawyers all around the country are being advised by the buy side saying, what's going to happen here -- will there be enough liquidity, will this SPOE work under either title two or under the bankruptcy code, and it's going to be hundreds or thousands of people looking at the law, and they're going to say we really don't know what it says -- we really don't understand these constraints, we don't really know how constrained it will be, whether it will be invoked or not. And I think that's the problem. I think the uncertainty -- it would probably actually be much better to know that it's a clear on or off in a situation, as opposed to wondering whether it will be available or not.

MR. STRONGIN: I think you also have to take into account the part of the market you're going to be in, and this is part of the reason I separate out the short term debt market. The short term debt market doesn't deal with uncertainty well, at all. Even after, and I'm sure, Don, you remember this -- even after the government guaranteed everything, the short term bond funds wanted legal opinions on every instrument for a while, to make sure that was really true. So I think the problem that has most of us concerned in executing an SPOE is how long will it take the buy side to get comfortable with what's actually happened, and filling that gap. Because the short term funding market just isn't very good at dealing with institutional uncertainty. I think people are very comfortable with the notion that you can super capitalize these entities -- not just capitalize, but super capitalize them.

But whether in fact, you can get the buy side to get that into their system or not, I think is substantially uncertain, and particularly on the non-bank side, and I think that's the gap -- the bridge financing, that has people concerned, is what do you do with that. And then you have this unrelated stuff, you know. Charlie made that speech about, nothing's ever been, having to do (inaudible) with solvency. Well, we all have recently lived through these types of runs in Europe, where, as each country got into trouble, and people had questions about deposited funds, governments had to step in and effectively guarantee stuff to stop the runs.

You get contamination risks all the time in these high stress environments, and so it's also not clear that you won't need to supply liquidity in that context to all sorts of related firms, related in the following sense, might have similar exposures. And we've see that occur many times.

MR. KOHN: So I guess the question would be whether the Fed would be constrained against doing that through a widely, a broadly available facilitator.

MR. STRONGIN: That’s right. I mean, my job in the ’87 crash was to make sure that (inaudible) called enough banks to make sure enough broker dealers, futures merchants and everything else, can open the next day. The concern was not about the banks.

MR. SALTZMAN: Just one observation. One can create as many hypotheticals as you want, but what’s the realistic probability that a GSIFI will fail, idiosyncratically blow through 500 billion dollars of treasuries, with a problem that is unique to that institution, so that the conditions associated with 13-3 won’t be readily available. That’s not going to happen.

MR. KUPIEC: I agree. You’re going to have all of them at once. And who’s going to fund all of them at once?

MR. SALTZMAN: Well, I mean, that’s where the lender of last resort has to come in to stop a crisis of confidence.

MR. KOHN: And I guess the question is whether the new restrictions on 13-3 will make the Federal Reserve more reluctant to pull that trigger than they were before.

MR. STANLEY: This is something where it helps to have the rules in front of you and the law in front of you, and I have neither memorized, nor do I have them right in front of me, though I did recently write a regulatory comment on the 13-3 rules, and my understanding and memory of it is, there really is not a definition of broad base, so you could restrict it say, to primary dealers, and more than one. I think if you were a creative lawyer, and the Fed has a lot of creative lawyers, you can fit even a very narrow market definition inside of that broad base.

The Solvency requirement is simply that someone not currently be in bankruptcy. That's it, for solvency. So you could meet someone on the courthouse steps with an offer to you know, finance their inventory of securities, and they'd be like, great and there'd be nothing wrong with that. That's actually in the statute, that definition of solvency. So I just -- I do think it's not an institutional funding mechanism, it's a market funding mechanism, but you can really identify most institutions -- most big (inaudible), you know, are big players in a couple of markets that are readily identifiable, and they'll be getting that support for their asset valuations, I think, from 13-3.

And in terms of SPOE, that 10-90 issue is very technical, and again, it'd be good to have the statute here, but I would point out that.

MR. SALTZMAN: You do, he's to your right.

MR. STANLEY: That's true, actually, I spend a lot of time on your website. The ten percent is your last book value from your last audited financial statement, so your last quarterly report before you go down, so you're talking you know, 200 billion, a 200 billion dollar line of credit or something like that. It's your asset value. That's a lot of money.

MR. KUPIEC: The sub-debt, the parent of the top tier holding company is supposed to be about ten percent of the assets too that convert. So right there, you've got the sub-debt that you're going to convert into the new equity in the bridge, equaling ten percent. Now, I disagree with Randall -- I don't believe they can revalue all the SIFIs assets that quickly, especially if it's complicated, but if people are willing to sign that they're audited and revalued, and then get 90 percent, than that does solve the problem. But I worked in the FDIC for a long time, and it takes them a year.

MR. GUYNN: Do they actually have to be audited? I'm not sure they have to be.

MR. KUPIEC: I think that there's a whole thing, and the Secretary of the

Treasury has to be happy that they've been revalued. I thought that there were breaks in there to prevent getting too much OLA liquidity, (inaudible) liquidity, and if you would just get 90 percent, if after three days you say oh yes, we think they're worth X, that doesn't seem like much of a check, but it might work that way.

MR. GUYNN: One comment I would make, the extent that actually is a genuine problem, the fact of the matter is that if you actually do a single point of entry, and you have a recapitalized bank, there's no reason it can't have access to the discount window. So you've got the discount window and the OLF, you know, basically providing.

MR. KOHN: Not so much, maybe for the non-bank affiliates.

MR. GUYNN: Not for the non-bank affiliates.

MR. KOHN: That's the issue. Can I -- before we turn the audience, I have one question. There's -- change the subject slightly. There have been a number of comments, including from myself and the first panel, about the adverse political environment. And David Wessel last night. So, I'm going to start with Paul Saltzman. In addition to holding terrific, you know conferences at Brookings to educate people who probably think they know it already anyhow, what can we do to change -- by we, I mean, just everyone generally, to change the political discourse? How can this education process work? Do you have any thoughts about changing attitudes?

MR. SALTZMAN: Wow. Humility. I think the banking industry needs to show more humility, both with respect to its actions during the crisis, and its relative standing in the economy. We go into meetings -- we walk on the streets, and there's this presumption that people know or should know that we, as an industry add value. I don't think as an industry, we're sensitive enough to the pain. I've had occasion recently to travel to some cities across our country -- Buffalo, Cleveland, others where a lot of people are hurting out there. So I think the banking industry needs to show some humility, number one.

Number two, I think we need to recalibrate our approach to opposing rules and regulations, and not always, as many people have said, you know, the sky is falling every time a particular rule comes into play. Other than that, you know, a lot like anything, it's a Jeffersonian / Hamiltonian thing. It's -- banks have been vilified for 2,000 years, they will continue to be vilified for the next 2,000 years, and I think it's our job to continue.

MR. KOHN: Or a Jacksonian thing.

MR. SALTZMAN: or a Jacksonian thing, right? And you know, I think it's just a question of the industry needs to plow through the current situation, you know, hope that some of these rules and regulations are calibrated appropriately, and if there is harm, that it's short term harm that can be quickly changed. Perhaps I wasn't around, but you take the Eurobond markets -- there were some tax issues. People thought that was temporary. Next thing you know, the whole market moves to London, we're a little cavalier of the long term impact of some of these structural changes, particularly with respect to the shadow banking. But I think we just need to, as an industry, continue to present the value proposition.

You know, most large banks are community banks. Many of the GSIFIs have as much, if not more, presence in terms of lending and employment than a lot of the other community banks. It's very hard when some of these issues become religious, to sort of pound through the perception, but we just have to keep on trying.

MR. KOHN: Alright. Does anyone else have thoughts on this? Randy?

MR GUYNN: I think the bank industry should do everything it can to try to support -- and everybody should -- a better economy. I think frankly, if people were a lot happier with their jobs, you know, the level of employment, the jobs, the prospects, the future, they'd be less grumpy and looking for the banking industry to criticize. I think part of the problem is, we continue to sort of bump along in an economy that's struggling, I think.

MR. KOHN: Interesting. Let's go to the audience. Do we have some questions out there? In addition to Burt. (Inaudible).

MR. PONIKVAR: Dale Ponikvar, Milbank Tweed. Steve, you made a comment, which I'd like all to react to, that if you're going overboard with liquidity regulations, basically, you're pushing the problem into the quote, real economy, instead. And you distinguished your experience with 2009 and 1987. Is that where we should be going? You'd didn't give a qualitative judgment of that, and do other people agree? Is that a good way to go?

MR. STRONGIN: I guess I'll -- I think it in an unnecessary way to go. I think that if there was more attention paid to the institutional microstructure reform, and trying to simply get the collateral markets to work better, you could potentially not have to transfer it, but could actually manage it better. Part of the problem with belt suspenders, more belts and suspenders, is that it allows people not to fix the underlying problem, which tends to be transparency.

There was a comment made earlier today about how the dangers of mark to market. Well, part of the reason people didn't know whether banks were solvent or not is they didn't believe the balance sheets. And so, correcting the information issues, correcting the market structure issues, and then relying on it. As I think the way one managed to make markets work better. And when you make them self-insure, you inevitably make them work worse. And I think that's the sort of bad road we've gone down. It's very understandable. It's nevertheless probably not net good for the way the economies can operate.

MR. KOHN: Any other panelists have a comment on that?

MR. STANLEY: Yes, so I have two comments -- one on the short term funding market issue that Steve has been raising, which I think is really important, and the other, very directly responsive to that question on the real economy. I mean, I just find myself going back to the short term funding issue because I think it's so central. I mean, this was the core of the crisis in many ways. It is impacted, and I think should be impacted by regulation. I mean look, I have no doubt that the short term lending markets generate money for the people who use them. That's why they use them. I also have no doubt that they're unstable and they're fragile, which is an implication on a lot of things that Steve has been saying, and it part of the problem.

That is, the fact that they generate money for people who use them is not a reason to say that they're generating social benefits, necessarily. I mean, what the short term funding markets do, in a way, they're a money creation market, right? They'd let you take things that are not money-like, that are illiquid, long term, and convert them into things that are money-like, except that money-like asset that you now have is very fragile, because it's very liable to people deciding hey, this isn't money-like, and looking through to what's beyond it.

When we do monetary policy, we don't say oh, well the Fed should create as much money as possible, at all times, because clearly, that will give people more money, and more money is good. We look at a very, very complex kind of model of the relationship between the money supply and growth, and what's a sustainable money supply, and we've kind of let money creation get away from us a little bit, and I think that's one of the deep underlying issues with the short term funding markets.

And then, just in more direct response to this, I think, in the period of the 50s through the 70s, we had an extremely strict set of regulations on banks in particular, much stricter than what's being considered now, and I think we did have more sort of credit crunches in the real economy earlier on, in the economic cycle, that the economic swings weren't quite as violent. They were felt in inventory and in financing earlier, I think. But that seemed to lead to, in some ways, a milder, I mean, one can argue about this, but a milder business cycle than we've seen more recently.

So I think it's kind of an interesting question, if you push some of those risks out earlier, do you kind of moderate the cycle a little bit. I don't have an answer to it, but I just point back to that historical period.

MR. SALTZMAN: This business about looking to 1780 and 1950, you know, for regulatory regimes or market structures, you know, the propagation vehicle -- we live in a globalized economy, and so I'm not so sure you can, and a lot of people have done this (inaudible), and you look at a market structure or rule that occurred in a certain time, and fast forward it. It's highly unlikely that in today's modern economy you can have a crisis that is as micro, so I guess maybe an answer to the question, and I don't know if Steve would agree, you know, is it an appropriate trade off to say okay, we've solved for the systemic crisis in exchange for periodic pockets of crises in markets that can be managed. I think that's a pretty good trade off.

MR. KOHN: Alright. Yes.

MR. POMERLEANO: Michael Pomerleano -- I was very intrigued by your proposal to auction, you know, this option that frankly, it appeals to me because it's a solution, actually. It just creates certain open market disciplines, so could I hear maybe from the others, particularly Don, what he thinks about the visibility of this proposal?

MR. KOHN: So we did it for Y2K. We sold, the New York Feds, sold options to get liquidity from the New York -- sold options ahead of time to get liquidity on January 2nd, or whatever the first working day of 2000 was, so it's been done, but been done for commercial banks. And I think to do it more broadly for non-banks, and have it traded in markets raises a whole host of questions, not only would you need to change the law, but you'd need to think about the moral hazard you're setting up and what the access was, et cetera.

MR. POMERLEANO: (Inaudible) specified haircuts (inaudible)?

MR. KUPIEC: It's not meant to take credit risk. It's meant to take away repo, haircut, jump risk, like what happened in 2007, 2008.

MR. KOHN: Right.

MR. POMERLEANO: (Inaudible) finding which assets are liquid.

MR. KOHN: Right. But he wasn't restricting who had access to these options, because they're traded on.

MR. KUPIEC: In my best world, I would want to shadow banks to have access. Maybe that's not possible today.

MR. KOHN: Creates issues of moral hazard, I think. So there are problems to be solved, but an interesting thing. Does anyone else on the panel have anything?

MR. KUPIEC: I think it's an interesting idea. I mean, I think Don's point about having the alien ability to have these options extend beyond the banks raises questions, but you could start and have this be a tradable derivative within the banking system. So I think it's an idea worth pursuing.

MR. STRONGIN: I think it's quite possible that anything along those lines could help the system. If you go back to 1987, which I know I've brought up a couple of times, Alan Greenspan simply saying the window was open proved to be enough, but the window was never used. So in some sense, if people knew there was a baseline of liquidity out there, it might actually solve the problem of liquidity.

MR. KOHN: Okay. Any other questions or comments? Martin?

MR. BAILY: This session had the word "world" in it, and so I'm going to ask if you can broaden your discussion a little bit to say we have -- New York has been a global center. When the crisis hit, world trade kind of collapsed for a period, because people couldn't get financing that was coming out of New York. So there was liquidity crisis that happened, which respect to global trade, so my question really is, if we think about this in the global context, does it ease the U.S. liquidity problem, because we have access to global markets, or does it make it a more difficult problem because we're providing global liquidity?

MR. SALTZMAN: I'll just be quick. I think it's infinitely more complicated -- the dollar is the world's reserve currency. So, you know, the total supply -- I would suspect that foreign banking organizations are going to satisfy their own HQLA requirements by acquiring treasuries. There isn't enough total sovereign outside of the U.S. to satisfy the global liquidity requirements, so I would think when one looks at it at a global level -- well one has to look at this at a global level in order to sort of access the impact on the U.S. economy. I think that's pretty self-evident.

MR. KOHN: Marcus, you look like you had something to say. No? Okay.

MR SALTZMAN: He always looks like he's got something to say.

MR. STANLEY: The wheels are always turning. I think that the role of the U.S. dollar as a reserve currency, and the Fed as a financial capital, I think is a very good -- there are lots of justifications, but a very good justification for the reasons why the Fed has gone super equivalent on so many of these rules, and I think it's also very important justification for the foreign banking organization rule, that we're really kind of the backstop in a lot of ways, so we have to make sure that we're extra secure, and that gives us also benefits in terms of the flight to safety that occurs into the U.S. financial institutions in times of stress.

MR. KOHN: Any other questions? Charlie.

MR. THOMAS: Thanks. Charlie Thomas from the Federal Reserve Board. So, getting back to Paul's option -- one obvious part of it is that, as they get resold off (inaudible), they can be sold to anyone, presumably. But doesn't that then leave the Fed with a repo against anybody, right? And so, the idea that the counterparty is somehow still on the hook beyond what the repo is worth is gone, right? I mean -- let me just finish. But -- so you would sort of say, well okay, fine, I'm only lending against that collateral, and I don't care who the counterparty is. But that's a really odd position to be in when in the same paragraph, you're saying that the lender of last resort only lends to, Goddamnit, solvent institutions against good collateral.

MR. KUPIEC: I'm taking that apart. The whole idea that you have to control haircuts, in the -- the aim of my idea is to lessen the blow of the LCR and the bank regulations, to give you more collateral that satisfies those, so it's not as constraining, but also, to inject liquidity into the shadow banking market, where repo and collateral was a big deal in the crisis. And, to put some underlying.

So, if the Fed were only to issue out of the money options. And maybe they're -- and I think I might have slipped in or I might have not said it, but there could be some, if it went to outside the banking system, which I would prefer, there could be some membership requirements, like, if at the end of your collateral, you don't deliver, we're going to send you over to the FSOC and the SPOE and you're just out of business, right. You don't muck with your regulator and delivery. You have basically a month to get your short term funding in order, if you have one of these repos.

So, and if you -- if the Fed were to exercise one of these repos, and it was an isolation, that would mean the true haircut was smaller than the haircut that this firm was getting, than the Fed wouldn't really have a risk -- it'd be able to probably turn around and sell the bond if it wanted to. But if everybody were exercising these repos, you'd be in a situation where there was some systemic liquidity problem, and the Fed would have a month to see the prices and figure out what they want to do.

Do they want to issue more liquidity insurance? How do they want to handle it? Send the boys in to see what's going -- and the girls, sorry -- in to see what's going on with that collateral? What is happening in that market? So, I don't think it fixes everything, but I think it gives you some market signals, and it puts a bit of a safety net under the non-lender of last resort.

It expands the Fed's ability, the lender of last resort but not against the firm, against collateral, with a significant haircut, and if the haircut's big enough, there's no credit risk. If the world falls apart in a month, we all have a problem, and they're going to have to provide liquidity anyway, right? So, that's kind of my thinking. But I haven't -- I don't have a full-fledged, dynamic, general equilibrium or any of this stuff yet, and it was just kind of trying to think through how can we get a market into this process, so that we can get some information back and make some money off of selling the fact that the Fed is going to have to sell systemic liquidity insurance, and they should charge for it.

MR. KOHN: Steve's got the last word.

MR. STRONGIN: We've looked at some related problems, and actually, I think you've actually stated the answer, and the question raised is the correct one, which is, you want to make it transferable, you're going to have to relate it to a related clearing house, because the key issue in collateral is, is it there, and is it valued correctly? And so, if you deal with the microstructure issue, which you need to do to make is transferable, you end up with something that can do a collateral clearing house.

Because that's the only way you can make it transferable. And that then in turn, creates all the other rules you're talking about. I think from that standpoint, that becomes the institutional link that would -- you'd have to think about.

MR. STANLEY: Could you limit your option product to CCPs? And maybe that's the way you introduce the liquidity pricing mechanism into the system?

MR. KOHN: We can continue -- we can work out the tiny technical details over Coke or Pepsi or whatever is it out there and cookies, so join me in thanking the panel. And I guess we have a 15 minute break and we'll come back at 3:30.

(Recess)

MR. ELLIOTT: Okay. Good afternoon, everyone. Thank you all. Again, I'm Doug Elliott. You've seen me a couple of times already.

I have the distinct honor of introducing our final speaker, Dr. Ben Bernanke. I'm not going to give a long introduction, because if you don't already know who he is, you should not be in this auditorium. We do, however, have a bio in your packet if you're interested in more details, and I'm glad David just walked in, because I was about to say if you want to know more than that, I highly recommend David Wessel's book, *In Fed We Trust*, in which Dr. Bernanke is a key character.

I would, though, like to emphasize two points from his biography that are relevant here and you may or may not know. First, Dr. Bernanke is one of the leading academic experts in this country and has written influential academic papers on the role of banks in the economy particularly at times of crisis when liquidity would be most relevant. Second, he's ours now. I'm very pleased that Dr. Bernanke has joined Brookings as a Distinguished Fellow in Residence in our Economics Studies program. And I know I personally have been dropping his name to everyone.

So, he will speak for a few minutes, and then I'll moderate a Q&A period with him with the audience.

MR. BERNANKE: Thank you. Thanks, Doug.

Let me start with my thanks to Brookings and to Martin Baily and Doug Elliott for organizing a conference on a very esoteric topic but one that is very important, and we hope it doesn't become important again in the near future, but it's always possible and we need to understand it.

What I thought I'd do in these short remarks is talk a little bit about the Federal Reserve as a lender of last resort, our experience in the crisis, and implications of that for financial regulation of the regulation going forward.

Now, I thought it would be worthwhile to step back a little bit -- there are a lot of historians here -- and talk a little bit about financial crises in general, and a good way to do that is instead of talking about the crisis of 2007 I thought I'd talk about the crisis of 1907, the famous "rich man's panic," the last crisis before the creation of the Federal Reserve, which in fact in many ways motivated creation of the Federal Reserve.

And what's convenient for this purpose is that it the 1907 panic followed the sort of standard -- to my mind many details of course -- followed the standard sequencing of 19th century financial panics.

So, I think about this financial panic as having five stages. The first stage I call losses and, more generally, losses means that macroeconomic or microeconomic factors are creating significant losses to some important financial institutions. In the case of 1907, on the macroeconomic side a recession had already begun in May of 1907. The crisis itself -- the panic took place in October. There's this a very spooky tendency for panics to take place in October, but in those days there was a good reason for it, which was that without a central bank to smooth out interest rates over the year in the fall when there was a demand for credit to meet the harvest credit, you know, to pay for the harvest and transport, interest rates tended to spike, and that created more pressure in money markets.

At the micro level in 1907, there was a famous and very colorful attempt by a number of speculators to corner the stock of the United Copper Company, a corner which failed and which led to significant losses to these particular individuals who, unfortunately, from the point of view of the economy were closely associated with a number of banks and trust companies in New York. And so the fear, at least, rose that there had been significant losses potentially associated with these folks at those companies.

That led to the second stage of most financial panics, which is runs. As people -- of course at the time for deposit insurance people feared that the banks and the trusts associated with these gentlemen were potentially in significant loss. There were runs both on the banks and on the trusts as depositors pulled out their money.

Now, interestingly, the trusts were sort of the shadow banks at the time. They were less regulated, and they were somewhat more speculative, and they were not as much part of the club as the regular banks were. And the banks in New York -- their clearinghouse, their association temporarily shut down the banks, and J.P. Morgan -- the individual, not the company -- he and his colleagues looked at the banks and said that they were strong and helped restore confidence in the banks, and the banks reopened; the runs on the banks stopped. But the runs on the trust companies, which J.P. Morgan initially didn't deign to intervene with, continued, and on October 22nd, the largest of these shadow banks, one of the largest -- Knickerbocker Trust -- failed, and that was an important trigger. So losses, runs.

Third, fire sales is the third stage. As companies come under pressure, as they lose their short-term funding they begin to dump assets. In the case of

Knickerbocker Trust, they were calling stock loans, for example, and that in turn created pressure on the stock market, which dropped very sharply, and other asset prices came down as banks and trust companies trying to raise liquidity were dumping assets on the market.

Fourth stage is contagion, both through asset price declines, which put the financial position of financial institutions into worse condition, and through the interconnection between firms that are in trouble and other firms and their counterparties and their creditors. The contagion spreads from, in this case, the Knickerbocker Trust (inaudible) Trust and back to the banks, which, remember, the initial work by J.P. Morgan and his friends had stabilized.

So, the crisis sharpened again, and the fifth stage is economic impact, and as was the case of a number of 19th century banking panics, there was a significant impact on transactions, on credit, on normal business operations. There was a pretty significant effect not only locally but of course a pretty significant recession that went on into the middle of the subsequent year.

Now, as you probably know, J.P. Morgan and his buddies, including Benjamin Strong who had become the first real leader of the Federal Reserve, decided that enough was enough and they needed to address the trust problem as well, so they became a private lender of last resort. They lent cash, and they took additional steps also. They imposed guarantees. They helped strengthen firms that needed strengthening. And they did disclosure. They put information out so that people would regain confidence, and collectively they were able to stop that crisis. So, it was an interesting illustration of the main points of a financial crisis.

Of course, from our point of view it's very interesting because it led to the founding of the Fed in 1913 as Congress contemplated the problems inherent with having a private group of individuals essentially function as a central bank in the economy.

Now, the original mission of the Fed -- and I sometimes say that after the recent crisis the Fed has gone back to its roots, because the original mission of the Fed -- they did talk about smoothing interest rates, elastic currency, and so on but they didn't really talk about what we would think of as monetary policy -- but the original mission of the Fed was essentially to be a lender of last resort. And, implicitly, the philosophy was the Bagehot "Lend freely to penalty rate" idea, that there come times when there's a panic, there's a hunger for cash, and the central bank can provide that cash against collateral and cause the panic to calm.

By the way, just a couple of comments on that, because I'm going to come back to the Bagehot principle in the context of the Fed. "Lending freely" -- we understand what that means. Lend to this man and that man, as Bagehot said. But what do you lend against? And I think the spirit of lending freely is that you should lend against a broad range of assets, and you can't lend strictly on fire sale prices either -- the very lowest prices -- because if you do you're not really helping anything, because they can always get the fire sale prices in the market. So, there's a sense in which the Bagehot principle says that you should lend at a price that may be something closer to what a normal market would produce for that asset. And how do you determine that? I'll come back to that.

Another part of that phrase which gets a lot of attention and I think is not fully understood is the "add a penalty rate" part, and the general view of people is that well, what Bagehot was saying was that you should lend at a high rate to eliminate moral hazard so that only the people who really "needed" the money would come and take it. I don't think that that's an entirely accurate characterization of what Bagehot meant or how we should think about it. What Bagehot -- at least one of the things he was concerned about was the fact that in his day the money supply was constrained by the gold standard and the central bank could not create an indefinite amount of money. So, a higher rate was just a way of dissuading -- what could turn into a domestic run on banks could turn into a run on the currency, run on the gold standard if there was fear that the gold standard was not being maintained. So, that was an important concern.

I would also argue that, again, the penalty rate -- if the penalty rate is higher than the rate prevailing in markets in the panic, again it's not going to do much good. So, you need to know the concept of penalty rate, and I would argue that an appropriate concept is a rate that is higher than normal but may be lower than the fear rate that we're seeing.

Let me come back now to, of course, the more recent crisis and talk about it in the context of these general principles. I think now -- looking back, and even in the middle of the crisis, I think we recognize that the 2007, 2009 crisis met essential the five criteria, the five stages of the classic financial panic: Losses; macroeconomic stresses; subprime lending; mortgage losses; other types of real estate losses. All those things were happening, of course, and were generating losses of unknown magnitude at a wide range of financial institutions.

Runs. Not depositors of course but in this case wholesale funding whether it was repos, commercial paper, funding that was uninsured and was pulling back from companies in the crisis.

Third, fire sales. There was a lot of pressure downward on asset prices, stock prices as companies dumped assets that they couldn't finance, and that created an additional pressure on other companies leading to the fourth stage, which was contagion, as a combination of the depressed asset prices, the interconnections; and the opacity of the relationships between the troubled firms and other firms meant that confidence fell very severely even on firms that there was no demonstrable fear of insolvency for at the moment.

And then, finally, of course, the broad economic effects, which we all know about and are still trying to address.

I think a fair question would be: Well, if this was such a standard thing, why didn't we recognize it sooner? And there are a couple of answers to that -- not excuses necessarily but explanations if you will.

One has to do with the first principle, which is that the panic is set off when people believe that there are significant losses to financial institutions -- not just losses but losses to critical financial institutions. And early in the crisis the general view was that even though house prices might be coming down quite a bit this was not, in kind, all that different from the tech bubble bursting. Loss of paper wealth -- that would affect consumer spending; it would slow the economy. But neither we -- the regulators -- nor the banks themselves appreciated their exposure to mortgage losses. And, indeed, in the 2008 transcripts that just came out I think Eric Rosengren is quoted as saying that when we talked to all these big banks we asked them what would happen if house prices dropped 30 percent? And they all said ah, nothing, nothing much. So, it took a while to figure out that the banks were as exposed as they turned out to be to these losses. So, that was one thing that we were slow to see.

The other thing we were slow to see was to recognize the fact that runs were a different animal now. They weren't depositor runs, like in *A Wonderful Life* or *Mary Poppins* or one of those other classic films. Instead, it was an invisible run of repos and commercial paper and so on, shortening their maturity, raising their rates, and ultimately even pulling back from firms. So, it took time to see the basic principles of a financial panic taking place in a different institutional context, and I think that was one of the issues.

Now, the other challenge that the Fed and other central banks faced was that even though we sort of know what to do in a financial panic -- and the first thing you do is act as a lender of last resort, and that's the first thing we did in August 2007. Both the Fed and the ECB were aggressive in putting out cash.

But there were some important concerns. The first was that the changes in the financial system had left our legal authorities behind. What the Fed was created to do was lend to banks through the discount window. But of course, the maturity transformation process was now taking place through all different kinds of financial institutions, and as a result the Fed had to use its 13(3) authority to lend to money market funds, to asset-backed securities, to commercial paper, to primary dealers, et cetera, in other words, expanding the basic principle of lender of last resort to a much broader set of firms and markets.

The other problem, one I don't think Bagehot talks about enough -- I'm not sure, maybe an expert here can tell me -- is the problem of stigma, which is a very significant problem. It was a problem early on in trying to get banks to take money from the discount window, particularly if you set the discount rates high above market rates, and the reason I think you can't do that is that firms are very reluctant to take cash, because they're afraid of being identified as weak. And that would, of course, be counterproductive from their point of view.

Now, we actually did a number of things to try to address stigma, and I think there are some pretty clever solutions there. For example, the Term Auction Facility, the TAF, auctioned discount window money to banks, but it was through an auction process, and because it was an auction process, banks could say, "Well, we're just taking" -- it was a fixed amount that's being auctioned, and the price would be whatever was necessary to get people to take it, and if nobody's willing to take it, then the price would be low and people would say, "Well, it's just a good economic decision to take this money."

Moreover, the TAF didn't put out the money immediately. It was a delay between winning the bid, winning the auction, and when the money was put out. So, that reduced the sense that the bank was desperately reaching for cash. It was just an economic transaction.

So, there are various things that we did to try to address the stigma. And, broadly, I would say that ultimately the response fit very well in the pattern of J.P. Morgan. It was a lender-of-last-resort activity. It was followed, though, by guarantees, by recapitalization, by disclosures, all the same steps that worked in 19th century financial panics.

There are a couple of other issues I guess I would just mention briefly. One has to do with the rescues of AIG, Bear Stearns, et cetera. I think those are very different. Those, in our minds, were not standard Bagehot-type activities. Those were ad hoc responses to a particular problem, which was that the United States does not have, or did not have -- and was moving in the direction of having but did not have at the time -- a mechanism for unwinding a large financial firm in a way that was safe for the broader financial system. And as a result, the Fed used various lending authorities to try to prevent the failure of firms -- addressing moral hazard as best we could by, for example, trying to arrange it so the equity holders lost most of their value. But that was not -- I wouldn't call that a Bagehot activity. I think was really a different thing. It was an ad hoc response to a lack of a necessary authority, one that's being addressed.

The other thing I would comment on just about this whole period is that frequently in discussing lender-of-last-resort activity, people talk about the distinction between illiquid and insolvent firms, and I think while there are clearly illiquid firms that you can identify as being illiquid and there're clearly insolvent firms that you can identify as being insolvent, I think in a crisis there are a lot of gray area in the middle. And the problem is that, you know, a firm that's insolvent at current market prices, if those are fire sale prices, there's a little bit of a question about whether it's an illiquidity issue in the general market or whether it's really a genuine case of insolvency.

Well, let me talk just for a minute -- I want to leave a few minutes for questions -- let me talk just a minute about the regulatory response. Of course, you know, there was a very extensive regulatory response to the crisis. Let me just talk about two things that are relevant to our discussion today. One is the changes in the lender-of-last-resort authorities, and the other is liquidity regulation.

Lender-of-last-resort authorities -- the discount window remains in place. The Fed's discount window was not changed fundamentally by Dodd-Frank, but there were new disclosure requirements -- and I'll come back to that.

On 13(3), the Emergency Lending Authority, there were some changes made. First, and very importantly, 13(3) can only be invoked for a broad-based program lending to a class of firms or a class of market participants. It cannot be used anymore to address a single firm. That was a very important change. Secondly, use of 13(3) requires approval of the Treasury Secretary. Third, there are tougher credit restrictions now in terms of the -- in the crisis, the criterion was secured to the satisfaction of the Reserve Bank, and now there's a tougher criterion for whether or not the loan is creditworthy. And, finally, tougher disclosure in reporting rules have been added.

Now, what does this all do? I think that some of these changes are positive -- for example, the restriction to broad-based lending programs. I think as long as that comes with a wage deal with failing financially critical firms that's fine and that's good. It takes the Fed out of the business of weekend emergencies. And of course Dodd-Frank includes the Orderly Liquidation Authority, which is a way to wind down a financial firm in a safer way, and I think a lot of progress has been made on putting that OLA authority into practice, and we can certainly talk about that.

But I think, as I mentioned before, the use of the lending authority to try to prevent disorderly collapses of firms was not genuine LOLR in my opinion -- lender of last resort -- and I'm glad to see that those two authorities are broken apart.

The approval of the Treasury Secretary I think is basically okay, for Democratic reasons and because, generally speaking, the Treasury Secretary and the Fed chairman see pretty much eye to eye at trying to prevent the financial system from collapsing. I found that out in a number of contexts. (Laughter)

Now, there are a couple of other things. The other rules, though, I think are kind of two-sided. So, there's the tougher repayment standard and there's a tougher disclosure. Both of these things are very understandable from the point of view of taxpayer responsibility, accountability, democracy, governance, et cetera. But they do potentially raise some concerns about the use of these authorities in the next crisis.

In the case of the tougher repayment standard, as I mentioned -- and the reason I mentioned it was that the distinction between insolvency and illiquidity in a crisis is not always so clear, and sometimes judgments have to be made. And if the standard of repayment is so tough that the central bank is afraid to make loans in a panic, that would be, of course, unfortunate.

Likewise, under the disclosure requirements, again, totally understandable from the perspective of governance and accountability, but we already have pretty significant stigma problems, and of course the more quickly and more actively these loans are disclosed, the worse those problems are going to be.

So, again, I'm not -- let me be clear -- I'm not saying these are mistakes or they're problems. They have, obviously, good reasons for these changes, but there are some potential downsides to the disclosure and to credit restrictions.

The other area -- and this is the last thing I'll just talk about briefly. The other area, of course, is the imposition of liquidity rate regulations on a number of different firms. The fact is now that what we saw in the crisis was that the lender-of-last-resort privilege has been extended very broadly in the economy wherever there's maturity transformation. And in order for that to be consistent with not creating too much moral hazard, there's got to be, of course, prudential requirements for liquidity. So, we're seeing, as you've discussed already in this meeting and I won't go into it, the Basel III. I think one of the most important innovations in Basel III besides strengthening the capital requirements is the addition of various liquidity requirements.

I guess what I would just point out is that the Basel liquidity rules are only part of what's happening in terms of liquidity regulation. There are a number of other ways in which liquidity is going to be part of the oversight. For example, the bank stress tests that the Fed conducts are going to have a liquidity component as well as a capital component. The Fed is discussing capital surcharges for firms that rely too much on short-term unsecured funding. Margin collateral requirements are being increased quite considerably, so that of course is a liquidity requirement. And on the supply side and the sources of liquidity, of course, regulation of money market funds, and repo is a very hot topic, and trying to, again from the supply side, reduce the risk of a run or a panic is a very important set of rules happening. And, finally, liquidity regulation of financial market utilities, like exchanges and central counterparties, is also very extensive.

So, one of the really major changes in financial regulation coming out of the crisis is recognition that the lender-of-last-resort power or privilege has been extended very broadly, and that requires a lot of actions to make sure that that privilege doesn't result in inadequate liquidity from the point of view of firms.

Many tough questions there. For example, how do you treat your collateral that you hold at the central bank? Does that count as liquidity? That's been a big source of contention in the debate. Another question is, do firms always have to hold the liquidity, or are they allowed to draw it down? If they're not allowed to draw it down, do you have what's called the last-taxi-at-the-railroad-station problem? The rule that says there always has to be one taxi at the railroad station means that, of course, the second one is really the last one, et cetera. By the same token, the requirement that liquidity always has to be above a certain level basically means that you don't have any liquidity at all, because you can't use the liquidity that you have.

So, there are a lot of issues there to be resolved. But I think that this is the end. The crisis has brought back liquidity and lender-of-last-resort activity in a very big way, and it's going to affect both the activities of central banks and a wide range of financial regulations.

Thank you.

MR. ELLIOTT: Thank you, and I'll mostly leave time for the audience, because I know you have a limited time. But I do want to ask one question, and you clearly can't answer this in full. But, just conceptually, how do you think bank liquidity requirements should be designed? How do you decide what the balance is and how to operationalize it?

MR. BERNANKE: Well, one of the innovations in general in bank regulation that's followed from the crisis is the use of stress testing. The stress testing is not a new idea. I mean, it's been around for a long time. But there is a sense, at least -- I may not be entirely accurate -- there's a sense that in the past, the fact that sort of recent developments -- in a period where recent developments were fairly stable, that led to excessive optimism about the risks of some kind of shock occurring, so stress testing has come in.

And if you look at the way Basel III calculates the HQLA -- the high quality liquid asset -- requirements, et cetera, most of them are based on stress test concepts, you know, how much liquidity you need to hold in order to meet 30 days of certain very difficult circumstances.

Now, there are a lot really challenging questions here. For example, the liquidity of a particular asset might depend on market conditions or on what's happening in the broader economy. Likewise, changing liquidity rules is probably going to have general equilibrium effects on what kinds of liquidity are available and how liquid they are and how the markets function. It's a tough problem. It's going to take some experimentation. But I think the stress test approach is probably the one that's got the most support at this point.

MR. ELLIOTT: One more quick question, and if this is something you've looked into, you can pass on it and I'll go to the audience. I've been asking the various economists how they view the societal value of maturity transformation, because there doesn't seem to be a very good theory about what amount of benefit is out there from being able to take these deposits and turn them into longer-term investment.

MR. BERNANKE: Well, let's just be careful -- separate -- maturity transformation is an important function. People -- you need to be able to get cash, right? , even though most of the investments in this society are in longer-term assets. So, you have to have maturity transformation.

The interesting question is: To what extent do you need all the financial structure that we have now providing maturity transformation and to what extent could it be done, for example, to narrow banks and those things. I can't really answer. That's a big question. It would take a lot to think about. But I guess I would say that I'm a little bit skeptical that you could, for example -- I mean, in theory you could make -- maturity transformation entirely the responsibility of the government. You know, they could issue Treasury Bills essentially backed by long-term taxation. But then that overwhelms a number of other public finance functions, and it also means that government has to get into the business of checking accounts and things of that sort.

So, moreover, I don't think that would mean that the firms that are financed by longer-term debt are still -- they would still require, I think, safety and soundness oversight and so on. It's a complicated and very interesting issue and has been around for a long time.

Maturity transformation, in general, is very important, and it's something the financial system does. I think a challenging question is how much of what the financial system does arises from genuine demand from maturity transformation and how much arises from some kind of moral hazard problem.

MR. ELLIOTT: Thank you. That's very provocative.

Okay, questions from the audience. Sure, all the way in the back there.

MR. HANNISH: Thank you. Simple question. I mean, –vis a vis everything you've just said

MR. ELLIOTT: I'm sorry, could you identify yourself?

MR. HANNISH: Oh, sure. Roger Hannish. Thank you very much. Vis a vis everything you've said regarding the banks too big to fail and now they're getting bigger and bigger. What's your thought on that?

MR. BERNANKE: Well, there are a number of parts of the regulatory revamp that's intended to address that. One in particular is the -- the most important one probably is the Orderly Liquidity Authority. That can be made to work, and we're certainly moving in the right direction, and that would take away the too-big-to-fail privilege, and that would mean that the calculation of how big a bank should be would depend on genuine economic criteria rather than on the too-big-too-fail privilege. So, that's an important one.

But there are other things that the regulatory system is trying to do to make banks internalize, in some sense, the cost to the society of their size and complexity -- for example, capital surcharges on larger banks, the fact that many of the tougher regulations apply to only large and complex institutions, not to smaller institutions. So, the problem obviously is not solved yet.

I would have to say also it's not just size. You know, there are some pretty big institutions that I don't really consider -- that don't pose the same risk that Lehman Brothers did, for example, that are bigger than Lehman Brothers. And I think it has to do also with opacity, complexity, interconnectedness, and a variety of other things. So, it's harder than just saying -- you know, putting a size limit or something like that.

But a lot of the Dodd-Frank and Basel reforms are aimed at making it more costly and taking away some of the privilege of being "too big to fail" with the hope that over time, as that subsidy is eliminated, the decisions we make are based on economic criteria and not on moral hazard criteria.

MR. ELLIOTT: Paul?

MR. SALTZMAN: Thank you very much. Someone observed that one of the common elements of crises across time has been the common shock sort of risk and particularly with respect to real estate. To the best of your knowledge, have policymakers ever considered asset concentration sort of limits or anything that would limit the exposure to a particular asset class versus counterparty limits or things of that sort? And what do you think about that idea generally?

MR. BERNANKE: Well, that's a very good point and one of the things I could have talked quite a bit about -- Dodd-Frank and the various changes. But recall that I think one of the most important changes in bank oversight was the stress testing, and I think the success of the Fed's stress test in March '09 was a very important step toward stabilizing the banking system. But one of the features of the stress test is that all the big banks are stressed at the same time. So, in principle at least -- and in practice I think the Fed and other bank regulators are moving in this direction -- you can really imagine doing a "macro prudential" stress test, in other words, where you give all the banks a stress test in which commercial real estate prices dropped 25 percent, and then you can not only see what happens to each bank, but then you can try to think about the cross bank implications. So, there is much, much more attention to that kind of consideration from a systemic -- it follows from the systemic approach. It's also implicit, for example, in the countercyclical capital requirements that are in Basel III, so the notion that regulators are looking for common shocks, innovations -- product innovations -- asset classes, whatever that go across a bunch of banks. That's very much in the spirit of the new systemic approach to regulation.

MR. ELLIOTT: Any others?

Okay, Bert, what the heck.

SPEAKER: Helen -- you've got to call him Helen. (Laughter).

MR. LEE: Thank you -- and thank you very much for being here.

When we take a look at the various Dodd-Frank reforms, one of the underlying premises was that central clearing mechanisms of various types would strengthen the financial system. But the question that I raised a number of times is what happens if a clearing mechanism fails? Are the clearing mechanisms themselves too big to fail? If one of them ran into trouble, whether for operational reasons, fraud, or whatever, should they be bailed out, if you will? Are their liabilities protected; and, if they're not, what is the consequence to the overall financial system if a large, critical clearing mechanism, in fact, fails to perform as it's supposed to?

MR. BERNANKE: That's a great question, and I once talked about this in a speech, and I guess I cited -- I don't know whether it was Tobin or whoever, but I cited a quote that "If you put all your eggs in one basket, you've got to really watch that basket."

So, obviously, one of the effects of making central counterparties so important is of course to elevate the risk to the system if they were to fail, and so therefore it's really critically important that they not fail, and what that means in practice is that they are going to be very closely looked at. So, in particular, Dodd-Frank gives the Fed new authorities to backstop the SCC or the CFTC, whoever is the principal regulator to make sure that the central counterparties meet all the appropriate safety and soundness standards. And the Fed does have the authority but not the requirement to be a lender of last resort to one of these central counterparties, for example, if it didn't have the liquidity at the end of the day to meet its obligations.

So, you're absolutely right. I think the calculation here is that in putting these transactions to central counterparties, you kind of put it where you can see it -- where it's more visible. And you are concentrating the risk, but as long as the oversight is extremely tough and very focused on these nodes, which are critical to the system, it seems like the right tradeoff. But the point is very well taken.

You know, there's a certain amount of risk in the system. If you take it out of one place and it may go somewhere else, and that's true in a lot of dimensions -- shadow banking, et cetera, and this was one of the problems with the traditional bank supervision, which was, you know, everybody had their own little part of the system and as long as my part of the system was doing okay I didn't care. So, what's good, I think, is that we're trying to move to a world in which the regulators collectively are trying to look at the broad system and look at systemic consequences, and that would surely be a very important one.

MR. LEE: But doesn't this mean that those that fell were too big to fail?

MR. BERNANKE: Well, I think the way you deal with a too-big-too-fail problem in this context is by making it extremely unlikely that it would fail by having all kinds of backstops and so on where the costs are borne not by the taxpayer, et cetera, but borne by, say, the participants. So, for example, if you have the ability in a crisis to essentially done or tax all of the participants in the central counterparty in the exchange, then that gives you a mechanism that, you know, instead of compatible is consistent with addressing moral hazard problems but which makes failure extremely remote. And I think that's kind of the tradeoff that regulators are working on.

MR. ELLIOTT: Well, one other question based on what you were just saying: How do we deal with the nonbanks in terms of liquidity issues? As you pointed out in your talk, the possibility of systemic runs outside of the banks is increasingly high compared to past years. What can we do?

MR. BERNANKE: Well, as I was saying, the extent in, say, money market funds for example, where there is a liquidity risk, you need to think that through and make sure that either their mechanisms -- in the case of money market funds, for example, I mean, there are different ways to approach the problem. One would be to have liquidity requirements, and there are liquidity requirements of course for money market funds, and the question is are they enough, et cetera. The other approach, though, is to recognize that if you have a -- some people advocate the NAV, the floating

NAV -- net asset value -- so that the value of the money market funds always reflects their market value. And, as you know, that would substantially eliminate the run incentive, so liquidity wouldn't be an issue in that respect.

So, there's a lot of attention to regulating repo markets, money market funds, other non-bank dealers, et cetera, and I think any institution that engages in significant maturity transformation and is subject to run risk and is systemically important -- all those things -- and might therefore at some point come to the Federal Reserve and say we need cash. The time to think about that and to fix that and to provide the right incentives is not in the midst of the crisis but in advance of the crisis, in the development of the rules that you're setting up to govern liquidity practices.

So -- yeah.

MR. ELLIOTT: It sounds like implicitly one of the things you're saying is that the answers may differ quite considerably depending on exactly what the mechanism is that you're concerned about.

MR. BERNANKE: That's right, and as always it's -- you have to think about what are the secrets, what are the consequences?

MR. ELLIOTT: Right.

MR. BERNANKE: You know, so, you can imagine certain types of small institutions -- I'm not talking about banks, I'm talking about, I don't know, private equity or something -- where run risk is low or, if there was a run, it would be not so consequential. That would be a lower priority reasonably.

MR. ELLIOTT: Sure.

MR. BERNANKE: So, what you're looking for is places where there's run risk, where run risk can be addressed at least to some extent by various liquidity practices, and where the run risk has potentially serious systemic consequences, because that's where the moral hazard comes from, because that would generate the intervention from the government.

MR. ELLIOTT: Got one more?

MR. BERNANKE: Sure.

MR. ELLIOTT: Okay. One more from the audience. Okay, Alex.

MR. PRIVITERA: Thank you, Doug. Thank you for your speech, Mr. Chairman, if I can still call you like that Alex Privitera, AICGS.

MR. BERNANKE: Like being an ambassador, you know, for the rest of your life. (Laughter)

MR. PRIVITERA: My question goes -- basically I'd like to confront you with one of the comments that were previously made in one of the previous panels. One of the speakers was basically pointing out that in the current regulatory environment, including the capital and liquidity requirements that are being enforced, there's a clear basis towards big companies in terms of funding. It's much easier for big companies that fund themselves, and it's getting increasingly hard for small- and medium-size enterprises -- and this is a problem that affects Europe as well, by the way -- to get funds and that the funding structure has already changed across America. You know, I'm trying to quote as best as I can. And I'm wondering what your views are about that and whether you think that this has some cyclical reasons that are at play here whether we are actually changing the kind of financial structure and architecture in a way that is clearly having an impact on the real economy --

MR. BERNANKE: You're talking about non-financial companies getting --

MR. PRIVITERA: For non-financial companies, yes.

MR. ELLIOTT: This was Steve Strongin on the previous panel who was suggesting there'd been this shift.

MR. STRONGIN: The big companies that go to the bond markets (inaudible)

MR. BERNANKE: I see. Well, you know, I think that's something that has to be watched. I don't have a really good answer to that. Banks are still with us. In Europe they're much bigger relative to the economy than they are. I think a lot of what happened to small companies in the last few years was cyclical, because there were these balance sheets, very significant weakness in the balance sheets, which made them more difficult to lend to.

I think that as a general matter we're going to have to calibrate, as I said before, the general equilibrium effects of this. We don't know exactly how markets are going to change, how the pricing of short-term debt is going to change. And the cost of lending, you know? , the capital costs and the total cost of bank lending. So, I think that's a legitimate question, although it's also true that more and more firms are getting access to bond markets as well. But it's something I think is worth watching, and there's always a possibility of recalibrating in various ways, or if we're looking for alternative institutions that can -- you know, there are different -- there are other kinds of firms that can make loans to small companies besides banks, for example.

I realize I'm not really answering your question very well. What I'm trying to say is that it's an important issue. It's not easy to know in advance exactly how the market will shake out. But making credit available to small companies is very important not just for equity and community reasons but because small companies are where a lot of employment growth comes from, where a lot of innovation comes from, and we don't want to be in a situation where credit is not available to startup firms and small firms. So, I think that's something we just need to watch.

And there are a lot of aspects of all these changes that we don't really fully understand what the quantitative implications are going to be, and that's why I think that this ought to be considered a work in progress as we go forward. In particular, the Basel committee is very explicit about the fact that they're going to be putting out certain parameters and seeing how it works, and if it doesn't work they're prepared to change, et cetera, so it really is not set in stone at this juncture.

MR. ELLIOTT: Thank you very much.

MR. BERNANKE: Thank you.

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