IN THE UNITED STATES COURT OF FEDERAL CLAIMS

STARR INTERNATIONAL COMPANY, INC., Individually and on Behalf of All Others Similarly Situated, Plaintiffs, vs. UNITED STATES OF AMERICA, Defendant.	Case No. 11-779C

Courtroom 4
Howard T. Markey National Courts Building
717 Madison Place, N.W.
Washington, D.C.
Wednesday, October 29, 2014
9:30 a.m.
Trial Volume 22

BEFORE: THE HONORABLE THOMAS C. WHEELER

Josett F. Whalen, RMR-CRR, Reporter

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I N D E X

WITNESS:	DIRECT	CROSS	REDIRECT	RECROSS	VOIR
CRAGG	4980	5143			5070
	5073				

EXHIBITS	FOR ID	IN EVID
Plaintiffs'		
Number168		5123
Number266		5024
Number457		5125
Number500		5018
Number609		4979
Number625		5018
Number628		5125
Number661		5126
Number1202		5089
Number1214		5050
Number1469		5129
Number1475		5129
Number1478		5129
Number1513		5130
Number1843		4979

EXHIBITS	FOR ID	IN EVID
Plaintiffs'		
Number1845		4979
Number1849		4980
Number2248		4980
Number2329		5130
Number2388		5130
Number2473		4997
Number2485		5131
Number2504		5131
Number2527		4997
Number2528		5131
Number2536		5050
Number2539		5132
Number2540		5132
Number2542		5047
Number2563		5132
Number2564		5133
Number2572		5133
Number2726		5135
Number2734		4997
Number2735		5135
Number2816		5119
Number2826		5119

EXHIBITS	FOR ID	IN EVID
Plaintiff's		
Number 2857-A		5123
Number 2872		4997
Numbers5300-5381		5123
Defendant's		
Number933		5091
Number1555		4980
Joint		
(none)		

*All exhibits premarked for identification prior to trial.

*See full attached list of admitted exhibits following transcript.

P R O C E E D I N G S

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(Proceeding called to order, 9:30 a.m.)

THE COURT: We're on the record this morning in day 22 of the trial of Starr International Company versus the United States.

Good morning, Dr. Cragg.

THE WITNESS: Good morning, sir.

THE COURT: Do you understand you're still under oath in these proceedings?

THE WITNESS: Yes, I do.

THE COURT: All right.

Before we get started, I have a preliminary matter. I received the status report that the parties filed yesterday regarding a stipulation to the admission of some additional exhibits.

And pursuant to that stipulation, I hereby admit the following exhibits: Plaintiffs' Trial Exhibits 609, 1843, 1845, 1849, 2248 and Defendant's Exhibit 1555.

(Plaintiff's Exhibit Number 609 was admitted into evidence.)

(Plaintiff's Exhibit Number 1843 was admitted into evidence.)

(Plaintiff's Exhibit Number 1845 was admitted into evidence.)

(Plaintiff's Exhibit Number 1849 was admitted into evidence.)

(Plaintiff's Exhibit Number 2248 was admitted into evidence.)

(Defendant's Exhibit Number 1555 was admitted into evidence.)

MR. BOIES: Thank you, Your Honor.

THE COURT: All right. Please go ahead.

MR. BOIES: Thank you, Your Honor.

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Whereupon --

MICHAEL CRAGG

a witness, called for examination, having been previously duly sworn, was examined and testified further as follows:

DIRECT EXAMINATION (continued)

BY MR. BOIES:

Q. Dr. Cragg, when we broke yesterday, we had just looked at your chart, Plaintiffs' Trial Exhibit 5308, which showed the increase in CDO issuance in 2006 and 2007. Do you recall that?

A. Yes. It was the cumulative increase in the -- just multi-sector CDOs.

Q. Just multi-sector CDOs.

And multi-sector CDOs were the CDOs that we talked about yesterday where you had, as shown on what I've marked as Plaintiffs' Trial Exhibit 5391, a pool of securities that included RMBS bonds but also included credit card securities, corporate bonds and other bonds; is that correct?

A. Yes. The CDO market had about 1.2 trillion issuances at 2007, and about half of those, 641 billion, contained subprime collateral, so I'm using the term "multi-sector CDO issuance" to refer to those in particular.

Q. Now, you also talked yesterday about how, as you went into 2006 and 2007, subprime defaults increased. Do you recall that?

A. Yes.

Q. And would you turn to Plaintiffs' Trial Exhibit 5310.

And is this a demonstrative that you prepared that relates to that issue?

A. Yes.

Q. Can you explain what this demonstrates.

A. This demonstrates that -- so this -- across the horizontal axis we have year by year, and then on the vertical axis is the cumulative default rate on subprime mortgages after a twelve-month period.

And what we see over the 2003 to 2007 period is that, you know, at first the default rates on subprime mortgages were rising slowly and then 2006 and 2007 they rapidly increased. And these are default rates after just a year.

Q. And this shows that those default rates were at 3 percent in 2003, 3.5 percent in 2004, 4.5 percent in 2005, and then doubled to 9 percent in 2006 and then increased to 11 percent in 2007; is that correct?

A. Yes.

And what's important in kind of interpreting, these are the mortgages, the subprime mortgages, that were initiated in 2006, for instance, so that vintage had a 9 percent default rate. Those that were originated in 2007 have an 11 percent default rate.

Q. That's --

A. And obviously a 2003 mortgage isn't going to default after twelve months in 2007 because four to five years has gone by.

Q. That's an important qualification.

These are the default rates after twelve months for subprime mortgages originated in the year indicated.

A. Yes.

Q. Do you have some other charts on this subject?

A. I prepared a series of charts which illustrate, you know, the same points.

So if we go to 5311, you can see this is the 18-month default rate, so after a year and a half you can see that in the 2007 vintage, a fifth of them have defaulted, whereas, you know, three or four years earlier just a fraction had defaulted.

You know, I've done it with -- you know, done these calculations with other data sets, which I show in 5312, for instance, or 5313. But the overall point that -- that these data illustrate is that, as we go into 2006 and 2007, as the market becomes heated up, underwriting standards have fallen, and default rates reflected that as the -- as they increased.

Q. And what is the default rate that is shown here after 18 months for a subprime mortgage originated in 2007?

A. And you're looking -- just so we're on the same page here, which exhibit are you looking at?

Q. Well, I'm looking at the 18-month one for 5311.

A. Yes.

And you asked about 2007?

Q. Yes.

For subprime mortgages originated in 2007, what percentage of them defaulted after 18 months?

A. 20.5 percent.

Q. And that number was 17.5 percent for subprime

mortgages originated in 2006; is that correct?
A. Yes.
Q. And 9.5 percent for 2005?
A. Exactly. That's half of the 2007 number.
THE COURT: Just one second. I have a point of confusion here.
When it's 18 months and you're saying that it was a default on a mortgage originated in each of those years, does that mean that for a mortgage that originated in 2006, 17.5 percent defaulted within 18 months going probably into 2007?
THE WITNESS: Exactly.
THE COURT: Okay. Thank you.
BY MR. BOIES:
Q. And that number would have been 5 percent for 2003?
A. Yes.
Q. And 6 percent for 2004?
A. Yes, sir.
Q. Now, you also mentioned your demonstrative Plaintiffs' Trial Exhibit 5312.
A. Yes.
Q. And this shows -- is this the same data but for a default after six months?
A. Exactly.

So this is -- I mentioned earlier that I referred to more than one data set, and this is just a -- the six-month default rate calculated using alternative data.

Q. And what does this show, for the record?

A. This shows that after six months, in 2004, 2005, you know, less than 1 percent had defaulted within a half a year, in 2006 it's 1.5 percent, and then in 2007 it's two and a half times higher at 2.5 percent.

Q. Would you turn to Plaintiffs' Trial Exhibit 5313.

A. Okay.

Q. And I want to be sure that I understand what you've done here.

This shows the default rates for mortgages originated in 2003 to 2007 after twelve months; is that right?

A. Yes.

Q. And is that the same information that is in Plaintiffs' Trial Exhibit 5310?

A. Yes.

Q. The numbers are different. Why are the numbers different?

A. They're different because they're being drawn from a different data source. It's not atypical that you would see a -- you know, a difference in the pattern.

You know, they -- the vintages for 2003 through 2006 are virtually identical, and it's the 2007 number where one source is higher than the other. But they both show the same pattern, which is that in 2006 and 2007, default rates had increased substantially.

Q. Did you also look at the extent to which individual firms had or had not increased their issuance of multi-sector CDOs?

A. Yes, I did. In fact, as I think we spoke yesterday, there's an overall increase in the volume of originations of subprime mortgages, particularly in 2006 and 2007. That naturally leads to the issuance of more CDOs because, as we talked about yesterday, these securities are being -- these mortgages are being packaged into -- you know, put into a sieve which issues RMBS, and the low -- lower-quality tranches, you know, go to places like CDOs.

Q. Did you prepare any exhibits that deal with the multi-sector CDO issuance of individual companies?

A. Yes, I did.

Q. Which are those?

A. Well, they start at PTX 5314 and then they extend through I guess about another -- up through 53- -- PTX 5320, so I've got -- I've presented CDO issuance by firms here.

Q. Let me go to PTX 5314.
What does this exhibit show?
A. So this is a specific -- this is an exhibit that's specific to Goldman Sachs and shows that its CDO issuance going from 2005 to 2006 doubled. And then I've just highlighted that this is -- this covers the period when AIG had internally decided at the end of 2005 to stop writing CDS contracts on these types of CDOs.
Q. And this shows for 2005 CDO issuance by Goldman Sachs of $12.6 billion; is that right?
A. Yes.
Q. And CDO issuance by Goldman Sachs in 2006 of $25.4 billion?
A. Yes.
Q. And turning to PTX 5315, what does that show?
A. So this shows the -- instead of the annual issuance, this is now the cumulative issuance. And you can see, going from 2005 to 2006, its issuance had increased substantially so that its total was 38 billion in 2006, and they continued to issue into 2007 so that the total issuance was almost $50 billion.
Q. Then 5316, what does this show?
A. This is a similar pattern that's demonstrated for Merrill Lynch, where in 2005 it issued $14 billion worth of these types of CDOs and then in 2006 its issuances

almost tripled.

Q. So that Merrill Lynch issued $40.9 billion worth of CDOs in 2006?

A. Yes.

Q. And do you have a cumulative chart for Merrill Lynch like you had for Goldman Sachs?

A. I do.

So you can see that for Merrill Lynch, its cumulative CDO issuance increased going from 2006 to 2007 so that in 2007 its combined issuance was $83 billion.

Q. And you're referring here to what exhibit?

A. PTX 5317.

Q. And this shows that you had 14 billion in 2005 and then on a cumulative basis 54.9 billion of issuance in 2006 and then again on a cumulative basis $83 billion of CDO issuance in 2007 by Merrill Lynch?

A. That's correct.

Q. And would you turn to your chart PTX 5318 and explain that.

A. So again, this is for another firm. This is for Citigroup. It -- in 2005 it issued $11.1 billion worth of these types of CDOs, and then in 2006 its issuance more than doubled to $26.3 billion.

Q. And then is 5319, PTX 5319, a cumulative chart or an annual chart?

A. This is an annual chart.

And it shows, rather than for -- rather than for 2006 the comparison, this is now the comparison to 2007, where Citigroup's CDO issuance in 2007 was more than twice its issuance in 2005, so in 2005 it issued $11.1 billion worth of these types of CDOs and then in 2007 it was $28.3 billion.

Q. Would you turn to PTX 5320 and explain that.

A. Yes. Now, this accumulates the -- over the three years that we've been looking at. In 2005, as we've seen issuances, were 11.1 billion. If you add in the issuances in 2006, the cumulative total is $37.4 billion. And in 2007, it was $65.7 billion cumulative.

And you can see that Citigroup is a little late to the game in the sense that their volume of CDO issuance is higher than the others, so they're -- you know, and somewhat they're catching up, although they're catching up at what turns out to be the wrong time -- the wrong part of the cycle here.

Q. As part of your investigation, did you analyze the extent to which, if any, CDOs that were issued in the period that we're talking about were later the subject of litigation?

A. Yes.

Q. And did you prepare an exhibit relating to that?
A. I did, yes.
Q. Which exhibit is that?
A. That's PTX 5321.
Q. Would you explain what PTX 5321 is designed to show.
A. Certainly. Over the last 18 months, two years, a lot of the actions that the Department of Justice had brought regarding the origination of mortgages, many of those have now --
MR. DINTZER: Your Honor, we're going to have to object. We can't figure out how this -- how reciting actions that the Department of Justice has brought falls within the scope of any economic analysis.
I mean, it is what it is, and we did what we did, and if we did what we did successfully, that's good. But none of that has anything to do with Mr. Cragg's expertise unless he's an expert at telling the Department of Justice what they already did, so -- so we'd ask the Court to block this testimony on this slide as not relevant.
The plaintiffs can cite to this if they want to in their -- the existence of these things, but I don't understand how that's economic expertise.
THE COURT: Mr. Boies?

MR. BOIES: I can explain the relevance. Would the Court prefer that I did outside the presence of the witness, however?

THE COURT: I think so. If we're going to discuss this, I think it would be best if you stepped out in the hallway briefly, Dr. Cragg.

THE WITNESS: All right.

(Whereupon, the witness was not present in open court.)

THE COURT: All right. Mr. Boies?

MR. BOIES: Your Honor, I don't think that he is intending to opine on the validity or invalidity of what the Department of Justice did. I think what he is going to do is use this as a data point, a fact, and then he will apply his economic analysis to those facts.

For example, I know that there is a chart further on that I have been looking for that may be 5365, somebody suggests to me, that shows, just as an example, the amount of CDOs that were allegedly problem CDOs for AIG that were ultimately put in Maiden Lane II and Maiden Lane III that were the subject of these Department of Justice assertions. And I think that that is certainly relevant in terms of assessing how AIG came to be in the position it was, as well as the control issues associated with the giving of releases that the

Court has heard about.

Obviously, the more the CDOs in Maiden Lane III with respect to which releases were given were the subject of later assertions by the government that these were fraudulent, the more valuable those releases came -- became to it or were to the counterparties.

So I think there are a variety of things that these initial facts will be relevant to in the witness' analysis, but all we're doing now is having him identify what those facts are. He's not purporting to evaluate the legal issues I don't believe.

THE COURT: All right. Any reply, Mr. Dintzer?

MR. DINTZER: Yes, Your Honor.

These actions -- and they don't have the Bates here, but I believe all of these actions happened well -- the actions by the department happened well after the relevant dates in the case, and so that -- they couldn't -- the actions themselves couldn't play a role.

Whether the chart that Mr. Boies identified -- I don't believe the expert has done an analysis where he went back and found out which of the CDOs were specifically found to be fraudulent or alleged to be fraudulent. If he had, we don't see that in his report, and so if that is a citation to his report where he's done that specific analysis, you know, a CDO-by-CDO, this is a bad one, we didn't see that.

And maybe I'm wrong and maybe Mr. Boies can point me to -- if he's going to do that analysis.

Other than that, Your Honor, the fact that ultimately there were allegations and that I -- I believe all of these were settled -- I might be wrong -- which means that -- that I'd be surprised if they went CDO by CDO.

But regardless, it doesn't have any role in his actual -- in economic analysis. He can make whatever economic analysis he wants, but these later settlements don't provide any information to that.

THE COURT: I think as factual data points that he may rely upon, I'm going to allow this. I think it's -- I mean, I don't know how important it's going to be to the ultimate outcome of the case, but I think it has some relevance.

And I think maybe the defendant opened the door to this subject in alleging the other day through cross-examination of Mr. Farnan that AIG had been derelict in conducting its own business. And as I said at the time, I didn't think that resonated very much with me because I thought there were others participating in this economic crisis to the same extent, if not more, and I think this information would tend to corroborate that.

MR. DINTZER: Could I be heard on that, Your Honor?

THE COURT: Sure.

MR. DINTZER: Just along those lines -- and we heard what Your Honor said about that, but to be clear, Mr. Cragg had his report where he lays out what he understands were the causes of AIG's problems. That report and his rebuttal report and his deposition existed before Mr. Roberson did the examination of Mr. Farnan.

And to the extent that plaintiffs' expert is providing basically a -- what they believe is a road map to why AIG was not responsible for its conduct, that -- that -- we don't think that that has any relevance.

None of the people who came to talk about the decisions that were made and the prices that were set on the loans said that it was -- it was because of malfeasance or anything along those lines.

But to the extent that they are offering this, this information, and to the extent that AIG's problems may have affected its riskiness in 2008, which the plaintiffs are also making an issue out of based on they're saying that there wasn't any reason to ask for these terms, those are being raised by the plaintiffs.

And so I understand -- we absolutely heard what Your Honor said about the testimony, about Mr. Farnan, and we understand that, but it's important for the Court to just understand that I believe Mr. Roberson was eliciting that testimony in anticipation of the expert who had already and was already planning on opining about this.

THE COURT: Okay. Well, I appreciate that explanation, but I just think under all of the circumstances we have here that I'm going to allow this testimony and the analysis that he's done.

MR. DINTZER: We understand. Thank you, Your Honor.

THE COURT: All right. Very well.

MR. BOIES: And I will say, Your Honor, that we're not going to spend a lot of time on this.

THE COURT: Sure. I understand.

MR. BOIES: We agree with the Court that this is a tertiary or --

THE COURT: It's kind of a side issue.

MR. BOIES: It is. And I recognize it. But it has floated in and out, and I wanted to just deal with it directly.

THE COURT: Okay. Let's have Dr. Cragg come back in.

(Whereupon, the witness was present in open court.)

THE COURT: Thank you for your patience, Dr. Cragg. The upshot of all of this is that you're going to be allowed to talk about Plaintiffs' Trial Exhibit 5321.

THE WITNESS: All right. I'll do my best since you guys all discussed it already.

BY MR. BOIES:

Q. And could you summarize what significance this has to you, but do so relatively quickly since we have been through it.

A. Yes.

So one of the critical issues during this period of time was the representations and warranties that were being made on both -- on the collateral at all levels. And as it turns out, many of those reps and warranties were violated because of fraud in the underwriting process, and so this -- this exhibit summarizes the results of litigation related to these issues.

Q. And this relates to litigation brought against Bank of America, Citigroup, JPMorgan, and involving Merrill Lynch and Countrywide; is that correct?

A. Yes. Exactly.

Q. And you summarize here various statements that are contained in Plaintiffs' Trial Exhibits 2734, 2527, 2473 and 2872; correct?

A. Yes.

MR. BOIES: And Your Honor, I would offer those exhibits for the limited purpose of establishing the statements made by the defendant there and to illustrate what the witness has relied on in his analysis.

MR. DINTZER: We're going to object on relevance, Your Honor, based on the argument that we've provided.

THE COURT: All right. The objection is overruled, and the following exhibits are admitted for the purpose stated: Plaintiffs' Trial Exhibits 2734, 2527, 2473 and 2872.

(Plaintiff's Exhibit Number 2734 was admitted into evidence.)

(Plaintiff's Exhibit Number 2527 was admitted into evidence.)

(Plaintiff's Exhibit Number 2473 was admitted into evidence.)

(Plaintiff's Exhibit Number 2872 was admitted into evidence.)

BY MR. BOIES:

Q. Dr. Cragg, I now want to move to what was happening in the second half of 2007 and 2008, and you talked about the default rates of subprime mortgages and how those increased.

How did that affect that was happening in the financial markets generally?

A. Well, if you remember yesterday, I was speaking about the role that AAA collateral played in the wholesale funding market. It was used as collateral in, you know, trillions of dollars worth of repo transactions. And the reason that collateral and the level of wholesale lending increased was that counterparties considered that collateral to be as good as money, that they could lend back and forth, and they didn't have to worry about counterparty credit risk.

It turns out that as you go into 2007-2008, counterparties and the market overall became concerned about that underlying assumption that AAA RMBS securities could be treated like money and ultimately that lack of confidence, as it plays itself out over the course of the end of 2007 and then into 2008, into, you know, a massive crisis in confidence as it turns out.

Q. And have you prepared some demonstrative exhibits that illustrate the points that you're making?

A. Yes.

So starting on the PTX 5322, there are several demonstratives which I think are useful for demonstrating the dynamic that was occurring over this period of time.

Q. Let's start with PTX 5322.

What does this exhibit demonstrate?

A. Well, this exhibit is -- you know, along the horizontal axis we have time, and then on the vertical axis we have index values for various tranches of subprime RMBS.

The blue line corresponds to, you know -- it's an index, so it's price levels that people thought that the AAA RMBS were worth.

The orange line here corresponds to AA RMBS.

And then the red line corresponds to the lower-quality BBB RMBS.

So that's what's shown in the picture. The economic content of this I think well illustrates the dynamic that was occurring in the wholesale and repo markets.

So in particular, as people started to worry about RMBS that contained subprime collateral, they no longer accepted that in repo transactions. And that started to lead to real problems in the market.

So you can think of, if you're not accepting that as collateral, it starts to suck liquidity out of the market, so, you know, someone who has an overnight repo transaction that was covered with a AAA RMBS, at some point the counterparties could say to you, Well, I'm not going to roll the repo to the next day. You have to have replacement collateral to keep your funding.

And that process started towards the end of 2007 and really accelerated in the beginning of 2008. And if you're sitting there with a repo that you can't roll overnight, you know, you have essentially, you know, three options. You could try to deleverage. You could try to raise funds to cover that financing by selling your security. Or third, you can replace it with some other collateral.

Or alternatively, the counterparty can take a bigger haircut and say, I'll lend you less against this, against this collateral.

THE COURT: You have some acronyms on this chart that I wanted to ask you about.

What does "ABX" stand for?

THE WITNESS: So ABX is the -- it was -- this index was created in 2006 by a company called Markit, so they started selling securities on this index, so you can buy or sell contracts as they relate to this ABX index. In particular, "ABX" stands for asset-backed index.

THE COURT: And then remind me about PDCF and TSLF in the first bullet.

THE WITNESS: So these are two credit facilities or two liquidity facilities that were created by the Federal Reserve.

"PDCF" stands for prime (sic) dealer credit facility.

THE COURT: Yes. I've heard about them previously.

THE WITNESS: Yeah.

BY MR. BOIES:

Q. Now, let me just ask a clarifying question.

You've got an index for AAA, you've got an index for AA and you've got an index for BBB; is that correct?

A. Yes.

Q. Now, when we were going through and describing CDOs yesterday, we talked about how you had a super senior tranche, a AAA tranche. We then talked about a single A tranche.

Was there also a AA tranche in here?

A. Yes. Exactly.

Q. So these were just examples.

A. Those were examples, yes.

Q. There would be additional tranches.

A. Exactly. There would be layers of securities ultimately. I can't remember what the average is, but certainly over six layers of securities for any -- the financing of any SPV.

Q. And what does this show in terms of the index for BBB subprime securities?
A. Well, with the BBB subprime securities, you know, very rapidly the market lost its confidence in there being cash flows adequate to back the interest and principal payments that were owed on those securities.
Q. And are these securities what we referred to yesterday as RMBSs?
A. Yes.
So I think you -- it's the previous picture that you have.
Q. It's on my RMBS chart, which is PTX 5390 for identification.
The BBB doesn't get paid until after the tranches above it are paid; is that correct?
A. That's right.
And we talk about the bathtub, you know, the first -- as the money is flowing out of the pool of mortgages, it first goes into the RMBS bucket -- sorry -- the super senior bucket. And then once that's full, it then goes into the AAA bucket. And then once that's full, it goes into the single A bucket, and so on.
I mean, effectively that's how the cash flows are being distributed across the different securities. And you can see why the super senior has the highest rating

because they're getting the first slice of the cash flows that come out of the pool of mortgages.

Q. Now, with respect to the AA index that's shown on PTX 5322, it falls very sharply, and then in the last quarter of 2009 and continuing in 2010 into early 2011, it goes up and then comes down a little bit and then goes up again.

A. Yes.

Q. Whereas, the BBB sort of flat-lines down at about 5 or 10 percent; correct?

A. That's right.

Q. What was causing the increase and then the decrease and then the increase again in the AAA index, as you understood it?

A. So for both the AAA and the AA indices, I had just started to describe the process of illiquidity being created in the repo market. And the core piece that leads to investor uncertainty here is people start to see the default rates on the 2007 and 2006 subprime collateral, and they make a number of inferences from that.

One is, well, they'd like to know what its impact is on the intrinsic value of these bonds and then -- and by that I mean, if you looked objectively at the cash flows, what would you value them at. And then they realize like, well, I can't actually tell what the cash flows are because it's all embedded in this very complicated, you know, structure. It's like, you know, a colander full of spaghetti. If you start to try and, you know, pull one, you know, piece of spaghetti you can't -- I mean, it's all tangled up.

And so that causes, you know, a loss of confidence in all securities that contain subprime collateral.

And what you see during this period -- and you see this reflected in the discussions at the FOMC -- is that the concept of fire sale pricing or panic pricing sets in.

So there's a liquidity spiral that happens. I started to describe it. At first, you can't roll your repo, so your option is I can either sell this or replace it. But the core of that is that no longer is the underlying security illiquid, so it's -- you know, as a result, you've got to find a replacement.

Those who can't find a replacement have to sell. And that creates, you know, fire sale pricing. And that then reinforces this downward spiral as the next person who, you know, suffers from this fire sale pricing then sees that the haircut on their repo is even higher, and it all becomes a self-reinforcing spiral down where, for this type of collateral, the market has lost its confidence in the underlying value.

And what's I think very interesting about both the AA and the AAA indices is that you see them, you know, particularly falling rapidly in March and then after September again, when market confidence is really declining. And then after the recovery, when people begin to realize that, you know, our confidence is -- our lack of confidence is unwarranted, you see the pricing of these -- of this AAA and AA collateral bouncing back.

So it reflects -- these indices really reflect the lack of liquidity, the panic pricing, the fire sale prices, and then when they -- when liquidity starts to return to the market, not surprisingly, the indices also recover.

Q. Let me ask you to look next at PTX 5323, and is this a demonstrative that you prepared?

A. Yes.

Q. And what are you trying to illustrate in this demonstrative?

A. So this demonstrative summarizes what was happening and the importance of the repo market.

So if you remember yesterday, I had spoken about how repo was very important in the parallel banking system, and it was particularly important to broker-dealers who were at the center of the parallel banking system because, you know, half of their funding, half of their balance sheet was supported by repo and -- and they're highly levered, so for them, the repo market is extremely important.

What you see with the overall size of the repo market is that by the time we get to March 2008, it's over $4 trillion, about $4.5 trillion. And it starts to fall off very rapidly following the cycle that I just described, so by the time you get to September of 2008, a trillion dollars has been drained out of this market, so a trillion dollars of financing has been, you know, sucked out of the wholesale market. And that cycle continues, so another trillion dollars is lost again over the period September to December 2008.

So this crisis of confidence and the lack of -- you know, the illiquidity that is reflected in the RMBS market has a really important impact on financial markets and particularly those that are at the center of the parallel banking system.

Q. Now, you said one of the alternatives that broker-dealers had when confronted with this collapse was to deleverage. Do you recall that?

A. Yes.

Q. And did you prepare a chart that illustrated the extent to which that actually happened?

A. Yes.

PTX 5324 is a continuation of the earlier chart that we looked at. I can't remember what number it is, but it looks just the same. And it shows that going from Q1 of 2008 forward there's a very rapid deleveraging that starts to happen.

And one of -- you know, we talked a little bit about the GSEs yesterday, you know, the government-sponsored entities that guarantee a huge fraction of the RMBS market. There's actually over this period real concern about them also, and so that's another factor that's leading to the illiquidity in the RMBS market. And then how that, you know, ultimately gets, you know, reflected is shown in the average -- leverage ratios for primary dealers, so that as that trillion dollars and then -- grows to $2 trillion dollars, that forces a deleveraging of the primary dealers.

And of course, that -- you know, those who, you know, don't have access to liquidity have to start selling securities, and that just reinforces this whole negative dynamic, this whole negative cycle.

Q. Now, we talked yesterday about how with respect to these multi-sector CDOs that AIG issued the CDSs only for

the super senior CDOs. Do you recall that?
A. Yes, I do.
Q. And did you prepare a chart that gives examples of evidence that you relied on in determining the significance of that?
A. Yes.
PTX 5323 summarizes AIG's approach to managing its CDS portfolio.
Q. And would you go through these points and explain what their significance is.
A. Certainly.
So first off, the CDS contract itself is a negotiated contract. And AIG was negotiating the coverage, the insurance that it would provide on the super senior layer of the CDO. It did two things in its negotiation.
One is, it, you know, tried to ensure that the cushion that lay below the super senior CDO was large, so it was trying to make the share of the cash flows that go to the super senior -- you know, just making that share smaller so that any losses get suffered in the tranches below.
In terms of its calculation of where the division between the super senior tranche and the AAA tranche occur, that's called, you know, the attachment point. In

negotiating the attachment point, AIG was stressing the cash flows so that in all but the most extreme circumstances, using the post-war period, that in all those circumstances AIG would not lose money, so that -- would not have to make a payments under the CDS contracts, so, you know, that could or could not result in it losing money ultimately. But it was trying to ensure that there wasn't going to be default coverage that it was going to be exposed to.

Q. Can I just stop you for a second.

You mentioned "attachment point," and would you explain what you mean by "attachment point."

A. So the attachment point -- let's say the -- for this CDO that we have in PTX 5391 that 80 percent of the securities are subordinated to the super senior security. That would mean that the attachment point is at the -- is at 20 percent.

So it's a way -- it's the industry lingo for, you know, saying what fraction of the SPV is actually insured.

Q. Let me be sure I understand it.

If the attachment point were 20 percent, that would mean that as long as the pool of securities threw off 20 percent of what they were supposed to throw off, the super senior tranche would be okay?

A. Yes.

Q. But if it only threw off 19 percent, there would be a loss of 1 percent by the super senior?

A. Yes.

Q. And if it threw off 25 percent, 20 would go to the super senior and 5 would go down to the AAA?

A. Yes.

Q. Now, were there any other provisions in CDS contracts that AIG negotiated that were designed to limit its risk other than only providing protection for the super senior tranche?

A. Yes.

So in terms of how these contracts were designed to pay off, these are called physical settlement contracts, which means that if there's an event of default, AIG pays to the counterparty the par value of the bond, and then it gets the bond back and then it receives the cash flows from the bond.

So that's kind of how the contract works. That's different than the contracts that were used in the 2006 and 2007 periods, which were called pay-go contracts or pay as you go, which meant that for each time there was a cash flow shortfall, the insurer would make up for the difference, so they're just going along, you know, over time making sure that the cash flow is there, but they don't actually get the security back.

So AIG's contract is, you know, substantially different in that way.

The other aspect of the contract that matters during this period of time is that in terms of -- so you can imagine, with a contract like this you'd want the counterparty to post collateral if they're going to have to buy back the bond at some point in time.

The amount of collateral that AIG was required to post, it only did so after the bond fell in price, let's say, you know, 10 percent, so there's a period where it doesn't have to post any collateral. It's only after there's a significant fall in the price of the underlying security that it has to then post collateral on the contract.

Q. Did AIG also have to post collateral in the event that AIG was downgraded in terms of its rating?

A. Yes.

So there are two ways that that collateral threshold moves around. One is if the underlying credit rating in the bond changes. And then the other is if AIG's credit rating declines.

So as AIG's credit decline -- credit rating declines, that threshold amount gets smaller so that that the cushion before it has to post collateral gets smaller.

Q. Now, the fourth point on your chart PTX 5325 refers to the percentage of AIG's CDS portfolio that was diversified.

Do you see that?

A. Yes.

Q. Did you prepare a chart that deals with that in greater detail?

A. Yes.

So the point here is that the -- AIGFP's overall CDS portfolio is not -- is diversified. It's not all invested in multi-sector CDS.

If we look at PTX 5326, this illustrates the point that we saw in the last slide, which is that the multi-sector -- that the CDS on multi-sector CDOs was limited to 20 percent of the overall notional value.

You can see here in PTX 5326, which is simply a chart of the fraction of the overall CDS portfolio that the multi-sector CDOs represents, so the overall portfolio that AIGFP held was $441 billion, and the multi-sector CDOs represent $80 billion of that total portfolio or 18 percent.

The largest portion of the CDS portfolio was for what are called regulatory capital arbitrage CDS. And when you look at the history of that and the corporate arbitrage portfolio, neither of those had, you know, substantial losses. Through September 2008, both those -- you know, the major part of AIG's CDS portfolio had lost $400 million.

Q. Now, $400 million sounds like a lot of money, but that compares to regulatory capital of $307 billion; is that correct?

A. Yes.

Q. Let me go back to your chart PTX 5325.

The last point, can you explain the significance of that.

A. So the last point here is that AIG had constructed this portfolio so that it was a low-risk portfolio. It was designed so that it wasn't going to, you know, make payments, even looking at the most stressed of scenarios over the last half century. And in fact, it didn't actually have any, you know, events of default until well into 2008.

And then perhaps most importantly, it wasn't until September 30, 2007 did you have any collateral calls that were being made on the CDS contracts.

And so even though there was concern about the pricing of the underlying bonds, you know, as the financial crisis started, it wasn't until into 2008 that AIG had to start making -- posting collateral on these contracts.

Q. In 2007, did AIG, as you investigated it, undertake any actions to try to address potential liquidity issues that it might face?

A. Yes.

As you could imagine, once the housing prices had peaked in 2006 and they were starting to come down and people started to observe what was happening with the default rates on subprime mortgages, there was, you know, overall concern in the market because nobody actually knew where the subprime mortgages were.

And AIG, you know, proactively started to tell its investors, its clients where it was exposed to subprime risk and how it was managing that risk, so it definitely started taking steps, and they're really quite -- what it was doing was quite public.

Q. And did you prepare a demonstrative illustrating some of the evidence that you took into account in reaching that conclusion?

A. Yes.

If you look at PTX 5327, I've highlighted a number of actions that AIG began to take to deal with potential liquidity issues that would come out of that point -- you know, the recession started in December of 2007 -- the actions it took as people began to think that a recession was starting, so a number of actions that it took to deal with potential liquidity issues.

In November 2007, it made investor presentations about what it was doing, and it formed a liquidity risk committee to, you know, prepare for stress scenarios in the current marketplace, so it was to deal with, you know, the stress that would be expected in the normal course of action or normal course of a downturn.

AIG had -- as part of its investment portfolios, there had been demand to borrow bonds from hedge funds and from broker-dealers for their clients, and AIG was lending out bonds. That's called securities lending.

When you make a loan of a security in a securities lending deal, you get collateral back, and the parties agree to how the collateral is invested, and then they split the proceeds from the -- from that investment.

So if you -- if I lend you a corporate bond, you could give me cash or Treasuries back. I then invest that cash in some kind of security. In this case they were investing some of it in RMBS. And then I share the proceeds with you when you give me back my bond and then I give you back your collateral with a return on it.

AIG in the third quarter of 2007 had started to reduce the size of its securities lending portfolio that had been invested in RMBS. By the time we get through September 2008, AIG had reduced the overall size of its securities lending portfolio that was invested in RMBS. It had reduced that by 25 percent, so it was pulling out of that market.

Q. In addition to those steps, did AIG undertake any efforts to raise additional capital from the private market?

A. Yes.

So as the financial crisis develops and starts to blossom, in March and April, it started to have to make collateral postings on its CDS portfolio. And it was, as I described earlier, worried about its overall liquidity needs.

In May 2008, AIG raised $20 billion, and then again on August 18, 2008, AIG raised another $3.25 billion, so it was raising money through the 2008 period to bolster its liquidity needs.

Q. Now, you mentioned mark-to-market losses --

A. Yes.

Q. -- and collateral postings?

Did you analyze the extent to which the collateral calls that were being made by counterparties deviated from the intrinsic values of the underlying CDS contracts and their underlying CDO security?

A. Yes, I did.
Q. And what did you conclude?
A. Well, overall, you know, my primary conclusion is that the amount of collateral that AIG was required by its counterparties to post way exceeded any reasonable estimate of the actual risk of nonpayment on the CDS contracts. You know, if you look at the -- you know, the underlying CDO contracts that AIG was insuring, the risk there was very small and the risk had not actually been really realized.

And so the process that was under way, you know, Chairman Bernanke described it this way, that it was like mad cow disease. And I think he got that analogy from a colleague of his named Gary Gorton who called it E. coli disease, where what was happening -- and they called -- both of them referred to it that way, is because the fear of the impact of subprime was just like the fear that happens in the food market where, when you hear about, you know, potential tainting of food in some part of the country, everybody stops consuming that.

And that's what happened with securities that were -- that had a taint of subprime with them. People fled from those securities and then destroyed the market for anything that's related to subprime collateral.

MR. BOIES: Your Honor, I would -- with respect to PTX 5327, I would offer Plaintiffs' Trial Exhibits 500 and 625 for purposes of illustrating what the witness has relied on.

MR. DINTZER: Your Honor, we have no problem with them coming in under 703 for the sole purpose to support the witness' testimony. I believe that's what counsel is proffering them for.

THE COURT: Yes.

MR. BOIES: Yes.

MR. DINTZER: If that's it, then we do not object to that for that sole purpose.

THE COURT: All right. Plaintiffs' Trial Exhibits 500 and 625 are admitted for the stated purpose.

(Plaintiff's Exhibit Number 500 was admitted into evidence.)

(Plaintiff's Exhibit Number 625 was admitted into evidence.)

BY MR. BOIES:

Q. Did you prepare some demonstratives that show the deviation, in your judgment, of the mark-to-market value or collateral call demands and the intrinsic values of the underlying AIG CDS contracts?

A. I did. It's PTX 5328.

Q. And can you explain briefly what this refers to.

A. So this chart has three bars. The first bar represents what BlackRock had -- and I'll explain what they were doing in just a second -- what BlackRock projected would be the maximum losses associated with the AIG -- if it actually got the CDO portfolio, what the maximum losses would be. And that -- those losses are the difference between the dotted line here, which is the total notional amount of the portfolio, which is $77 billion. That's what AIG would have to pay to the counterparties to buy all the bonds. If it did so, BlackRock estimated that that bond portfolio was worth $69.8 billion, and that's in their base case.

Now -- and let me just explain. In the stress case, BlackRock said that that portfolio was worth $61.9 billion.

Now, BlackRock was a -- is a very well-known investment management service, does a wide variety of activities in the fixed-income market. And AIG had hired them, then eventually the Federal Reserve Bank of New York hired them, to value the intrinsic value of the AIG portfolio.

And the way they did that was to project what would be the cash flows associated with the SPVs over time, so it went through the calculations that I had alluded to yesterday about what would be the impact of defaults, the drop in housing prices, how would those impact the cash flows that came out of the SPV as they flow into the CDOs that are insured by AIG.

So BlackRock made those projections, and these are the results of those projections.

So the losses --

Q. Let me just stop you for a second because I want to be sure that I'm understanding what you're saying.

The notional value of the AIG multi-sector CDO CDS portfolio was at this point in time $77.1 billion; is that correct?

A. Yes.

Q. And what is the time that that is true for?

A. So we're looking at the end of September 2008, so right -- you know, this is -- you know, the beginning and end of September 2008, that's the size of the notional amount or the par value of the bonds that AIG had written CDS contracts on.

Q. And am I correct that what you're saying is that in the base case, BlackRock estimates that the value of that portfolio is not 77.1 billion but is only 69.8 billion?

A. That's correct.

Q. And that would imply a $7.3 billion loss.

A. Exactly.

Q. And BlackRock also did a stress case?
A. It did a stress case, yes.
Q. And in the stress case, they estimated that there would be a $15.2 billion loss so that the portfolio was only really worth $61.9 billion?
A. Yes.
So that 15.2 billion that you mentioned is the difference between the notional amount, the dotted line here of 77.1 billion, and the gray bar, which is 61.9 billion.
Q. And with respect to the collateral postings, you're saying, as of this time, AIG had already posted $36.9 billion?
A. That's right.
Q. And that implied that the portfolio was only worth 40.2 billion.
A. Yes.
Q. That is that there would be a loss of 36.9 billion on it.
A. That's exactly how -- well, so they had posted collateral of $36.9 billion, and the implied value of the portfolio was $40.2 billion therefore.
Q. Did you investigate as to how it actually turned out, that is, what the underlying values of the AIG multi-sector CDS portfolio turned out to be?

A. Yes, I did.
Q. And do you have a chart on that?
A. That's at PTX 5329.
Q. And can you explain what this shows.
A. So I've looked at what was the actual cash flow experience on the CDOs, how do they actually perform over time, so up through earlier this year, to see what the -- you know, the implied -- you know, what the actual experience has been on this portfolio.
And the -- the implied -- so the CDS contract implies an outflow or a loss of cash when AIG has to perform on the contract, so when it performs, it gets the bond back. And what this orange line represents is the shortfall in expected cash flows from the bond.
So they were expected to pay an additional $16.6 billion over the last five or six years, so the actual cash flows from these bonds has been lower than expected.
When you compare that to the cash flow projections that BlackRock made, so their base case is slightly below that, they expected the cash flow projections to be about $15.7 billion short of what the bonds were contracted to pay. And then in their stress scenario, the shortfall in cash that's being generated by the CDOs relative to their contract amounts is $23.5 billion.

So it turns out that BlackRock, you know, did a very impressive job of projecting what the actual cash flows have looked like. And if you look at the underlying assumptions that they use, one of the most remarkable things is that they almost perfectly projected the -- so in 2008, they almost perfectly projected the path of housing prices over the last six years. You might say they're in the wrong business, but that's what they did.

Q. Would you turn to Plaintiffs' Trial Exhibit 5330.

Is this an exhibit that you prepared?

A. Yes.

Q. And can you explain briefly what this exhibit shows.

A. So I've described to -- this panic pricing, the mad cow effect, and it has a massive impact on AIG in that AIG has to post collateral to its counterparties, and it has to post collateral which is far in excess of any reasonable measure of risk, as the BlackRock projections show.

In this graph, I have the actual collateral calls over time. That's the blue line.

So starting in June 2008, AIG had posted just over $15 billion of collateral. Over the course of the summer, it increased by $5 billion.

And then as you go into the financial crisis and in particular AIG's downgrade on September 15, the collateral calls on AIG increase from about $23 billion up to $35 billion. And by this point, the collateral calls exceed BlackRock's stress projections by over $20 billion, so AIG has posted $20 billion of excess collateral relative to any risk, you know, any reasonable measure of risk.

MR. BOIES: Your Honor, with respect to Plaintiffs' Trial Exhibit 5330, I would offer Plaintiffs' Trial Exhibit 266 for the limited purpose of illustrating what the witness has relied on.

MR. DINTZER: No objection, Your Honor.

THE COURT: All right. Plaintiffs' Trial Exhibit 266 is admitted for the stated purpose.

(Plaintiff's Exhibit Number 266 was admitted into evidence.)

BY MR. BOIES:

Q. Let me ask you to turn to PTX 5332.

And is this an exhibit that you prepared?

A. Yes.

Q. And am I correct that the blue line here is the same blue line as what appears on PTX 530?

A. They're identical. Yes.

So that's the -- that blue line, the dark blue line that you're referring to, are the actual collateral calls that AIG's counterparties made.

Q. And what is this PTX 5332 designed to illustrate?

A. Well, it's designed to illustrate the difference between the collateral calls and the actual defaults on the underlying CDOs.

If you look at the very bottom, close to zero here, there's a dotted blue line. Prior to September -- that dotted blue line represents the actual events of default that occurred on the multi-sector CDO that under- -- that were -- that the CDSs had insured. There are only three events of default.

And so on an event of default, AIG has to buy back the bond and it gets the bond back in return. That represents 6 percent of the total notional amount of the CDS portfolio, so less than $3 billion up through, you know, the Lehman failure.

So when you look at the realized risk on this portfolio, it was very small.

Q. Now, this line of collateral postings jumps up around September 15; is that correct?

A. Yes.

Q. Now, if you turn to Plaintiffs' Trial Exhibit 5339?

A. Yes.

Q. Does this show the daily net outflows from collateral postings and securities lending?

A. Yes.

So PTX 5339 is an amalgam or the combined amount of collateral that AIG was posting each day, and it's combined with the shortfall on securities lending, so on any given day with the securities lending portfolio there could be a shortfall on the loans that came due, so AIG would owe money to its counterparties that way. And then there's some other collateral calls on another small portfolio.

So this is the combined outflow on any single day. And you can see on September 15, the total cash flow impact or liquidity impact on AIG of the downgrade, as well as the run that by this point was occurring on its securities lending portfolio, as well as other wholesale funding for AIG, that that day required an outflow of $14.3 billion.

Q. When did Lehman declare bankruptcy?

A. On that day. It was I think 12:42 in the morning.

Q. So that September 12 was the last business day before Lehman declared bankruptcy, and September 15 was the first business day after Lehman declared bankruptcy?

A. Yes. It also coincided with the first day that I started working at the Brattle Group, but that's less important to the story.

Q. And I hope there was no causal connection.

A. I hope not, too.

Q. Now, am I correct that looking at your chart, PTX 5329, prior to September 12, during the month of September, AIG had only had a net outflow from collateral postings and securities lending combined of less than a billion dollars?

MR. DINTZER: Your Honor, we don't mind a little leading, but that probably crosses the line for us, so we'll have to object on that one.

THE COURT: All right. Maybe you can rephrase?

MR. BOIES: I will, Your Honor.

BY MR. BOIES:

Q. If you look at what you've prepared as Plaintiffs' Trial Exhibit 5339, how much net outflow from collateral postings and securities lending had AIG made in the month of September prior to September 12?

A. Well, you can calculate that by adding up these blue bars through November 11. And if you add those up, they combine to less than a billion dollars.

So even though earlier in the month you had the government taking over the GSEs -- I think that was on the 8th and 9th of September -- it hadn't -- its -- how would you say it -- its liquidity outflow -- it was keeping up with its liquidity outflow and it wasn't getting stressed, at least at the beginning of the month.

Q. Okay. So September 1 to 11, how much was it?

A. A billion.

Q. A billion?

A. A billion dollars, yes.

Q. Are you rounding?

A. I'm rounding, yes.

Q. What was it?

A. 900 million.

Q. And then on September 12 what was it?

A. Well, on -- and so of that billion dollars, I should note that $700 million flowed out on September 11. On September 12, $1.7 billion flowed out of AIG that day. And what was -- so that's Friday. By that point -- so that's 1.7 or -- is that what you wrote or is that 17 billion?

Q. 1.7 billion.

A. Sorry. I couldn't see the decimal point.

AIG was starting to really have trouble maintaining its wholesale funding sources, so it was having trouble rolling its commercial paper. It was also no longer able to roll its securities lending. And then there are a couple of other programs where it was beginning to experience the beginning of a run on AIG as the market started to pull back from AIG specifically.

Q. And how much were AIG's cash outflows from collateral postings and securities lending on September 15, that one day?

A. That one day, that's $14.3 billion.

Q. And how about on the 16th?

A. On the 16th it was another 7 billion.

Q. Did you reach a conclusion as to what effect, if any, the Lehman bankruptcy had on financial markets in general and AIG in particular?

A. Well, the events around that period and specifically the failure of Lehman, which also coincided with the effective failure of Merrill Lynch because it was taken over by B of A that weekend, that caused enormous disruption in an already fragile market. And it -- it affected every -- every major financial firm.

Q. And have you prepared demonstrative exhibits that summarize some of the evidence that you have relied on in reaching that conclusion?

THE COURT: Before we get to that, maybe we'll take a morning break. We'll come back at 11:15.

(Court in recess.)

THE COURT: You may go ahead.

MR. BOIES: Thank you, Your Honor.
BY MR. BOIES:
Q. Dr. Cragg, would you look at Plaintiffs' Trial Exhibit 5333.
A. Yes.
Q. And is that a document that you prepared?
A. Yes, I did.
Q. And what is the purpose of preparing that document or what does it demonstrate?
A. Well, it -- I think it's a summary -- my own opinion is that, you know, Lehman Brothers and the failure of Lehman Brothers and the series of events that happened to the financial sector at that point in time was, you know, incredibly destabilizing, and I don't think there's any -- anyone in the economics or finance community that disagrees with that. These are a number of quotes that correspond to my own conclusion.
Q. And what about Plaintiffs' Trial Exhibit 5334? Is that a document you prepared?
A. Yeah. I think this is a -- again, it's I think an undisputed fact among scholars and financial practitioners that in that period of time the liquidity crisis affected everybody. You know, it affected solvent firms tremendously. It just -- during that -- you know, during September 2008, it was, you know, in terms of the

impact on liquidity -- and I'm emphasizing liquidity, not solvency -- it was tremendous.

You know, Chairman Bernanke in his FDIC testimony summarized it well when he said: During September and October of 2008, 12 of the 13 most important financial institutions in the United States had either failed or were at risk of failure. And he said that here at trial also.

Q. Let me ask you to look at Plaintiffs' Trial Exhibit 5335.

Is this a demonstrative exhibit that you prepared?

A. Yes, it is.

Q. And what does it show?

A. Well, this is a calculation -- this is a graph of the difference between overnight LIBOR, which is the London interbank offer rate, so it's the rate at which banks lend to each other, subtracted for the -- from the OIS spread, which is the expected return on Treasuries for that same day, so it's the difference between, you know, the risk-free rate and then the rate that banks charge each other. And that spread is used in a lot of research as a way of analyzing when financial events happen.

And you can see that during the crisis week, when

Lehman, Morgan Stanley, Goldman Sachs, Merrill Lynch, when the money market mutual funds, the commercial paper market, when AIG, when all of those events were happening at the same time, the overnight LIBOR spread skyrocketed and hardly surprising because nobody wanted -- everyone was hoarding their liquidity. They were all, you know, in fear of failure, because of liquidity.

Q. Let me ask you to look at PTX 5338.

Is that a chart you prepared?

A. Yes, it is.

Q. And what does that illustrate?

A. Well, this corresponds exactly to -- so that -- so just -- so first off to say that this is the CDS spread, credit default spread for AIG, so it's the -- if you wanted to bet on AIG's failure, you'd buy a credit default swap.

And you can see that AIG, you know, through the beginning of September, its credit default swap was, you know, rising slightly but basically, you know, flat.

And then corresponding exactly actually to your demonstrative on the flip chart there, as that cash begins to flow out of AIG, which is happening exactly at the same time that everybody is experiencing that liquidity crisis, you see AIG's CDS spread skyrocket.

And that's because the market saw that there's a run on AIG, and so if you wanted to make a bet on AIG's failure, which you would do by buying a credit default swap, that becomes a very expensive proposition, which reflects the likelihood of AIG's liquidity problems leading to a default.

Q. Is it fair to say that Plaintiffs' Trial Exhibit 5335 illustrates the effect of the Lehman bankruptcy on the market generally as it related to banks lending to each other?

A. Yes.

Q. And is it fair to say that Plaintiffs' Trial Exhibit 5338 reflects the effect of the Lehman bankruptcy on AIG?

A. I -- yes. In the sense that both the Lehman bankruptcy and the events on AIG, it's all in a lot of ways -- there's a lot of feedback that's happening in the system.

The failure of Lehman and Merrill Lynch and, frankly, the other investment banks over that week have an enormous impact on the market overall, which has an enormous impact on AIG. But, you know, there's feedback between all of these events.

Q. And let me ask you to look next at Plaintiffs' Trial Exhibit 5341.

A. Yes.

Q. Is that a chart that you prepared?
A. It is, yes.
Q. And can you explain what this shows.
A. Well, this shows the cumulative liquidity outflow from AIG over the course of 2008, so I'm taking a longer snapshot over time.
And if you look at the beginning of the year, on December 31, 2007, AIG had posted only $2.7 billion of collateral. It had no problems rolling its commercial paper at that point. There was no -- it had no issues of liquidity.
And then over the course of the -- up through the summer and even up to August 31, 2008, AIG is steadily posting more collateral on its CDS contracts. You know, it's raised money during this period. It's raised $23 billion during this period. But there's this, you know, crazy mismatch between the true value of the CDOs that it had insured and, you know, the way they were being marked.
During that first week of September, so going from August 31 to September 8, as your chart reflects there, there's no change in the amount of cash outflow from AIG. And then as your chart indicated as we looked at it more closely, the run on AIG begins to start. And by "run" I mean counterparties getting nervous about AIG and its

ability to repay short-term funding. And then that takes off with the failure of Lehman, and so on.

So on the day -- over the course of Friday to Monday, September 15, when the Lehman bankruptcy occurred, and then to the end of the week, AIG in one day posts an additional 15 or so billion dollars and then over the rest of the week -- so that's the difference between the value on Monday, the 15th, 49.1, and Friday, the 12th, 34.7, so that's about $15 billion.

Q. That's how much?

A. 15.

And then --

Q. Do you want to add that -- do you want to take that arithmetic issue a second time?

A. So I'm taking the difference between 49 and 34.

Q. Oh, that's the 15.

A. Yeah.

Q. I got you.

A. And then going out to the rest of the week is $25 billion.

Q. I got you.

So it goes up 15 and then up another 25?

A. Yes.

Q. So it goes up --

A. $40 billion over a five-day period or, you know, five-business-day period.

Q. And this is the cumulative liquidity outflows from collateral postings, postings related to downgrades and securities lending balance outflows; is that correct?

A. Yes. The -- when you say the -- AIG's downgrade, its impact, its impact is on collateral postings. If you remember, when I talked about that threshold amount on the CDS contracts, that threshold gets smaller, and so when there's a -- with a downgrade, and so AIG has to post collateral as a result of the downgrade.

And so what you have is this -- I think -- I know in my report there was a picture of -- maybe it's in here somewhere -- of AIG's liquidity spiral.

Q. Was that -- let me just see.

Was that Plaintiffs' Trial Exhibit 5336?

A. Yes. 5336, exactly.

This summarizes I think the series of market impacts that were happening to AIG.

So at the beginning of the year you have downgrades on the CDO portfolio. Those are the securities underlying it. The counterparties demand collateral for those contracts. It turns out that that is right in the middle of this mad cow period. I call this the run -- actually, Gary Gorton, who I think -- who presented this theory to the Federal Reserve Board in August, where they have a retreat every August. He presented this, called it the run on repo.

So the run on repo is happening. That leads to negative valuation adjustments. That leads to collateral call drains. Eventually the credit rating agencies get concerned about AIG's liquidity. That of course caused more liquidity problems and that ultimately then leads to a run on AIG.

So that whole process is happening because of these market events which are driving AIG's problems.

Q. Now, was AIG very highly leveraged compared to other financial firms at this time?

A. No. It looked like, you know, very much like a, you know, traditional bank or insurance company.

Q. Did you prepare a chart comparing AIG's leverage with that of other important financial institutions?

A. Yes, I did. I just don't remember the number.

Q. Is that Plaintiffs' Trial Exhibit 5337?

A. Yes, it is.

Q. And what does this show?

A. So it shows the ratio of AIG's liabilities or total assets to the market value of its equity. And that gives you a measure of how much leverage there is.

For AIG, in 2005, 2006 and 2007 -- so I'm looking at this on, you know, an ex ante before basis before the financial crisis occurs -- it's, you know, 4.3, 4.7 and 6.4 in 2007. When you compare that to a variety of other financial institutions, you know, large conglomerate financial institutions, it has a, you know, lower leverage than, let's say, Bank of America, Citigroup, Goldman Sachs, JPMorgan, Lehman Brothers or Morgan Stanley.

Q. Am I correct that when AIG moves from a 4.3 liabilities to market value of equity to 4.7 in 2006 to 6.4 in 2007, that shows an increased leverage?

A. It does. And that partly reflects that -- two factors. One is AIG's, you know, liabilities or assets might be rising, but its market value of equity is also declining (indicating).

Q. And if you compare AIG's leverage in 2007 of 6.4, is that comparable to Bank of America's leverage of 8.4 and Citigroup's of 14.1?

A. Yes. This is a standard measure of leverage. You can of course measure leverage in other ways, but this is, you know, a very standard way of doing it. And by this measure, AIG is less leveraged than these other institutions are.

Q. And Lehman Brothers is the most heavily leveraged of the ones you've identified here at 19.4?

A. Yes.
Q. And Morgan Stanley the second highest leveraged?
A. Yes.
Q. At 17.9?
A. Yes.
Q. Now, did you examine whether from an economic standpoint AIG would have been able to raise capital in the private sector in September of 2008 in the absence of the Lehman bankruptcy and the resulting destabilization of financial markets?
A. Well, AIG had raised money in August. I mean, markets were tight at that stage, but it still was able to raise money. It was rolling its short-term funding, so both on a wholesale -- on the securities lending portfolio, which is, you know, funded on a wholesale basis, that was rolling. Its commercial paper programs were also rolling, so AIG was, you know, able to, you know, have -- you know, get liquidity from the market as it needed over that period of time.
So without the -- you know, the Lehman crisis and the related issues, it would seem that AIG should be able to do that. I think that's what Mr. Baxter also had concluded in his testimony, too.
Q. Let me ask you to turn now to the economic theory of the Federal Reserve as the nation's central bank.

A. Yes.
Q. And in that connection let me direct your attention to Plaintiffs' Trial Exhibit 5342.
And is that an exhibit you prepared?
A. Yes.
Q. And what was the purpose of preparing this exhibit?
A. Well, I'm trying to provide a synthesis of material that supports my own conclusions about how the Federal Reserve is the nation's lender of last resort, how it's responsible, as a matter of economics, for providing liquidity in times of financial crisis.
Q. And what do you rely on in that connection?
A. Well, generally speaking, I'm relying on -- you know, when we go back to, you know, my education, you know, these issues were central to -- when you do -- you know, when you go through a macroeconomics class with, you know, the people who educated me, the role of the central bank is central.
And then throughout my career, you know, it's -- it plays a central role in the way I think about, you know, the research I do and the types of activities I engage in.
So this is -- you know, ultimately that's what I rely on. These statements also confirm and, you know,

show that there's a, you know, very broad understanding of what the Federal Reserve's role is as the lender of last resort.

Q. And where Mr. Geithner says that the Federal Reserve and the central bank had the responsibility to provide liquidity in periods when financial markets were disrupted and private sources of capital or liquidity were inadequate, is that something that you would agree with?

A. Oh, absolutely. I mean, I think what he says here, Ms. Mosser, you know, also describes.

Mr. Bernanke as well as Mr. Geithner both point to the principles of Mr. Bagehot and how the Bagehot dictum is what is used by central bankers for guiding their decision-making, where, you know, during a panic, central banks should lend freely to whoever comes to their door, as long as they have collateral, should give them money.

I mean, that's -- when you think about the role of a central bank in being the lender of last resort, it -- you know, it's the backstop that creates confidence in the financial system, and confidence is -- you know, that is what maintains the stability of the system.

And so in the -- the federal bank, as the lender of last resort, is to create that confidence when there is a crisis of confidence by market participants, so it's there to restore confidence when there's panic.

Q. Did you investigate historically how the Federal Reserve had used its section 13(3) lender of last resort authority?

A. Yes, I did.

Q. And did you prepare a demonstrative exhibit that summarizes some of what you found?

A. Yes, I did.

Q. And what is that?

A. So on PTX 5343 is a summary of some of the early uses that the Federal Reserve made of 13(3) when it was making loans to, you know, individuals and nonbanking institutions and the types of collateral that it had used for that.

So, you know, they -- you know, the history of 13(3) and its use by the Federal Reserve is very interesting. In this demonstrative exhibit, you know, I show that during the period 1932 to 1936, the Federal Reserve had made 123 loans. And when you go through them, they're -- they're -- I don't know. I find them kind of curious and interesting, that, you know, in 1932 a quarter of a million dollars was lent to, you know, a vegetable grower, you know, 300,000 to the Smith Corona typewriter company.

Even some of the collateral is I think historically interesting, you know, certificates representing 10 barrels of brandy and 89 barrels of rum.

So how this had been used historically I think is interesting. And then for a very long period of time 13(3) wasn't utilized, and that's partly because, you know, the history of banking in the United States is that there's been great stability since the creation of the Federal Reserve Act and the Federal Reserve System, so you wouldn't generally expect to see it being used.

You know, in the 1966 to 1969 period, there was an authorization to extend credit to thrift institutions, but that ultimately wasn't used.

And again, in 1970 -- I think this is during -- for the -- for the Penn Central crisis, again, it was considered to be used but ultimately not used.

So 13(3) is there as an important tool for the Federal Reserve, but it had only been used really, you know, a very long time ago.

Q. Let me turn to some of the actions that the Federal Reserve took in 2008.

And am I correct that you've prepared some demonstrative exhibits that summarize those?

A. Yes, I did.

Q. And there's already been quite a bit of testimony about some of these, so I'd like to go through these relatively quickly, but if I could ask you to look at Plaintiffs' Trial Exhibit 5344.

A. Yes.

Q. And is this an exhibit that you prepared?

A. It is, yes.

Q. And what liquidity assistance does this relate to?

A. So this relates to the single-tranche open market operations that the Federal Reserve began.

So if you think about the crisis period building in the second half of 2007, the Fed reacted, you know, using traditional tools. It lowered the discount rate, and then it created the Term Auction Facility for commercial banks where it auctioned off, you know, tranches of liquidity.

And then it didn't really do anything until we get into March, when, as I've described, the repo market, the wholesale funding market, was really running into trouble. And since it was going to affect a large portion of the financial system, the Fed started to create some new tools for that.

It did two things in that first week -- sorry -- the second week of March. It created the term structured lending facility, which is like the TAF that was for commercial banks. It created an analog for primary dealers. And then later that week it created the primary discount credit facility, which we've heard a lot about, which is an analog to the discount window that the Federal Reserve already had for commercial banks.

Now, the reason I give that history is that in the week of March 12, 13, and 14, so that's Wednesday, Thursday and Friday, that weekend was the Bear Stearns weekend. They announced on I think the 12th the term structured lending facility, but it wasn't operational until for a couple of weeks.

So that week, the primary dealers were really in crisis, and so the Federal Reserve created the single-tranche open market operations where it auctioned off liquidity to primary dealers as a Band-Aid for that week to get them through the resolution of Bear Stearns.

Q. And when was the single-tranche open market operations announced?

A. It was announced and started to be utilized the same day as the term structured lending facility, which was either March 11 or March 12.

Q. And the single-tranche open market operations, that was pursuant to section 14 --

A. Yes.

Q. -- of the Federal Reserve Act?

A. Yes.
Q. And --
A. And I just made one point about that. You'll see in that 5344, PTX 5344, that I've highlighted that the collateral is agency mortgage-backed securities, and that's the market -- so that was the -- at that point, you know, the gold standard were Treasury certificates, and then the next layer down were these agencies, the GSE-backed mortgage-backed securities.
Those were no longer thought to be, you know, gold-plated, and so this was a recognition of the run on repo that was occurring. And it was a way of immediately injecting liquidity into the repo market where, as we saw earlier, starting in March, you know, a trillion dollars started to get sucked out of that system.
Q. And what you've done in 5344 is compare the terms of the AIG revolving credit facility with the terms of the single-tranche open market operations?
A. Exactly.
Q. And then if you go to Plaintiffs' Trial Exhibit 5345, is that a chart that you prepared?
A. Yes.
So this is a chart that summarizes the first time that the Federal Reserve used 13(3) during the crisis. It had been working on this program over the last couple

of weeks. It finally announced it -- well, I guess just so -- it announced it on March 11, so that's exactly the same day as the ST OMO program was announced.

And this was, again, a facility to provide collateralized term funding to primary dealers. And again, it was -- it used -- it kind of extended the quality of securities to include agency-backed RMBS. And again, the reason for that is to support or try to resuscitate the repo market where people were fleeing mortgage-backed securities, so this is another piece of -- another policy tool that was being utilized to, you know, try to create confidence in that particular market.

MR. BOIES: Your Honor, I would offer Plaintiffs' Trial Exhibit 2542 for purposes of illustrating the witness' testimony.

MR. DINTZER: We don't object for that sole purpose, Your Honor.

THE COURT: Plaintiffs' Trial Exhibit 2542 is admitted for the stated purpose.

(Plaintiff's Exhibit Number 2542 was admitted into evidence.)

BY MR. BOIES:

Q. And if you would turn then to Plaintiffs' Trial Exhibit 5346, is this a chart that you prepared?

A. Yes, it is.
Q. And what does it show?
A. Well, it shows the next use of 13(3), the second use of 13(3) that week. And it was a bridge loan to Bear Stearns, which was failing at that point. It was, you know, suffering. It had been one of the more highly levered of the investment banks, and the run on repo was really affecting it more than others.
And the reason for that is, in the run on repo, people started to worry about counterparty credit risk, and Bear Stearns had higher credit risk than the others, and so it suffered from the run worse. And an overnight loan was put in place in order to get Bear Stearns to the weekend so that they could figure out what to do with its pending failure.
Q. Let me ask you to look next at Plaintiffs' Trial Exhibit 5347.
Is this a chart that you prepared?
A. Yes, it is.
Q. And what does it show?
A. So this is a summary of the Federal Reserve's third use of 13(3). Again, it was at that week. It was also announced on March 16. It was created over the weekend.
And it was created to subsidize JPMorgan's

purchase of Bear Stearns. And it provided a subsidy by taking assets that JPMorgan didn't want to purchase as part of its acquisition of Bear Stearns and putting those assets into a special-purpose vehicle.

It used a 13(3) loan to finance the SPV as well as a little bit of equity, but it was a way of essentially guaranteeing that JPMorgan wouldn't have to bear the costs of some of Bear Stearns' riskier assets.

Q. Would you look next at Plaintiffs' Trial Exhibit 5348.

A. Yes.

So 5348 is a summary of the fourth use that the Federal Reserve made of 13(3). And this was to -- also on Monday. It created the Primary Dealer Credit Facility.

Again, this is another collateralized loan facility designed to address the -- you know, as I've been calling it, the run on repo. And it did so by allowing primary dealers to borrow -- in the tri-party repo market to borrow against collateral that included agency-backed RMBS.

And so this was a facility -- I mean, it was created very quickly because it was just essentially the Federal Reserve participating in the tri-party repo market as if it was a regular counterparty in that market, so whereas usually you would have -- in the tri-party repo market you'd have, you know, let's say, a bank doing a repo with another bank, now it -- and they would use an agency-backed security, instead, in the tri-party repo market, they would have a bank doing a tri-party repo with an agency-backed security, and the counterparty would now be the Federal Reserve Bank of New York.

MR. BOIES: I have some follow-up questions, but with respect to Plaintiffs' Trial Exhibit 5347, we would offer Plaintiffs' Trial Exhibits 1214 and 2536 for purposes of illustrating the witness' testimony and indicating what the witness relied on.

MR. DINTZER: No objection, Your Honor.

THE COURT: All right. Plaintiffs' Trial Exhibits 1214 and 2536 are admitted for the stated purpose.

(Plaintiff's Exhibit Number 1214 was admitted into evidence.)

(Plaintiff's Exhibit Number 2536 was admitted into evidence.)

BY MR. BOIES:

Q. Now, with respect to the PDCF, that was announced you say on March 16, 2008; is that correct?

A. Yes. So Monday, March 16, 2008.

Q. Was the 16th a Sunday or Monday?
A. I guess I'm assuming that it's -- so the 12th is a Wednesday I believe, so it's Sunday, you're right.
Q. So it was -- it was announced on a Sunday and the first loan was on Monday.
A. Yes.
Q. And as of March 20 --
A. Wait, wait. It had already done the ST OMO loan earlier in the previous week, so it's not the -- necessarily the first loan. It's just, you know, the -- you know, the beginning of a series of loans that are being -- you know, being extended.
Q. But the first loan under the PDCF would have been on Monday, March 17; correct?
A. Yes.
Q. And there were a total number of recipients of these 13(3) loans through the PDCF as of March 20, 2008 of 20 firms; is that right?
A. Well, the number of firms that could use the PDCF.
Q. Those are the number that could use it.
A. Yes.
Q. That were eligible to use it.
A. Exactly.
Q. And the percentage of PDCF loans that were used by

the top five users was what?
A. 85 percent.
So of the 20 that were given access, the predominant use was by a handful of firms.
Q. There has been some discussion as to whether this was a "broad-based" facility or not.
What conclusion did you reach with respect to that issue?
A. Well, it's actually -- I don't think that's a fair characterization of the program when you call it broad-based. Many institutions that participated in the tri-party repo market in exactly the same way as the primary dealers did were suffering in the same way.
And there are also a variety of other -- you know, the acronym is, you know, SIFIs -- significantly important financial institutions that were excluded from this program.
And that was recognized. It was recognized very quickly, both internally at working groups at the Federal Reserve Bank of New York as well as -- during the summer, as well as in the blueprint for reform that was put out by the Treasury Department in March.
As well, you see, if you look through the record, there's a slew -- you know, a variety of e-mails that talk about, well, the problem is the PDCF has not -- and

the TSLF have not actually solved the run on repo the way we hoped. If you look in the FOMC meeting notes, that's what you see amongst, you know, the top officials at the -- at the Federal Reserve.

So there's a recognition that this definition doesn't -- didn't solve the problem and that something else had to be done.

Q. There's also been some testimony or discussion as to whether the PDCF was a very short-term facility.

And did you investigate that?

A. Yes, I did.

Q. And what did you find?

A. Well, it in fact, while it was announced to be I believe through the summer of 2008, it was extended several times. There's no -- it was a very easy program to continue, and so I guess it was rolled over several times over the course of the financial crisis.

And it had to be. I mean, it was -- it was a lifeline.

Q. And when they announced the PDCF, did they announce that the PDCF would continue for some number of months?

A. Yes. Yes.

Q. And then when they extended it, did they always provide that the PDCF would continue for some number of months in the future?

A. Yes.

And the reason for that is, the presence of the PDCF was designed to create confidence. And taking away the PDCF at a time when there's still uncertainty would have a negative impact on the market's confidence.

And that's something that, for instance, Chairman Bernanke noted in -- during the summer. You can see this in the FOMC meeting notes, where he was observing that the PDCF wasn't being used during the summer, but it seemed to be serving a positive purpose of creating kind of a, you know, backstop or a discount window for primary dealers.

Q. Let me ask you to look at Plaintiffs' Trial Exhibit 2870. This is in your big, thick binder.

A. Did you say 2730?

Q. 2870.

A. Oh, by the way, as we're flipping through, I see PTX 2857-A illustrates the point I was making with Chairman Bernanke, which was he noticed that the PDCF, towards the end of the summer, wasn't being used, but it still served a -- you know, was valuable. And as you can see, it obviously was used during the September financial crisis.

You said 2870; right?

Q. Yes, I said 2870.
A. This press release from February 3?
Q. Yes.
MR. BOIES: Which I would offer, Your Honor.
MR. DINTZER: Your Honor, this is not on their exhibit list, so we would object.
MR. BOIES: Your Honor, the government witnesses have asserted that the PDCF was an overnight facility where they could lend money without worrying about having to have it out for a significant period of time.
In fact, what the evidence shows is that when it was originally announced, it was announced that you could borrow overnight and you could roll it over and that that program would last for several months so that people knew at the time that they could in effect borrow it for at least as long as that initial end date, and the evidence will show that that initial end date at the very beginning was announced to the market as it might be extended, and in fact it was extended.
And so this was not just overnight loans, as some of the witnesses have attempted to characterize it, but it is money that was being loaned for an extended period of time. And we think this is appropriate rebuttal evidence.
THE COURT: Mr. Dintzer, would you like to --

MR. DINTZER: Yes, Your Honor.

Avoiding the need to counter his characterization of the witnesses' testimony, they did testify about the nature of the loans, and more than one witness did that. And the proper time, if counsel wished to use the document of course, would have been to impeach them and to -- or to refresh them or to do whatever he wanted to do with the document.

The whole point of having the exhibit list is so that both sides will have an understanding of what's on the list so that we can then choose to use or not use or whatever. But to have it now, after those witnesses have testified, and whatever testimony is to be offered about the document without them having the opportunity to address it seems that -- seems unfair to the witnesses, and so we would continue our objection that it not be added to the exhibit list and that it not be entered into evidence.

THE COURT: Well, this is a close call for me because of the way in which we've been allowing the government to go beyond the scope of the direct. If the case had gone along in a more typical fashion where you have one side and then the other present their case, it's easier to then identify what is strictly a rebuttal exhibit when you do it that way.

So it is a close call, but I think on balance I'll sustain the objection.

MR. DINTZER: Thank you, Your Honor.

BY MR. BOIES:

Q. As part of your analysis, did you investigate the extent to which the PDCF was more than an overnight facility?

A. Yes, I did.

Q. And what did you find?

A. I found that it was used by a variety of different institutions for certainly longer than, you know, overnight. They would continually roll their loans for a period of time. And that behavior continued for a couple of years.

Not to say that the loan was out for two years, but rather, in general, the program was extended and that users would use the loan facility for more than an overnight loan.

Q. Let me ask you to turn next to Plaintiffs' Trial Exhibit 5349.

A. Yes.

Q. Is this a document that you have prepared?

A. Yes, it is.

Q. And what does it show?

A. Well, it shows in aggregate how the

Federal Reserve assistance changed over time.

You know, you can see the pattern here. You know, starting at the beginning of 2008, total borrowing through the Term Auction Facility had only grown to, you know, about $60 billion. In March -- so this is a response to the -- kind of the beginning of the financial crisis in the late 2007 period.

In March and over, you know, the course of the summer, there was, you know, extensive use of the Term Securities Lending Facility -- that's this section here in lilac -- and then the single-tranche open market operation, which I mentioned, which is the turquoise, and then finally in the flesh-colored tone here is the Primary Dealer Credit Facility.

The aggregate use of those programs up through September was about $340 billion, and so those were all programs which were designed to try to resuscitate the repo market, which -- where mortgage-backed securities were no longer terrific or great collateral.

And then it's kind of interesting, so nothing -- so over the course of the summer, the period -- it was relatively calm. However, Treasury thought actually that there were still a lot of problems in the market, in particular with the GSEs.

So while this focuses on Federal Reserve actions, in July there's actually a really significant event, which is that Mr. Paulson went to Congress and asked for the authority to provide unlimited backing to the GSEs. You know, the phrase he used was: I need a -- I'm asking for a bazooka because when you go into battle you don't want to have a squirt gun because you might have to use the squirt gun, and your hope is not to use the bazooka.

So that was how he loaded up going into September. And as we know, he used that authority at the beginning of September because the GSEs which were backing much of the mortgage-backed security market really failed.

And that started, you know, the great unraveling, and over the next few months another $800 billion were borrowed from the Federal Reserve.

Through all of these different programs, there was particular use made of the Primary Dealer Credit Facility, so I think that's actually the exhibit that I had mentioned a little while ago.

Q. That was PTX 2857-A?

A. Yes.

That shows the PDCF exploding after the summer when it hadn't been used.

Q. Could you turn to that in your big binder. That's in your very large binder.

And what does Plaintiffs' Trial Exhibit 2857 show?

A. So this is an exhibit that I prepared in my rebuttal report -- it's figure 6 -- which is the daily use of the PDCF.

And starting with its opening at the end of March, we can see immediately upon the program starting it was immediately used over the course of the spring. It then -- its use fell off through the summer and then exploded with the financial crisis in the second week of September.

Q. Did AIG have access to the Primary Dealer Credit Facility?

A. No.

Q. To the Term Securities Lending Facility?

A. No.

Q. To the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility?

A. No. That was -- by the way, that was a facility -- I meant to mention that facility was created in the week of -- that Lehman and Merrill Lynch and AIG, Goldman and Morgan Stanley, that they were -- during that week that they were all having trouble, there was a, you know, kind of a great sucking sound as the money, you know, got sucked out of the money market mutual funds and commercial paper markets, and you know, over the course of a few days, several hundred billion dollars, you know, just vaporized.

That program was created to stop the run in those markets.

Q. Let me ask you to look at Plaintiffs' Trial Exhibit 5351.

Is this a chart that you prepared?

A. Yes.

Q. And what does this chart demonstrate?

A. Well, it -- it -- it's a summary of how the financial assistance was being utilized by a variety of different institutions.

So the government provided a variety of different types of support, so you got support through the new programs that were created as well as the old programs that were created to support commercial banks and thrift institutions.

So, for instance, the Federal Home Loan Bank is, you know, the discount window for thrifts, just like the Federal Reserve is the discount window for commercial banks.

This table adds up for each institution all of the support they were receiving from the Federal Reserve and the Federal Home Loan Bank Board for four dates in time:

April 1, September 1, September 15 and September 30.

And it lists, for AIG, Bank of America, Citigroup, Goldman Sachs, JPMorgan, Lehman Brothers, Morgan Stanley and Wells Fargo, how much use they made in aggregate of these programs. And you can see that in April there had been an extensive use made by a variety of these institutions. As you get into the September period, much more use is being made by these institutions.

And it's important because this support was allowing them to -- you know, to survive and deal with their liquidity needs in a way that AIG never was able to benefit from until obviously in September.

Q. And you say AIG survived longer without liquidity support than other financial institutions; correct?

A. Yes.

Q. And as of September 30, 2008, AIG was at that point receiving liquidity support from the government; correct?

A. Yes. That's the support it's receiving from the revolving credit facility.

Q. And that's $61 billion?

A. It is, yes.

Q. And that compares with what amount of support for the same date for Bank of America?

A. So Bank of America $63 billion, Citigroup

$124 billion, Goldman Sachs $31 billion, JPMorgan $101 billion. Lehman Brothers was in bankruptcy. Morgan Stanley received -- was receiving $106 billion and Wells Fargo $27 billion.

Q. Now, on September 14, was there a change made to the PDCF?

A. Yes.

So originally I had described how the PDCF included securities, Treasuries and agency-backed securities. Those are the primary collateral that was acceptable.

Q. And do you have a chart on this?

A. Yeah, I do. The next one, PTX 5352.

Q. And what does that show?

A. So this shows -- illustrates the change that occurred on September 14, where the types of collateral that were usable at the Primary Dealer Credit Facility were expanded.

So there was an anticipation that the following week -- so it was expanded on September 14. The expectation obviously was that there was going to be chaos since Lehman was filing for bankruptcy that night. And one of the ways that the government tried to, you know, deal with that was to expand the Primary Dealer Credit Facility to allow a whole different range of collateral and lower-rated collateral.

And so you can see how -- you know, a comparison between March 25 and September 29, 2008, that the type of collateral that's being used is -- you know, is vastly different, whereas previously it was investment grade and government debt securities, now it included unrated debt securities, non-investment grade debt securities, nonsecuritized loans and equity.

Q. Now, you said with respect to an earlier chart that Lehman was bankrupt and out of business by January -- I mean September 30, 2008.

Did they nevertheless in September, before they stopped, actually borrow money from the PDCF?

A. Yes, they did.

I just want to make one more point about PTX 5352 if I can, which is, basically the collateral -- the acceptable collateral at the PDCF now became anything that was used in the repo market, and that meant basically any security where you got a valuation could be used as collateral.

So it could be private equity. It could -- it really could be anything, as long as you got a third-party valuation.

Q. And did that include RMBSs and multi-sector CDOs?

A. Yes.

Q. And in the second half of September, was it actually, as a practical matter, something that people can do, that is, take RMBSs and multi-sector CDOs to the repo market and get cash?

A. No. That's the whole problem that was trying to be solved, is that there -- you know, the repo market had become restricted to basically Treasuries.

You might be getting a little tired of me referring to my work history, but I vividly remember driving to work that week and there was an NPR radio station on and that they had gone to a repo desk in New York and were interviewing, you know, some repo dealers, and there was nothing happening.

I mean, it was -- I don't, you know, usually listen to -- I don't really remember very many radio stories, but this just struck me that, you know, the lack of noise in this trading room was just so remarkable.

Sorry.

Q. No. That's okay.

Let me ask you to look at Plaintiffs' Trial Exhibit 5353.

A. Yes.

Q. Is this a document that you represented?

A. It is.

So this, you know, summarizes how, after Lehman's bankruptcy, its primary dealer continued to borrow from the PDCF, so after the parent company went into bankruptcy, the primary dealer subsidiary actually was borrowing significant amounts over the course of that week as, you know, various things were -- various other things were occurring then.

Q. On September 15, 2008, how much had Lehman Brothers' primary dealer subsidiary borrowed from the Federal Reserve?

A. Well, on September 16, it was $38 billion.

Q. And what about on September 15?

A. Then on September 15 it was $46 billion.

Q. And in each case was a majority of that from the Primary Dealer Credit Facility?

A. Yes.

Q. Did you investigate the extent to which, if any, access to the Primary Dealer Credit Facility or a comparable facility would have addressed AIG's liquidity issues?

A. Yes, I did.

Q. And did you prepare a chart illustrating your conclusions?

A. Yes.

PTX 5354 and PTX 5355 summarize the analysis that I did on the loan amounts that AIG could have received from, you know, a PDCF-like or the PDCF itself.

Q. Let me ask you to look first at PTX 5354.

What does this demonstrate?

A. So what I've done is calculate -- based upon the insurance regulations and the type of collateral that each of the life insurance subsidiaries had, I've calculated what would be the maximum loan amount that you could get through the PDCF, so it's how much liquidity could you get. And I've compared that to the liquidity needs of each of the life insurance subsidiaries that arose from their participation in the securities lending program.

And you can see for each of these companies, the blue bar, which is the loan that could have been, you know, achieved in the tri-party repo market, which is the PDCF at this point in time, the loan that -- for instance, you know, the first company is -- at the bottom of the page here is the index.

The first company is AIG Annuity Insurance Company. Through tri-party repo or, you know, with the government, you know, the PDCF, it could have achieved, you know -- received $27 billion at this point in time and on the securities lending balance that was owed was a

little under 20 billion.
And so if you look at each of these life insurance subsidiaries, you can see by comparing the blue bar to the red bar that there's plenty of collateral that can be used to cover the liquidity needs that AIG's securities lending program -- that arose from the securities lending program, because ultimately all that needed to happen was the shortfall in wholesale lending that was coming through securities lending just needed to be replaced by repos, so it's actually a very simple problem that they faced.
Q. Let me ask you to look next at PTX 5355.
A. And by the way, I would just note that, you know, later on, you know, they -- you know, whereas as we've talked earlier about how the PDCF was very quickly created, it said it's just a relatively simple transformation of the tri-party repo market, later on, a same -- the same program was created for AIG, so once it had entered the RCF, you know, a similar program got created for this problem.
Q. But that was after the RCF was created.
A. Exactly, yes.
Q. If AIG had had access to the PDCF or a similar facility in early September of 2008, could that have prevented the need for the RCF?

A. Well, if you look at -- if we remember back to our discussion about the liquidity shocked AIG on Monday, September 15, much of that came from two sources. One was because of AIG's downgrade, and the second was because of the securities lending, kind of the run on AIG's short-term funding, which included securities lending, and so on.

If AIG had backstop liquidity earlier in September, the rating agencies wouldn't have had to be concerned about AIG's liquidity. That's ultimately what led them to downgrade AIG on Friday, that that was one of their -- that became one of their primary concerns.

MR. DINTZER: Objection, Your Honor.

The witness is offering an opinion that he not only did not put in his report but he expressly disclaimed in his deposition, and so we would ask the Court to limit the witness and not let the witness offer the opinion that he's offering right this second.

THE COURT: Mr. Boies?

MR. DINTZER: And if I may have voir, I'd be happy to do that in this context.

THE COURT: May have what?

MR. DINTZER: Voir on this?

THE COURT: Okay.

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VOIR DIRE EXAMINATION

BY MR. DINTZER:

Q. Sir, did you tell me in your deposition that you haven't done the calculations to know whether access to the PDCF alone would have resolved AIG's liquidity issues in September 2008? You told me that you hadn't done that, that analysis; is that correct?

A. I hadn't gone -- I presume you're reading from my deposition, so yes.

MR. DINTZER: Okay.

And that's the exact analysis that he's offering right now, Your Honor, so we'd ask the Court to -- we object and we ask the Court not to permit him to give that analysis.

THE COURT: What's the date of that deposition?

MR. DINTZER: June 3, 2014.

THE COURT: And you're reading from where?

MR. DINTZER: I'm reading from -- and I can -- if Your Honor would like, we could provide it, but this was obviously done on the fly.

But I'm reading from page 123, and I'll read the full question:

"You haven't done the calculations to know whether access to the PDCF alone would have resolved AIG's liquidity issues in September 2008; is that correct?

"ANSWER: That's what I just said. I described the PDCF, my calculations showed that the PDCF would -- access to a facility like that would have provided significant amounts of liquidity to AIG such that the path that it was on would have been meaningfully changed."

But that's different from and that -- he said, "That's what I just said" when I asked him he didn't do the analysis that he's just about -- that he's in the process of offering.

THE COURT: Mr. Boies.

MR. BOIES: I think that's what he just said here, too. I've looked back at the live notes.

And the question is: "If AIG had had access to the PDCF or a similar facility in early September of 2008, could that have prevented the need for the RCF?"

His answer is (as read): "Well, if we remember back to our discussion about the liquidity shocked AIG on Monday, September 15, much of that came from two sources. One was because of AIG's downgrade, and the second was because of the securities lending, kind of the run on AIG's short-term funding, which included securities lending, and so on.

"If AIG had backstop liquidity early in September, the rating agencies wouldn't have had to be concerned about AIG's liquidity. That's what ultimately led them to downgrade AIG on Friday, that that was one of their -- that became one of their primary concerns."

I think he said exactly in substance what he said at his deposition. He wasn't saying that access to the PDCF alone would have cured the issue. And in fact, if we go to the next couple of charts, I think -- I think he will explain what combination of circumstances would have been required.

MR. DINTZER: If I may be heard, Your Honor.

It was Mr. Boies' question, which was (as read): "If AIG had access to the PDCF or a similar facility in early September of 2008, could that have prevented the need for the RCF?"

That's exactly in the deposition what he said he didn't do, and so that's what prompted the objection, Your Honor.

MR. BOIES: But the objection has to come, Your Honor, to the answer, not to my question. I mean, he could have objected to my question, but once he answers it, the issue is whether his answer is consistent with his deposition and his report.

And the Court has heard what --

THE COURT: Again, I think this is a close call, but in this instance I'm going to overrule the objection.

MR. DINTZER: Thank you, Your Honor.

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DIRECT EXAMINATION (resumed)

BY MR. BOIES:

Q. On PTX 5355, do you outline the liquidity that AIG could have obtained if it had had access to the PDCF?

A. Yes.

So on PTX 5355, I've extended the analysis to examine the eligible assets of the parent, identified what the liquidity available to the parent was, which was $12.6 billion. I've added that to the excess liquidity available to the insurance subsidiaries, which, you know -- and "excess liquidity" there refers to in excess of the securities borrowing needs of $58.5 billion, so the total liquidity available to the parent and subsidiaries through PDCF borrowing or like, you know, similar type of borrowing was on the order of $71 billion.

Q. And just to be clear, when you say "excess liquidity available to insurance subsidiaries," if you look back on Plaintiffs' Trial Exhibit 5354, are you talking about the difference between the red line and the blue line?

A. Yes. Exactly.

So, you know, the blue line is the loan that could be -- the collateralized loan that could be obtained from something like the PDCF, and then the red line is the amount that's owed to the securities lending counterparties.

Q. Now, in addition to the PDCF, were you aware of other sources of liquidity that AIG could have had access to if it had access to the PDCF?

A. Well, I think the question relates to -- obviously, there was a lot of liquidity in the insurance companies, and the question is whether the regulators would allow that liquidity to be upstream to the parent.

And under what's, you know, called the Paterson plan, the New York insurance commissioner was willing to allow $20 billion of the liquidity in the subsidiaries could be upstream to the parent, so if you add that up with the liquidity that we -- that I mentioned earlier, the $12.6 billion that could be applied through -- could be received through a PDCF-like facility, and combine that with the Paterson plan, that would have provided on the order of $30 billion to the parent.

Q. Did you analyze or investigate the extent to which, if AIG had had access to the $30 billion that you've just identified, 12.6 from the PDCF and 30 from the -- and 20 from the Paterson plan, as well as having the securities lending problem solved at the insurance subsidiary level, that AIG would have then have been in a position to access private sources of capital?

A. I think at that point in time it's -- I mean, it's difficult to really answer that, that hypo- -- you know, that hypothetical.

You know, it certainly looked to be the case over that weekend that private sources were available if there was going to be government participation, and so what we've been talking about is government participation to unlock a bunch of the liquidity at AIG.

So certainly it's consistent with, you know, the evidence that I've seen, but to be able to definitively say absolutely this would, you know, have solved all of the problems, I think it's very hard to, you know, have that level of certainty. The evidence I think points in that direction.

Q. Let me ask you to look next at Plaintiffs' Trial Exhibit 5356.

Is this a chart that you prepared?

A. Yes, it is.

Q. And what does it show?

A. Well, this contrasts during the two-week period at the end of September the type of assistance that AIG received, which were the demand notes and the RCF, and it compares that to the type of assistance that Morgan Stanley received, which were primarily the PDCF and the TSLF.

And I've compared the amount that was utilized at three different points in September, so September 16, September 22 and September 29. And if we look at the two colored columns, you can see on September 16, AIG had borrowed $14 billion through the demand notes, Morgan Stanley had borrowed $16.5 billion through the PDCF and the TSLF.

Now, obviously the interest rates on those are very different. One is 12 percent on the demand notes. The other is between 2.75 and 3 percent.

On September 22, which is Monday, a week after the Lehman failure, AIG has borrowed at that point $37 billion, and Morgan Stanley has borrowed $60 billion. And this is the day that Morgan Stanley was announce -- you know, the day -- well, the business day after Morgan Stanley had been announced to be a bank holding company and additional credit had been extended to its foreign subsidiaries.

And then on September 29, which is the end of the month, AIG has borrowed $55 billion, now through the RCF, and Morgan Stanley has borrowed almost a hundred billion dollars, 97.3 specifically. And contrast all of the terms of the two -- you know, the types of loans that the two institutions were getting and see, you know, a dramatic difference.

AIG paid a 2 percent commitment fee. Morgan Stanley paid nothing.

AIG paid 12 percent interest rate. Morgan Stanley was paying, you know, between 2.25 and 3 percent.

AIG had to pay an 8.5 percent undrawn amount fee, so even money it didn't use it had to pay for. Morgan Stanley didn't.

AIG had to give up 80 percent of the equity in its company, and Morgan Stanley didn't.

The RCF had a -- was -- was capped at $85 billion, which Morgan Stanley didn't have.

And then finally, you know, the haircuts on the collateral were vastly different with AIG being haircut 25 percent and Morgan Stanley looking at a haircut on its collateral of between 6 and 10 percent.

Q. Let me follow up on some of the things that you said about the interest rate, and in that connection let me ask you to look at Plaintiffs' Trial Exhibit 5358.

Is this a chart that you prepared?

A. Yes, it is.

Q. And what does this chart demonstrate?

A. Well, this shows -- it's a summary of the terms of the RCF, so I won't go through that.

But at the bottom of the chart, it shows how the terms of the RCF were I think high on just an absolute basis. And by that I mean comparing it to, for instance, what AIG raised on a secure -- unsecured basis in August 2008. At that point, less than a month earlier, and it paid interest of 8.25.

On the RCF, the orange line here shows that the interest rate is 13 percent when you include half of the commitment fee, so it's a two-year loan, so if I amortize the commitment fee over that two-year period to get to 13 percent.

And then once you include the amount on the undrawn amounts, the effective interest rate goes up to 15 percent, so I've included that 8.5 percent that's paid on the undrawn amount, you know, under the assumption that only three-quarters of the facility is used.

So if you, you know, apply 8.5 percent to about $20 billion, that undrawn amount, and add it to -- as an interest fee to the drawn amount, the total effective rate on the RCF is up towards 15 percent.

Q. Did you compare the interest rate charged AIG on the RCF with interest rates that the Federal Reserve charged other 13(3) borrowers?

A. Yes, I did.
Q. And did you prepare an exhibit on that?
A. I did. The next exhibit, PTX 5359, presents that comparison.
Q. And what does PTX 5359 show?
A. Well, this is the interest rates that were charged by the government on a variety of different 13(3) facilities.
So on the far right, I have presented the two interest rates that I had calculated in the previous slide and then compared it to a variety of other interest rates.
So the primary credit rate, for instance, is 2.3 percent, whereas the secondary credit rate is 50 basis points higher at 2.8 percent. The term structured lending facility was charging 3 percent. The Primary Dealer Credit Facility was charging 2.3 percent. Maiden Lane was 2.5 percent. And then the programs that were put in place for Citigroup and B of A were both close to 5 percent, 4.9 percent.
Q. And did you make an analysis as a matter of economic theory as to what the appropriate rate was for a lender of last resort to charge in a financial crisis?
A. Well, in a financial crisis, I mean, we've heard, you know, plenty of testimony about, you know, how the --

you know, Bagehot recommended -- and that guidance has been used universally -- to charge a penalty rate that's slightly above the normal rate and the normal rate being what would predominate in a normal market, so using that, you know, you know, trying to get the market back to what normal circumstances would look like.

Q. Let me ask you to look at Plaintiffs' Trial Exhibit 5357.

And is this a document that you prepared?

A. Yes, it is.

Q. And you have cited at the top a portion of Chairman Bernanke's testimony where he agrees that "a penalty rate is an interest rate that is slightly higher than the interest rate that would be charged under normal circumstances."

Do you see that?

A. I do, yes. That's exactly what I was referring to, you know, conceptually that we've heard stated at the trial. And you know, obviously, as we can read, Mr. Geithner provides a similar view, as did Ms. Mosser.

Q. Now, there's also been some discussion about the extent to which, if any, interest rates are related to the quality of the collateral.

Did you examine the extent to which the primary credit rate and the PDCF credit rate was or was not related to the quality of the collateral that was posted for PDCF borrowings?

A. Well, crudely I presented, you know, a graph of the rate that was charged on the PDCF and demonstrated how, when the collateral quality changed, the interest rate didn't change. It continued to actually decline.

Q. Is that PTX 5360?

A. Yes, it is.

So as I was just saying, you can see, when the type of collateral that was acceptable at the PDCF expanded on September 14, there wasn't a coincident rise in the interest rate but, rather, interest rates kept declining over time.

Q. You also discussed the different haircut that was given to RCF collateral.

A. Yes.

Q. Do you recall that?

A. Yes.

Q. And did you prepare an analysis that compared the RCF collateral haircut with other collateral haircuts applied with respect to the PDCF?

A. I did.

I was about to note the -- with regards to PTX 5360, haircuts did rise on poorer-quality collateral on September 14, so as the range of acceptable collateral changed, the level of haircut would change with the different types of collateral, so you'd only be able -- you'd be able to borrow less for, you know, a given dollar of collateral.

Q. Did the haircuts that were required for PDCF collateral ever equal the 25 percent haircut that RCF collateral was subjected to?

A. No.

In PTX 5361, this is a chart that I prepared that summarizes the types of haircuts that were being utilized during the financial crisis. And this is a graph that summarizes the collateral rates that were used for the Primary Dealer Credit Facility on September 22.

So you can see for the RCF the haircut was 25 percent, and as we go from left to right, for equities in the PDCF the haircut was 6 percent, for non-investment grade corporate bonds it was 6 percent, non-investment grade mortgage-backed securities it was 9 percent, or non-investment grade CDOs it was 12 percent.

And then for Lehman, when it was in bankruptcy, the haircut that was on average used was 16 percent.

And then the maximum amount that was applied to Countrywide was 17 percent.

THE COURT: Mr. Boies, shall we take a lunch break now?

MR. BOIES: Yes, Your Honor.

THE COURT: Let's reconvene at 1:45.

(Whereupon, at 12:46 p.m., a lunch recess was taken.)

A F T E R N O O N   S E S S I O N

(1:50 p.m.)

THE COURT: You may continue, Mr. Boies.

MR. BOIES: Thank you, Your Honor.

BY MR. BOIES:

Q. Before continuing this afternoon, Dr. Cragg, I'd like to just go back to two items that came up this morning.

First, you'll recall that counsel for the United States referred to your deposition?

A. Yes, I do.

Q. He read a portion?

I'd like to hand you the pages immediately before and after the portion that counsel read.

A. Thank you.

Q. And counsel read starting on page 123 line 3 down through I believe line 13. Do you generally recall that?

A. Yes.

Q. I'd like to go back to the original question and answer that starts on page 121 line 10.

A. Okay.

Q. "QUESTION (as read): If the Fed had given AIG access to the PDCF in September 2008, is it your opinion that that alone would have been enough so that AIG would not have needed to turn to the Fed for other assistance?

"ANSWER: Well, I think it's very hard to know whether to make that prediction.

"QUESTION: And you don't in -- "

And then there's an interjection to allow you to finish your answer, and you continue, "There is an appendix in both my direct report and my rebuttal report where I explore how much liquidity was available through the PDCF or PDCF-like facility with rules that were similar.

"I identify how it could have resolved the immediate needs related to the securities lending run, as well as described how it could have happened with the CDS collateral calls.

"The issue in making the full prediction that you're looking for is that it's very difficult to say how would the market have then reacted.

"So, for instance -- as well as other regulators. As an example, Commissioner Dinallo had already expressed, the New York insurance commissioner, the willingness of that regulator to upstream $20 billion of liquidity to the parent company.

"So there are many different scenarios that could have played out with that access, and I haven't calculated whether that alone would have resolved the issues at the time, but it certainly, the calculations I have done show that it would have had a significant impact.

"QUESTION: You haven't done the calculations to know whether access to the PDCF alone would have resolved AIG's liquidity issues in September 2008; is that correct?

"ANSWER: That's what I just said. I described that the PDCF, my calculations showed that the PDCF would -- access to a facility like that would have provided significant amounts of liquidity to AIG such that the path that it was on would have meaningfully changed."

Do you see that?

A. Yes, I do.

Q. And is that consistent with your views today?

A. Yes.

Q. And can you explain what you meant by the path that AIG was on would have meaningfully changed if it had had access to the PDCF?

A. Well, the PDCF or something like that would have created liquidity for AIG in the short term. And ultimately the run that was affecting AIG's securities lending business and its commercial paper lines were affected by the concern about AIG's overall liquidity.

So one of its central problems that week was that counterparties were pulling back, just as they were across a variety of other institutions but in particular with AIG, but it had nowhere to use the collateral that it had to create liquidity, and so if it could have, then a variety of other things are likely to have changed, including potentially, you know, the views of the regulator towards AIG, you know, the views of private parties towards AIG, you know.

So there's a lot of things that could have played itself out quite differently if that access was available.

Q. Now, I asked you this morning whether you had a view as to what AIG's access to private capital raises would have been if they had access to PDCF.

In addition to access to private capital raises, were there other alternatives that AIG had to raise liquidity?

A. Well, we've heard a variety of pieces of testimony about alternative sources of funding that were being explored over that period of time, whether it be through, you know, the witness from Blackstone as well as others who described access to sovereign wealth funds, for instance.

So there was certainly interest at the time, but of course, as we know, you know, the circumstances just didn't materialize in a way that those private parties could come forward.

Q. Thank you.

Now, let me direct your attention to another subject that I started out with this morning, but I used the wrong exhibits.

Do you recall I asked you about the PDCF and whether there was a commitment at the time it was developed and extended to keep it in effect for some period of time?

A. Yes, I do.

Q. And I showed you some exhibits that we had not included on our witness list.

Let me ask you to look first at Defendant's Exhibit 933 and Plaintiffs' Trial Exhibit 1202.

A. So which is the defendant's exhibit?

Q. It's Defendant's Exhibit 933, and it's Plaintiffs' Trial Exhibit 2012, and I don't think you've got them in your book.

THE COURT: He's handing them out separately.

THE WITNESS: Oh, okay.

THE COURT: So you'll have them in just a moment.

THE WITNESS: Thank you for rescuing me.

(Pause in the proceedings.)

BY MR. BOIES:

Q. Now, first let me ask you to look at Plaintiffs' Trial Exhibit 1202, which is a Federal Reserve press release dated March 16, 2008, which I would offer.

MR. DINTZER: No objection, Your Honor.

THE COURT: Plaintiffs' Trial Exhibit 1202 is admitted.

(Plaintiff's Exhibit Number 1202 was admitted into evidence.)

BY MR. BOIES:

Q. And do you see in the second paragraph where it says "the Federal Reserve Board voted unanimously to authorize the Federal Reserve Bank of New York to create a lending facility to improve the ability of primary dealers to provide financing to participants in securitization markets. This facility will be available for business on Monday, March 17. It will be in place for at least six months and may be extended as conditions warrant"?

Do you see that?

A. Yes, I do.

Q. And what significance, if any, does that have to your analysis as to whether the PDCF was simply an overnight facility?

A. Well, it's -- obviously it's created for a six-month period with the potential for it to continue. I think the question as to whether it's effectively more than an overnight facility relates to the incentives of the parties to use the facility and how they -- what the economic forces at play with regards to the facility's use.

Given that it's, you know, a backstop liquidity provision with the Federal Reserve acting in unusual and exigent circumstances, taking collateral from solvent institutions, you know, presumably given that policy motivation, it will be in place until those circumstances change.

Q. And as you under- --

A. And that could be through, you know, rolling it, you know, night by night or extending the whole facility again for a longer period of time.

Q. And as you understood it, during the time that the facility was available from the Federal Reserve, were participants permitted to simply roll their borrowings night by night or day by day?

A. That's my understanding.

Q. Let me ask you to look now at Defendant's Exhibit 933, which I would also offer.

MR. DINTZER: No objection, Your Honor.

THE COURT: Defendant's Exhibit 933 is admitted.

(Defendant's Exhibit Number 933 was admitted into evidence.)

BY MR. BOIES:

Q. And this is a release from the Federal Reserve Bank of New York, dated September 15, 2008.

Do you see that?

A. Yes.

Q. And if you go to page 2 of the exhibit, at the very end do you see the heading "How long will the PDCF be in operation?" Do you see that?

A. Yes, I do.

Q. And the answer that the Federal Reserve gives is: "The PDCF will remain available to primary dealers until January 30, 2009 or longer if conditions warrant."

Do you see that?

A. Yes. That's similar to the way I answered your earlier question.

Q. And one more cleanup item, would you look at Plaintiffs' Trial Exhibit 5352.

And this compares the kind of collateral that was being used in late March of 2008 with that which was being used in late September 2008 for the PDCF; correct?

A. Yes.

Q. And you have a bar chart for September 29, 2008 that totals about $170 billion; is that correct?

A. Yes.

Q. And then you show in different colors how much was accounted for by investment grade and government debt securities, 29 percent, unrated debt securities 17 percent, non-investment grade debt securities 21 -- 12 percent, nonsecuritized loans 3 percent, and equity 38 percent.

Do you see that?

A. Yes, I do.

Q. And then you also have dollar amounts associated with each of those segments?

A. Yes.

Q. And is the dollar amount for unrated debt securities that is printed here accurate?

A. It looks like it's -- actually it's small, so that -- that percentage there being two billion wouldn't make sense. It's I think on the order of 29 billion or 30 billion.

Q. And you can tell that amount by looking at how much of the left-hand axis is occupied; is that correct?

A. Exactly.

MR. BOIES: With the Court's permission, we will substitute a corrected version of this.

THE COURT: Sure, that will be fine.

BY MR. BOIES:

Q. Now let me turn back to where we were, and you may recall that we were looking at Plaintiffs' Trial Exhibit 5361, which compared the haircuts on various kinds of collateral under various Federal Reserve credit facilities. Do you recall that?

A. Yes.

Q. Let me turn now to what happened after the revolving credit facility was put into effect.

First, as you indicated on Plaintiffs' Trial Exhibit 5362, there was both a November 2008 restructuring and a restructuring that was announced in March 2009 and actually went into effect in April of 2009; correct?

A. That's right, yes.

Q. And would you describe what Plaintiffs' Trial Exhibit 5362 does.

A. So 5362 describes how the terms of the RCF changed.

And I think to put it in context, it's important to recognize that, in retrospect, the terms have been described as onerous. And by "onerous" I think people like Mr. Paulson or Mr. Liddy, who I think both used that term, looked at the interest rates, looked at the requirements of the loan and saw that it wasn't sustainable, that it wasn't comparable and it wasn't sustainable, and so for this to be a lasting solution for AIG, something would have to be done because, as the rating agencies noted right before, you know, both of these restructurings, the capital structure and the cash flow that was gobbled up by the RCF put the company at risk in terms of the way they viewed whether it had a sustainable cash structure.

So the November restructuring was a first move to deal with the structure of the RCF, and then the March restructuring was again another restructuring to put the capital structure into a sustainable one so that AIG could meet its objectives and the government's objectives from a long-run perspective.

Q. And did the November restructuring include what has been referred to as Maiden Lane II and Maiden Lane III?

A. Yes.

So both of the Maiden Lane special-purpose vehicles were created as part of the November restructuring.

Q. Now, let me turn to Maiden Lane III first and direct your attention to Plaintiffs' Trial Exhibit 5366.

Is this a document that you prepared?

A. Yes, it is.

Q. And what does this show about Maiden Lane III?

A. Well, it summarizes that Maiden Lane III was an asset swap and that provided tremendous liquidity to AIG's counterparties.

So if you think about both the counterparties and AIG's position at this point, AIG had posted collateral to the counterparties, as we talked earlier. That collateral was well in excess of, you know, the expected losses related to those CDOs.

With the Maiden Lane III structure, the special-purpose vehicle was fully funded with the collateral posted by AIG and additional equity, as well as a loan from the Federal Reserve Bank of New York.

So AIG put up a total of $37.5 billion. The Federal Reserve Bank of New York put up $24.3 billion. And they used that to purchase the CDOs from the counterparties.

So the CDOs -- so the counterparties received additional liquidity against these illiquid securities.

Q. Let me stop you there for a minute.

There was notional value or par value of $62.1 billion; correct?

A. Yes.

Q. And AIG had already posted $37.5 billion?

A. 32.5.

Q. $32.5 billion.
And AIG was putting in another $5 billion; right?
A. Yes.
Q. And the difference between this total of $37.5 billion and the notional value was what the Federal Reserve Bank loaned; correct?
A. Exactly.
So the difference between those two is, you know, about, what, 24.3 billion.
Q. Now, if the Federal Reserve Bank had guaranteed these CDSs, the maximum exposure would have been the amount that the Federal Reserve Bank loaned; is that correct?
A. Yes. If that's how the guarantee was structured.
Q. Now, if the Federal Reserve Bank had simply guaranteed the notional value as opposed to constructing it -- structuring it the way ML III was structured, what would the effect on AIG have been?
A. You mean where the government steps in to the -- basically novates the contract between the AIG parent as the guarantor on AIGFP's CDS. If the government had stepped in to take that position, there wouldn't have been a reason to post collateral since there's no credit risk with the federal government, so that would have had the impact of releasing the collateral, which would have

been returned presumably to AIG then.

Q. Let me ask you to look at Plaintiffs' Trial Exhibit 5367.

Is that a document you prepared?

A. Yes, it is.

Q. And would you explain what this shows.

A. Well, this is a summary chart of each of AIG's counterparties ordered by -- from largest to smallest, its counterparties on the CDS on CDO portfolio.

For each counterparty, the orange bar is the par value, and then the blue bar is the collateral payment that AIG had already made, and then the dark -- the light blue bar on top of that is the additional payment that the counterparties received from Maiden Lane III, which ultimately of course for each of them adds up to the par value of the CDOs that they held.

Q. Now, with respect to the counterparties, if the Federal Reserve Bank of New York had guaranteed the CDOs instead of doing Maiden Lane III, what would have happened to the light blue line, the additional payments to the counterparties?

A. Well, that counterfactually wouldn't be made.

Q. So that would not have been made.

A. Right.

Q. And that total amount that was paid to the

counterparties was --
A. Was 24.3 billion.
Q. Or plus -- plus the five?
A. Yes, that's right.
Q. So that was about --
A. 29.3.
Q. -- $29.3 billion that would not have been paid.
A. Yes.
Q. In addition to that, what would have happened to the collateral payments that had already been posted?
A. Well, as we were just discussing, because there would be no need for covering the credit risk associated with these CDS contracts, given who the counterparty would then be -- it would be the federal government backing these contracts -- that would have released all of the collateral that AIG had posted.
Q. So that the $32 billion it already posted would have come back and the counterparties would have lost $61 billion of liquidity; is that correct?
A. Yes.
Q. Let me turn to Maiden Lane II.
And in that connection, did you prepare a chart that showed how the profits from Maiden Lane II were divided?
A. Yes, I did. That's PTX 5364.

Q. And what does that show?
A. Well, this shows that on the RMBS portfolio that AIG's security lending business was invested in, so it's an illiquid portfolio which was swapped out to Maiden Lane II, that the profits from this exercise were split five-sixths for the Federal Reserve Bank of New York and one-sixth to AIG, that this graph summarizes how the actual residual profits from Maiden Lane II were allocated between the two parties.
Q. So that the Federal Reserve Bank of New York received about $2,300,000,000 of profits and AIG received about $500 million of profits?
A. Correct.
Q. And with respect to Maiden Lane III, going back to Plaintiffs' Trial Exhibit 5366?
A. Yes.
Q. How were the Maiden Lane III profits divided between the Federal Reserve and AIG?
A. That was divided where -- with a one-third/two-thirds split as I recall.
Q. Let me ask you to look next at Plaintiffs' Trial Exhibit 5365.
Is this a document you prepared?
A. Yes, it is.
Q. And what does this document show?

A. Well, this is a summary of the components of the Maiden Lane III portfolio securities that were listed in the DOJ settlements and then likewise for the Maiden Lane II portfolio securities, those that were listed in the DOJ settlements, so it's a summary of securities that were implicated in the various prosecutions that we looked at earlier.

Q. And with respect to the Maiden Lane III portfolio securities, which is a total of $61 billion of notional value, what percentage of those securities were listed in DOJ settlements?

A. So 72 percent or a notional amount of 45 billion.

Q. And as part of your analysis, did you investigate whether anything was done in connection with Maiden Lane III that affected AIG's ability to seek recovery for any claims that it might have against counterparties?

A. Well, my understanding is that in creating Maiden Lane III, a series of releases were entered into --

MR. DINTZER: Objection, Your Honor. This calls for a legal conclusion. I mean, whatever he's going to say after "a series of releases were entered into," it seems like that would be an interpretation of whatever those releases are. And I understand he's looked into all this stuff, but I don't understand what the economics behind whatever he's going to say would be.

THE COURT: Mr. Boies?

MR. BOIES: Your Honor, a number of nonlawyers have talked about the releases in this trial. And all he is I think going to talk about is his understanding as an economist of what happens when you have potential claims and then you release them. I think it's pretty straightforward.

THE COURT: I'm going to overrule the objection, but certainly you can cross-examine when the time comes.

MR. DINTZER: Thank you, Your Honor.

THE COURT: Sure.

BY MR. BOIES:

Q. I think you may have actually either completed or almost completed your answer.

I had asked whether as part of your analysis you had investigated whether anything was done in connection with Maiden Lane III that affected AIG's ability to seek recovery for any claims that it might have against counterparties. Do you recall that?

A. Yes. And I answered that AIG entered into a series of releases that precluded it from recoveries of, you know -- of litigations.

Q. Let me ask you to return to the question of a guarantee, which I raised in connection with Maiden Lane III. Do you recall that?

A. Yes.

Q. Did the Federal Reserve participate in providing any guarantees to companies other than AIG?

A. Yes, they did. If you think back to, you know, earlier this after- -- well, at some point today I talked about Treasury getting the ability to guarantee the portfolios of the GSEs, so there was a recognition that the -- you know, the market -- you know, to create more certainty in the market, ensuring that there was an actual guarantee behind those securities was important.

And then the concept of guarantees was again used in the week of the Lehman failure as a way of stemming the outflow from the money market mutual funds.

As well, the FDIC used guarantees as a way of keeping an outflow from the institutions that it oversaw.

And then as well, there were guarantees created for Bank of America and Citibank later that -- later in 2008.

Q. And did the Federal Reserve participate in the Bank of America and Citibank guarantees?

A. Yes, it did.

Q. Did you prepare a demonstrative that relates to

the Citibank guarantee?
A. Yes, I did.
Q. Which is that?
A. It's PTX 5368.
Q. And what does that document show?
A. Well, this describes in summary terms the guarantee that the government provided to Citigroup on a portfolio of $301 billion. It was designed to limit the losses on this portfolio so that investors and others would have confidence or more confidence in Citigroup.
Q. Now, in addition to that guarantee, did Citigroup receive other financial and liquidity assistance from the government?
A. Yes. They received, you know, a wide range of assistance from the government.
Q. And did you prepare a demonstrative that summarizes some of that?
A. Yes.
The next exhibit here, PTX 5369, provides a guarantee of -- not a guarantee of -- a summary of additional financial support that Citigroup got from the government. These include FHLB advances of 89 billion, TSLF funding of 30 billion, PDCF funding of 22 billion, TAF funding of 16 billion, and ST OMO funding of 3 billion.

Q. Let me ask you to look at Plaintiffs' Trial Exhibit 5370.

Is this a document you prepared?

A. Yes, it is.

Q. And I think we've seen something very similar to this earlier, so I don't want to spend a lot of time on it, but is this your calculation of the outstanding balance of the AIG revolving credit facility?

A. Yes.

This document demonstrates the impact of the November and March restructurings on the amount outstanding on the RCF facility, so we can see in November one restructuring have a direct impact on the balance and then the March restructuring have another impact, which actually was implemented in December.

Q. Now, there's been testimony both yesterday and today that you've given about the sale and potential sale of assets by AIG. Do you recall that?

A. Yes.

Q. Did you prepare a chart that gave examples of certain sales of assets by AIG?

A. Yes.

The next slide here, PTX 5371, is a summary of assets sold by AIG. It's obviously not the universe, but it's a collection of some of the more -- a variety of the larger sales that they engaged in.

Q. And at the time of the RCF in September of 2008, I think you said that there was indications of interest on various parties of buying certain AIG assets; is that correct?

A. Yes. In general, AIG owned some of the most attractive insurance assets in the world.

There was a -- there -- their companies in south Asia, Southeast Asia, which were actually where the company started in Singapore, AIA and ALICO were very attractive assets given how long AIG had been in that region and some of the special licenses that they gave them access to gave them unique access to China, as well as specialized insurance programs for machinery and other types of heavy industry, which were, again, another very special asset.

Q. And did you prepare a demonstrative that relates to some of the evidence that you relied on in connection with the interest that you testified about before of the Chinese in acquiring certain AIG assets?

A. Yes.

PTX 5372 are some citations to the record and other documents about the unique assets that AIG had in China and Southeast Asia.

So the other day, we heard Mr. Studzinski speak of conversations he had about AIA being worth $50 billion.

Again, Secretary Paulson spoke about AIG being an icon in China and how it was a gold standard in excellence.

So there's a variety of places where people have recognized in this record as well as, you know, outside of the record about the valuable assets that AIG held in Asia as well as those that it holds in the United States.

Q. Let me turn to another subject.

And do you have an understanding one way or the other as to whether or not the terms of the Federal Reserve credit as approved by the Board of Governors on September 16, 2008 were different in any way from the final terms that were included in the RCF dated September 22, 2008?

A. Yes. I've listened to the testimony and heard, done my own investigation of the record to see, you know, the extent to which the terms changed from the initial terms that were approved to those that were finally signed as part of the RCF.

Q. And did you prepare a demonstrative exhibit related to that?

A. I did.

Q. And what is that?

A. That's the exhibit labeled PTX 5373.
Q. Let me ask you to look at that.
And you identify four terms here; is that correct?
A. Yes.
Q. And I'd like to go through each of those one by one.
A. Okay.
Q. First is the form of equity, and can you explain what the form was that was approved by the Board of Governors on September 16 and what the form was in the September 22 RCF.
A. So the Board of Governors approved the use of warrants and that the final terms that were effective in the RCF were voting convertible preferred shares, so...
Q. Does that have a significance as an economic matter?
A. There are several features of that which are important. One is about voting control, and another is related to the cost of exercising or -- or so I should say the value of the equity is substantially different.
Q. Can you explain that.
A. Well, with warrants, given the par value of AIG's shares being 2.50, it would have required a minimum exercise price of $30 billion to utilize the warrants,

and only with that expenditure would the government then have voting rights.

With the voting convertible preferred shares, there was no exercise price, and it provided immediate voting control on all issues except for charter amendments, which obviously require shareholder approval.

Q. As you understand it, what, if anything, was contemplated, at the time the Board of Governors approved the terms of the credit facility, with respect to whether AIG's shareholder approval would be required for the issuance of stock?

MR. DINTZER: Objection, Your Honor. Outside the scope of his expertise.

It's not clear how his economic expertise addresses what the Board of Governors contemplated and how that would relate to any of the opinions that he's offering.

THE COURT: Mr. Boies?

MR. BOIES: I think it's a predicate, Your Honor, for his economic testimony.

With respect to this issue, I can ask the witness a hypothetical and I -- if the Court would prefer, I can proceed that way, because what I need is not for him to tell the Court that shareholder approval was required.

That's written in black and white. What I need him to say is what the economic significance of that is, so if the Court prefers, I'll proceed hypothetically.

THE COURT: I think I would prefer that, so he's going to ask a different question.

MR. DINTZER: Thank you, Your Honor.

BY MR. BOIES:

Q. If it were the case that the terms of the credit facility approved by the Board of Governors required shareholder approval before stock could be issued and the final terms of the credit facility provided that the voting preferred shares would be issued without further shareholder approval, would that change have economic significance?

A. Yes.

Q. Why?

A. Well, it's a change in the degree of control that the existing shareholders would have relative to the government, and so that's a -- creates a cascade of impacts from that change in control.

Q. And can you give some examples of those impacts.

A. Well, it could be about, you know, decisions about board members, management, financing. You know, a wide range of things could be impacted by that.

Q. Let me turn to another subject or actually a

series of related subjects.
You are aware that in this case certain witnesses have explained the government's acquisition of equity in AIG in a variety of ways.
A. Yes. That was a central area of examination for -- in my opening report.
Q. And I'd like to take you through some of those explanations and have you explain to the Court what, if anything, you can say as an economist about the rationality of those explanations.
A. Okay.
Q. First, there may have been a suggestion that the terms of the AIG credit facility were necessary or appropriate to punish shareholders for their "mistakes."
A. Yes.
Q. Have you investigated whether that potential justification could be justified on an economic basis?
A. Well, I tried to formulate it as an economic question and I've, you know, investigated that, yes.
Q. And have you prepared an exhibit that relates to that?
A. I have. Let me just find it.
It's PTX 5375.
Q. And what does this exhibit show?
A. Well, it shows, first off, one of the people who

was making -- providing this explanation that it was intended to be, you know, punitive. And as part of something being a punishment as a rational -- economically rational justification, there would have to be a reason to punish somebody for it to be, you know, kind of a rational thing to have done, and that would require doing an investigation as to why was it that AIG was in the position that it was.

And as I've shown here, neither that investigation was done nor, had it been done, would there be, you know, ultimately a reason for punishing AIG.

Q. Now, did you also investigate whether there was an economically rational basis for justifying the terms of the AIG credit facility relating to equity on "moral hazard" terms?

A. Yes. I've -- I have. I have.

Q. And did you prepare a chart on that?

A. I did.

5376, PTX 5376, is the chart that I've prepared that summarizes my observations and analysis around this, around this question.

Q. And what is your analysis of this question?

A. Well, there are a variety of observations I've made about moral hazard, you know, the first being that under Bagehot's dictum, under, you know, the guidance that's directed at central banks for over a century, there are really two ways that moral hazard is dealt with during a crisis period. One is by charging a penalty rate. And then the other is by understanding that the time to provide corrective action is either before or after, and so that was an important part of Bagehot's dictum.

In addition, when you think about moral hazard, it's an area where, as a policymaker, you're thinking about the party having done something that you -- you provided some framework which then they took advantage of in some way. They deviated from what was expected of them.

And you know, that's obviously a problem in all kinds of different areas, that kind of incentive problem, but to correct for that by taking equity is a -- is I think an odd explanation. And it's odd for a couple of reasons.

One is that you're -- by doing that, you are expecting that other market participants are going to interpret your actions as rational ones, and so that requires that you have acted rationally already previously.

And so for this explanation to make sense, it would have to concord with all of the other actions you've done, and there isn't that concordance between the treatment of the primary dealers, AIG and then the treatment of others in the past.

So there are -- you know, for people to be able to infer something about the Federal Reserve that would make sense, there would have to be a consistency of behavior over the period. And as we've seen, that just doesn't exist.

Sorry. I -- so, for instance, the broker-dealers, the primary dealers were treated, you know, incredibly well. They received backstop liquidity support at no charge. Even at the height of the crisis, the very same week that AIG was in crisis, they got special treatment. They were given bank holding status, even though they were basically in the same boat as AIG, except they already had backstop liquidity support.

So it doesn't make sense to then isolate AIG as, you know, requiring some special treatment for either a penalty or moral hazard reason.

The other reason that I don't think this explanation makes sense is that by March of 2008, the government had already announced that they were seeking alternative regulatory regimes, so to draw any inference from the treatment of AIG at the height of the crisis that it was going to affect future behavior some way, it just -- from a policy perspective, everybody knew that the tables were going to have changed and there would be a different regime that was put in place.

Q. Let me turn to another potential explanation that certain people have raised, and that is that the punitive terms of the AIG credit facility were necessary to protect against the risk of the loan.

Do you recall seeing that?

A. Yes.

Q. Did you evaluate whether that justification made any economic sense?

A. I did.

That was a relatively recent explanation that's been forwarded. And again, it's an explanation that I don't think is economically supportable.

And the reason is that, first off, the loan was, you know, fully collateralized, so from a risk perspective, it was on the same footing as many of the other institutions. And in particular, it was collateralized with assets which were better quality than were being pledged in, let's say, to the PDCF.

So that's one reason.

The other is, when you look at the terms that were being charged for the loan, there's no concordance between the credit quality or the -- of this loan versus others that had been entered into by alternative institutions, so there's -- from a credit quality perspective, it's -- it's I think very difficult to -- well, I think it's impossible to justify the terms that way.

Q. Would you look at Plaintiffs' Trial Exhibit 5378.

Is that a document that you prepared?

A. Yes.

Q. And does that set forth some of the evidence from the trial that you considered in connection with the opinion that you've just expressed?

A. Yes.

So, for instance, on the security of the loan, the Federal Reserve had numerous consultants that they hired, Morgan Stanley and Ernst & Young being more noteworthy then in terms of them doing valuations over time. And if you look at the level of the loan versus the value of the collateral that Morgan Stanley and Ernst & Young calculated at any point in time, there was always a very large cushion between the principal amount and the value of the collateral.

And you know, it's not surprising to see that in the, you know, underlying calculations because in numerous places top government officials have talked about the loan being fully secured because that's actually, you know, an important part of extending a 13(3) loan, that it's supposed to be fully secured.

So those are a couple of the observations.

And you can understand why the calculations come out that way because when you look at the assets that were in the AIG subsidiaries, they're some of the best insurance companies in the world, highly rated by A.M. Best and others, with -- in normal circumstances, in a normal market, there would have been plenty of demand for those, those assets.

Q. There's also been suggestion that somehow AIG was different than primary dealers and therefore shouldn't have access to 13(3) liquidity on terms comparable to Morgan Stanley and other dealers.

Did you evaluate that to determine whether that had an economic rationale or was consistent with the economic theory of central banking?

A. Well, first off, you know, in general, Bagehot as well as, you know, various parts of guidance that are provided to the Federal Reserve on how to support the economy overall lead one to -- or lead me to the conclusion at least that you should lend to any and all against adequate collateral, so the reason for that is you're trying to create confidence or recreate confidence. And it doesn't help to create -- you know, in that pursuit by creating, you know, essentially in groups and out groups.

Certainly if you're on the out group, that's not helping create confidence there. It doesn't help with the interaction between those types of institutions. And it doesn't help in the long run, given that it's an incomplete answer to the general problems that were faced at the time.

And in particular, immediately after the creation of the March facilities, various task force -- task forces immediately started analyzing, well, what are alternative definitions, what are more economically rational ways of creating the -- you know, perhaps creating boundaries for participation in government programs.

Ultimately, the Federal Reserve's efforts, as we heard from Ms. Dahlgren the other day, her task force, you know, which was reporting to Mr. Geithner, that got interrupted by the September crisis. The recommendations that came from Treasury were already out in March.

Q. Have you prepared a demonstrative exhibit that summarizes some of the evidence that you relied on from the trial related to this opinion?

A. I have.

Q. And is that Plaintiffs' Trial Exhibit 5379?

A. It is, yes.
Q. And --
A. Yes.
So as we look through the various points that I've made here on 5379, they, you know, in different words, replicate what I was just -- what I was just saying.
Q. And when Mr. Bagehot says that in a panic, central banks "must lend to merchants, to minor bankers, to this man and that man, whenever the security is good," what significance, if any, does that have to your analysis?
A. Well, this is a principle that goes back to the 19th century. It's a principle that has been utilized as a guiding principle. When you look at, you know, the way 13(3) came about and its utilization historically, it reflects this principle.
And so as an economic matter, it's certainly a principle that's been a guiding principle. And there is a very strong economic rationale behind it obviously given that the longevity of this principle.
Q. And I think you said earlier that you had analyzed what the Federal Reserve had done with respect to 13(3) loans back shortly after 13(3) was enacted; is that correct?
A. Yes.

Q. And let me hand up two documents, Plaintiffs' Trial Exhibits 2816 and 2826.

These are both additional Doomsday Book memos, Your Honor, which I would offer.

MR. DINTZER: No objection, Your Honor.

THE COURT: All right. Plaintiffs' Trial Exhibits 2816 and 2826 are admitted.

(Plaintiff's Exhibit Number 2816 was admitted into evidence.)

(Plaintiff's Exhibit Number 2826 was admitted into evidence.)

BY MR. BOIES:

Q. And is Plaintiffs' Trial Exhibit 2816, for example, one of the documents that you relied on to indicate the kinds of 13(3) loans that the Federal Reserve has historically made?

A. Yes. I've seen this document before, and it's an interesting one, given the -- you know, the summary that's provided at the end in table 1.

And then PTX 2826 from -- you know, written by Mr. Hackley, who used to be general counsel at the Board of Governors, you know, I've seen this before.

And there's also another excellent history that Mr. Hackley prepared of the Federal Reserve and the origins of various principles from an economic perspective as to, you know, where they come from and why they're there.

Q. Is that a relatively thick publication, the Hackley thing that you're referring to now (indicating)?

A. No. You might be thinking of Al Meltzer's history of the Federal Reserve, which is like this thick (indicating). Hackley's is about yea thick (indicating).

THE COURT: Could you describe what you just demonstrated with your fingers.

THE WITNESS: So the Hackley is a centimeter, Meltzer's two and a half feet.

THE COURT: That's much better for the record.

THE WITNESS: Sorry.

BY MR. BOIES:

Q. We're going to try to pull out Plaintiffs' Trial Exhibit 742, which is in evidence, and see if this is the document that -- or one of the documents that you're referring to.

While we're doing that --

A. Yeah, it's on the screen here.

Q. Is this the document that you were referring to?

A. Yes. I guess the copy I have is two-sided. I'll bet that's one-sided.

Q. Yes, this is one-sided -- or it's actually

two-sided.
A. Oh.
Q. But Lending Functions of the Federal Reserve Banks: A History?
A. Yes, exactly.
Q. That's what you're referring to.
Another and I think last explanation that has sometimes been given for the requirement that the AIG shareholders surrender 79.9 percent of their equity and voting control is that that was necessary to deprive AIG shareholders of a "windfall."
A. Yes.
Q. Are you familiar with that?
A. I am.
Q. And did you analyze that from an economic standpoint and from the standpoint of a theory of central banking?
A. Yes, I did.
Q. And what did you conclude?
A. Well, the -- you know, the -- one of the core purposes of providing liquidity in emergency situations is to rectify a market failure. And the market failure arises from, you know, fear in the markets that then causes liquidity to dry up. And that has the impact of creating negative externalities for market participants,

so your bad thoughts have an impact on me trying to achieve, you know, raise liquidity for myself.

And that's exactly what happened to AIG. The market circumstances created a, you know, broad-spread panic. They affected AIG by creating a run on it. They affected AIG through creating fire -- you know, through creating marks that impacted the CDS collateral calls in a very artificial manner.

And so these negative externalities were ultimately corrected through the provision of the -- of liquidity to AIG. And I should say they really only partially corrected, because if earlier support had been provided, it's likely that the range of kind of devastating circumstances would have been different.

MR. BOIES: Thank you.

I'm now going to spend a few minutes on sort of housekeeping to go through some documents that I need to get admitted.

First, I would offer Plaintiffs' Demonstrative Exhibits 5300 through 5381 and Plaintiffs' Trial Exhibit 2857-A for the purpose of illustrating the witness' testimony.

MR. DINTZER: We have no objection to them coming in purely as demonstratives, Your Honor.

THE COURT: Yes. Very well.

The demonstrative exhibits, Plaintiffs' Trial Exhibits 5300 through 5381, and 2857-A are admitted as demonstratives.

(Plaintiff's Exhibit Numbers 5300-5381 were admitted into evidence.)

(Plaintiff's Exhibit Number 2857-A was admitted into evidence.)

MR. BOIES: I would also offer Plaintiffs' Trial Exhibit 168.

MR. DINTZER: No objection, Your Honor.

THE COURT: Plaintiffs' Trial Exhibit 168 is admitted.

(Plaintiff's Exhibit Number 168 was admitted into evidence.)

MR. BOIES: I would also offer Plaintiffs' Trial Exhibit 457.

MR. DINTZER: Your Honor, just one caveat on the demonstratives. We did not object to them coming in and we generally don't. I have not kept a score sheet. I do sense that there's at least one and maybe more that have not been covered with the witness. And to the extent that any were not actually addressed by the witness, then of course they would not be demonstratives because they didn't demonstrate anything that he said, so could we reserve the right to object and pull out any that he did not actually address?

THE COURT: I guess -- I think that would be fine.

MR. BOIES: Your Honor, I have no objection to that.

MR. DINTZER: Thank you.

MR. BOIES: That reminds me that while I'm doing this, I will ask my colleagues to tell me if I've missed a demonstrative exhibit that I should have gone through.

Did we deal with Plaintiffs' Trial Exhibit 457, which I offered?

THE COURT: No, not yet.

MR. DINTZER: Your Honor, is counsel offering this under 703 or is he offering this for admission?

MR. BOIES: I would offer it generally. However, if there's an objection, I would be happy to offer it simply as a part of the evidence that the witness has relied on for the present time and then come back to it later in the case.

MR. DINTZER: We'd ask for that, Your Honor. 703 is fine with us.

THE COURT: Okay. Plaintiffs' Trial Exhibit 457 is admitted under the criteria of Federal Rule of Evidence 703.

(Plaintiff's Exhibit Number 457 was admitted into evidence.)

MR. BOIES: We would next offer Plaintiffs' Trial Exhibit 628.

MR. DINTZER: Your Honor, we have hearsay objections about this. We have no problem with it coming in under 703, but we have hearsay concerns about it, so we object to it coming into evidence.

MR. BOIES: This is a GAO document, Your Honor.

MR. DINTZER: With an expert witness, Your Honor, the only need that he has is that he relied upon it.

THE COURT: I'll admit it under the restrictions of 703, so Plaintiffs' Trial Exhibit 628 is admitted.

(Plaintiff's Exhibit Number 628 was admitted into evidence.)

MR. BOIES: We would offer Plaintiffs' Trial Exhibit 661.

MR. DINTZER: Two comments on this, Your Honor.

The first is, of course, we have concerns as we've expressed about relevance of the materials relating to the Department of Justice's lawsuits regarding any of these cases.

Second, to the extent that the Court wishes to, we think that offering a complaint into evidence is unnecessary and that the proper motion would be that the

Court take judicial notice of it.

So if -- if the Court believes that this is relevant, we would ask the Court, instead of bringing it into evidence as evidence, that it take judicial notice of it.

MR. BOIES: I'll proceed that way, Your Honor, with a motion for judicial notice. I just thought it was easier to do it this way.

THE COURT: Frankly, I think it's easier to do it this way just as a practical matter, so I will admit Plaintiffs' Trial Exhibit 661.

(Plaintiff's Exhibit Number 661 was admitted into evidence.)

MR. BOIES: We would offer Plaintiffs' Trial Exhibit 671 for the limited purpose of illustrating the witness' testimony and what the witness relied on.

I would be prepared to offer it for all purposes as well, but that's -- I don't need it other than for purposes of illustrating the witness' testimony.

MR. DINTZER: No objection for it coming under 703, Your Honor, but we would object to it coming in generally.

THE COURT: Well, this is Mr. Geithner's testimony from this case?

MR. DINTZER: Well, I don't believe so. I believe it's something that was typed up.

MR. BOIES: I believe it's an interview, Your Honor.

THE COURT: Oh, it's an interview? All right.

MR. BOIES: And I think it -- it is something that ought to be admissible, but for my purposes I don't need it for more than what the expert is relying on.

THE COURT: All right.

MR. DINTZER: And I'm being told that it may already be in.

MR. BOIES: Oh.

MR. DINTZER: Our records show that it is in.

THE COURT: We agree with you. It's already admitted.

MR. DINTZER: So I'll withdraw my objection.

MR. BOIES: And I'll withdraw my offer.

Next is, I have -- I have Exhibit 1469, which is called an Excel --

MR. DINTZER: And I don't know if -- Counsel, could you tell us, is that a plaintiffs' or defendant's exhibit?

MR. BOIES: This is Plaintiffs' Trial Exhibit 1469.

MR. DINTZER: I'm sorry. It says "native format" in here.

MR. BOIES: Yes. That is what I was saying.

MR. DINTZER: Oh, I'm sorry.

What exactly is it?

MR. BOIES: This is the securities lending loan balance from the AIG companies, and it was produced to us in what is called native format, which means we don't get a hard copy, we get something that's electronic, and people deal with it with computers and the like.

THE COURT: Who produced it?

MR. BOIES: I believe it was AIG.

It was AIG, Your Honor.

We can have something that is printed out if --

MR. DINTZER: We may not have a copy in the courtroom, Your Honor.

MR. BOIES: While they're finding that, let me go on --

THE COURT: Okay.

MR. BOIES: -- to Plaintiffs' Trial Exhibit 1475, which I'd also ask that it be pulled out, 1475, because it also is a native format document.

MR. DINTZER: Same concern, Your Honor. We don't have that available right now.

(Pause in the proceedings.)

MR. BOIES: I'll hand it up to the Court. This is 1475.

MR. DINTZER: Your Honor, for 1475, we have no objection on 703 that this come in to support the witness' testimony.

THE COURT: All right. Plaintiffs' Trial Exhibit 1475 is admitted for the stated purpose.

(Plaintiff's Exhibit Number 1475 was admitted into evidence.)

MR. BOIES: And next -- and I have now Plaintiffs' Trial Exhibit 1469, which I would offer for the same purposes.

MR. DINTZER: No objection under 703, Your Honor.

THE COURT: All right. Plaintiffs' Trial Exhibit 1469 is admitted for the stated purpose.

(Plaintiff's Exhibit Number 1469 was admitted into evidence.)

MR. BOIES: And I would now offer Plaintiffs' Exhibit 1478. And this is introduced limited to showing what the witness relied on.

MR. DINTZER: No objection under 703, Your Honor.

THE COURT: Plaintiffs' Trial Exhibit 1478 is admitted for the stated purpose.

(Plaintiff's Exhibit Number 1478 was admitted into evidence.)

MR. BOIES: And I would offer Plaintiffs' Trial Exhibit 1513 for the same purpose.

MR. DINTZER: No objection under 703, Your Honor.
THE COURT: Plaintiffs' Trial Exhibit 1513 is admitted for the stated purpose.
(Plaintiff's Exhibit Number 1513 was admitted into evidence.)
MR. BOIES: And I would offer Plaintiffs' Trial Exhibit 2329 without limitation. This is a Federal Reserve Board of Governors government.
MR. DINTZER: No objection, Your Honor.
THE COURT: Plaintiffs' Trial Exhibit 2329 is admitted.
(Plaintiff's Exhibit Number 2329 was admitted into evidence.)
MR. BOIES: I would offer Plaintiffs' Trial Exhibit 2388 for purposes of illustrating what the witness relied on.
MR. DINTZER: No objection under 703, Your Honor.
THE COURT: All right. Plaintiffs' Trial Exhibit 2388 is admitted for the stated purpose.
(Plaintiff's Exhibit Number 2388 was admitted into evidence.)
MR. BOIES: And I would offer Plaintiffs' Trial Exhibit 2485 on the same basis.
MR. DINTZER: No objection under 703, Your Honor.
THE COURT: Plaintiffs' Trial Exhibit 2485 is

admitted for the stated purpose.

(Plaintiff's Exhibit Number 2485 was admitted into evidence.)

MR. BOIES: And I would offer Plaintiffs' Trial Exhibit 2504 on the same basis.

MR. DINTZER: No objection under 703, Your Honor.

THE COURT: Plaintiffs' Trial Exhibit 2504 is admitted for the stated purpose.

(Plaintiff's Exhibit Number 2504 was admitted into evidence.)

MR. BOIES: And I would offer Plaintiffs' Trial Exhibit 2528 for the same purpose.

MR. DINTZER: No objection under 703. We maintain our relevance objection, Your Honor, but other than that, no objection.

THE COURT: Plaintiffs' Trial Exhibit 2528 is admitted for the stated purpose.

(Plaintiff's Exhibit Number 2528 was admitted into evidence.)

MR. BOIES: When I can find a paper copy of Plaintiffs' Trial Exhibit 2539, I will offer that for the same purpose. That is also an Excel spreadsheet we will have to identify.

THE COURT: All right.

MR. BOIES: Actually, I have that.

MR. DINTZER: No objection -- if this has been offered, Your Honor, no objection under 703 for Plaintiffs' Trial Exhibit 2539.

THE COURT: Plaintiffs' Trial Exhibit 2539 is admitted for the stated purpose.

(Plaintiff's Exhibit Number 2539 was admitted into evidence.)

MR. BOIES: I would offer Plaintiffs' Trial Exhibit 2563. This is a Federal Reserve Board of Governors document. This is not being offered for a limited purpose. It's being offered generally.

MR. DINTZER: No objection, Your Honor.

THE COURT: Plaintiffs' Trial Exhibit 2563 is admitted.

(Plaintiff's Exhibit Number 2563 was admitted into evidence.)

MR. BOIES: I now offer Plaintiffs' Trial Exhibit 2540 for the limited purpose of illustrating the witness' testimony and what he relied on.

MR. DINTZER: No objection under 703, Your Honor.

THE COURT: Plaintiffs' Trial Exhibit 2540 is admitted for the stated purpose.

(Plaintiff's Exhibit Number 2540 was admitted into evidence.)

MR. BOIES: And I would offer Plaintiffs' Trial

Exhibit 2564 generally.

MR. DINTZER: No objection, Your Honor.

THE COURT: Plaintiffs' Trial Exhibit 2564 is admitted.

(Plaintiff's Exhibit Number 2564 was admitted into evidence.)

MR. BOIES: I would offer Plaintiffs' Trial Exhibit 2572.

MR. DINTZER: No objection, Your Honor.

THE COURT: Plaintiffs' Trial Exhibit 2572 is admitted.

(Plaintiff's Exhibit Number 2572 was admitted into evidence.)

MR. BOIES: I would offer 25 -- Plaintiffs' Exhibit 2565. And since this is -- this comes from the government, I would offer this generally.

MR. DINTZER: Your Honor, I don't see a Bates number, so I can't -- if counsel will represent its origin, that would assist.

MR. BOIES: I believe it's a printout -- it comes I am told from the Federal Reserve Web site. However, we can set this aside until the break if you'd like.

MR. DINTZER: We'd appreciate that because there's no timing or any other information to identify it, so, Your Honor, if we could reserve on that one.

THE COURT: We'll hold that one in reserve.

MR. BOIES: I would offer Plaintiffs' Trial Exhibit 2726 for the limited purpose of illustrating what the witness relied on.

MR. DINTZER: Your Honor, can we get a representation from counsel of what it is? I'm not sure I understand what it is.

MR. BOIES: This is, as I understand it, a summary of the terms of the financial assistance for Bank of America, but I can -- maybe I'll just ask the witness to turn to Plaintiffs' Trial Exhibit 2726, which is in your big binder.

THE WITNESS: Yes.

BY MR. BOIES:

Q. Is this a document that you considered in connection with your work?

A. Yes.

Q. And can you explain what it is.

A. This is a description of the B of A guarantee.

MR. BOIES: Your Honor, I would offer it on that basis as evidence of what the witness relied on.

MR. DINTZER: I have no objection under 703, Your Honor.

THE COURT: Plaintiffs' Trial Exhibit 2726 is admitted for the stated purpose.

(Plaintiff's Exhibit Number 2726 was admitted into evidence.)

MR. BOIES: And I would offer Plaintiffs' Trial Exhibit 2735 for the same purpose.

MR. DINTZER: No objection, Your Honor.

THE COURT: Plaintiffs' Trial Exhibit 2735 is admitted for the stated purpose.

(Plaintiff's Exhibit Number 2735 was admitted into evidence.)

MR. BOIES: I would offer Plaintiffs' Trial Exhibit 2814 generally since it is a Board of Governors document.

MR. DINTZER: Your Honor, this isn't on our exhibit list, unless I'm mistaken.

MR. BOIES: This is I think one of the doomsday memos, Your Honor. I can confirm that at the break. But I think this was simply produced to us in the course of the trial.

MR. DINTZER: I apologize, Counsel.

We can confirm what counsel is saying, so I withdraw my objection, Your Honor. I understand it is actually part of the Doomsday Book. Oh, it's already admitted.

THE COURT: There you go.

MR. DINTZER: I have no objection.

MR. BOIES: Your Honor, that completes my exhibits at this time.

Now, I am told that there are some demonstrative exhibits that I did not use with the witness and --

THE COURT: Maybe we can take a well-deserved break.

MR. BOIES: Yes, Your Honor, let's do that.

THE COURT: We'll reconvene at 3:45.

(Court in recess.)

THE COURT: Let's go ahead.

MR. BOIES: Thank you, Your Honor.

BY MR. BOIES:

Q. Dr. Cragg, I want to just ask you briefly some questions about a handful of your exhibits that I did not directly cover with you, although we covered some of the aspects of them.

Would you turn to Plaintiffs' Trial Exhibit 5331. This is in your --

A. Oh, the big book?

Q. -- binder of demonstrative exhibits.

A. Oh. I was going to call this the Doomsday Book.

Q. The big one. No. This is the smaller one.

A. All right. Yes.

Q. Is this a chart that you prepared?

A. It is, yes.

Q. And what is the significance of the material that's set forth here?

A. So this is a -- in the September time period, the SEC had put out a short selling ban. In particular, the reason was -- I guess there was something like 900 institutions on the list that they had halted short selling on. And the reason was because of the fragility of the financial system at that point.

They say, "Financial institutions are particularly vulnerable to this crisis of confidence and panic selling because they depend on the confidence of their trading counterparties in the conduct of their core business."

And so it's a -- I think it's a clear statement about where the market was in September, and it also is a synthesis of the downward spiral that I've talked about where you have fire sale prices, you know -- you know, I should say collateral calls leading to fire sale prices leading to more collateral calls, and so on. That cycle is one of the hardest to stop in a panic, and that's what had started back at the beginning of the year and that the government was struggling to bring to -- bring to a close.

Q. At the end of the first sentence in what you have quoted, the SEC refers to "sudden price declines in the securities of financial institutions unrelated to true pricing valuation."

Do you see that?

A. Yes.

Q. And what significance, if any, does that have to your analysis?

A. Well, this is -- well, on September 23, Mr. Bernanke testified in front of Congress about how two prices had emerged in the -- during the financial crisis. There are true prices and then there are fire sale prices. There are true prices that reflect the intrinsic value, and then there are prices that reflect panic.

And this is an example of how the SEC is articulating that process. And in particular, if you look at, for instance, AIG's stock price during this period, it was very much that uncoupling of intrinsic value from panic pricing.

Q. Let me ask you to turn to Plaintiffs' Trial Exhibit 5340.

Is this a document you prepared?

A. Yes, it is.

Q. And I think you covered this to some extent previously, but just very briefly, what is the significance of what is identified here?

A. Well, during the trial, as well as in the other documents, it's not only I who have spoken about how AIG, you know, could have, you know, potentially raised capital during the buildup period, you know, in the absence of a Lehman failure, but there's -- there's plenty of evidence in the record around that. And these are statements by Mr. Baxter and Mr. Alvarez that relate to, you know, the likelihood of AIG being able to raise capital in the private sector until Lehman failed.

Q. Let me ask you to look at Plaintiffs' Trial Exhibit 5363.

Is this a document you prepared?

A. Yes.

Q. And am I correct that this represents the total amount outstanding at various points in time of a combination of borrowings through the revolving credit facility and TARP funding?

A. That's correct.

So this represents how that borrowing -- how there was, you know, essentially a debt-for-equity swap in November as well as March where the underlying amount of borrowing didn't really change, although in December 2009, at that stage the RCF is paid down with the government's ownership in AIA and ALICO.

Q. Let me ask you to look next at Plaintiffs' Trial

Exhibit 5374.

Is that a document you prepared?

A. Yes.

Q. And what is the significance, if any, of the evidence that you set forth here?

A. Well, this I think is a critical piece of evidence -- or all of these are.

It's -- from an economic matter, as an economic analyst, it's important to know that an AIG bankruptcy was not an option for the government. And you know, all of the key decision makers have said that during the, you know, the course of the trial, and it's -- it's a very important piece of information to an economic analysis of how things played out over the course of September.

Q. Let me ask you to look at Plaintiffs' Trial Exhibit 5377.

Is this a document that you prepared?

A. Yes, it is.

Q. And what significance, if any, does the material set forth here have to your analysis as to what an appropriate approach is for a central bank in a time of crisis?

A. Well, in Mr. Geithner's book, he had or has -- you know, he spoke about what he called moral hazard fundamentalists. And he was talking about those in a way -- talking about them in a way where he's recognizing that at this point in time it's -- it's not a sensible approach.

Q. Let me ask you to --

A. And the reason for that is I think well-articulated in the end here, is that it damages confidence and has the impact of accelerating the downward spiral.

Q. Let me ask you to look next at Plaintiffs' Trial Exhibit 5380.

And this also deals with a subject that we touched on, but I don't think specifically with respect to this exhibit.

And can you briefly just explain what the significance is of the material that you set forth here.

A. Well, this is, you know, a series of statements that relate to the explanation or I would say the attempted explanation that AIG shareholders experienced a windfall -- would have experienced a windfall without the punitive terms. And you know, there are a number of reasons why that's I think a false perception.

One is, you know, there -- you know, what happened with AIG is really the impact of the worldwide liquidity crisis. And the -- not -- providing AIG with liquidity support was a way of mitigating the negative externality that's caused by the worldwide liquidity support, and so it's a -- it's very important to understand what the role of lender of last resort is and how it confers benefits during a panic.

MR. BOIES: Your Honor, I pass the witness.

THE COURT: All right. Very well.

Mr. Dintzer, cross-examination.

(Pause in the proceedings.)

MR. MIZOGUCHI: Your Honor, yesterday afternoon we talked about that exhibit matter, and you asked us to supply a substitute for JX 64?

THE COURT: Yes.

MR. MIZOGUCHI: And if the Court would prefer, I can do that now.

THE COURT: That's fine.

MR. MIZOGUCHI: And we've provided copies to plaintiffs' counsel this morning, so they've seen this.

THE COURT: Excellent.

MR. MIZOGUCHI: If I may approach?

THE COURT: Yes.

MR. MIZOGUCHI: The first document, we took DX 425, which was admitted into evidence yesterday -- that was the unredacted copy of the term sheet -- and restickered it as JX 64-A.

THE COURT: Very well.
MR. MIZOGUCHI: It has a different Bates number than the original 64 because we took DX 425 and restickered it.
THE COURT: Okay.
MR. MIZOGUCHI: And I'll hand up a copy of each.
THE COURT: That will be great. Thank you.
MR. DINTZER: May it please the Court.
THE COURT: Yes. You may go ahead.
MR. DINTZER: Thank you, Your Honor.

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CROSS-EXAMINATION

BY MR. DINTZER:
Q. Good afternoon, Mr. Cragg.
A. Good afternoon.
Q. Now, the Board of Governors operates by a vote; is that right?
A. Yes.
Q. And different members can have different justifications for why they vote in any way.
A. Yes.
Q. And that can be true even if they vote for the same thing, they could do it for different reasons.
A. Yes.
Q. When the Federal Reserve System was created, its

most important role was intended to be the lender of last resort to banks.

A. It was certainly one of the core reasons it was created, but overarching was the importance of banks to the economic system and as a way of ensuring their stability to create broad economic stability.

Q. Its most important role was intended to be as the lender of last resort to banks when it was initially created, sir.

A. That's how -- one of the core conceptions, yes.

Q. And it was created to prevent bank failures from spinning out of control.

A. That was one of its roles.

Q. And in 2008, the largest portion of AIG's business was insurance.

A. Yes.

Q. In 2008, 75 percent of AIG's pre-crisis operating income came from its insurance business. That was its core business.

A. I believe that's right.

Q. AIG has either unwound or plans to unwind its Financial Products division, and maybe you know that now.

A. Sir, I don't -- what time period is the question?

Q. Presently.

Is the Financial Products division unwound or is it in the process of --

A. I believe it's in the process still of being unwound.

Q. But AIG itself as an entity can exist without a Financial Products division.

A. Yes.

Q. Because AIG was an insurance company, it was not regulated or supervised by the Federal Reserve.

In 2008 and be- --

A. No. I think it's not regulated by the Federal Reserve because it didn't have the types of institutions associated with it which would be regulated by the Federal Reserve.

So, for instance, it was regulated by the OTS.

Q. But not the Federal Reserve.

A. Exactly.

Q. Now, you talked about the Federal Reserve's role as lender of last resort.

Most of the Federal Reserve Act is focused on the regulation and supervision of banks; is that right?

A. I'll take your representation. I mean, you can do the page counts.

Q. Okay. But 13(3) is the primary statute for extending lender of last resort lending to institutions

that the rest of the Federal Reserve Act doesn't cover.
A. Yes.
Q. And that can come into play either when the Federal Reserve assists an individual company or with a more broad-based facility.
A. Yes.
Q. Now, we've talked about moral hazard a number of times, and moral hazard is the idea that when people are insured against the consequences of a risk, they will engage in riskier behavior.
A. That, I'll accept your definition of that.
Q. And with moral hazard, the problem with moral hazard is that the possibility that managers of financial firms might make riskier investments if they believe that the federal government will save them from bankruptcy.
A. That's certainly one version of moral hazard.
Q. When the Federal Reserve considers using 13(3) or the discount window to prevent a panic, it needs to consider the trade-off between the moral hazard costs of its role as lender of last resort and the benefit of preventing the financial panic. There's a balance, a trade-off.
A. I'm not -- I wouldn't articulate the decision-making that way. But if it's helpful for us to

keep continuing your questions that way, we can.

Q. Well, I -- if you disagree, I'd be happy to show you something to see if I can get your agreement with.

A. Okay.

Q. But do you agree that there's a trade-off between the potential moral hazard costs and -- when it acts as lender of last resort and the benefit of trying to present a -- prevent a panic?

A. I think the benefit of preventing a panic far outweighs the considerations of moral hazard during a panic --

Q. Categorically.

A. -- in that you should be concerned about moral hazard and the consequences, you know, either before and set up rules that are clear or afterwards to deal with the unexpected consequences that come out of a panic.

Q. Sir, are you familiar with a gentleman named Frederic Mishkin?

A. Yes.

Q. And he has a textbook?

A. He does have a textbook.

Q. And I believe in your deposition you suggested it is one that you found authoritative.

A. Yes.

MR. DINTZER: Okay.

May I approach, Your Honor?

THE COURT: Yes.

BY MR. DINTZER:

Q. And we have the whole textbook, sir, if you'd like to see it, but I'm going to direct you to page 368.

A. Yes.

Q. And if you go to the second paragraph there, the paragraph that begins "Similarly"?

A. Yes.

Q. "Similarly, Federal Reserve actions to prevent financial panic may encourage financial institutions other than banks to take on greater risk. They, too, expect the Fed to ensure that they could get loans if their failure would cause or worsen a financial panic."

Do you see that?

A. I do.

Q. "When the Fed considers using the discount weapon to prevent panics, it therefore needs to consider the trade-off between the moral hazard cost of its role as lender of last resort and the benefit of preventing financial panics."

A. Yes.

Q. Do you see that?

A. I do.

Q. And do you agree with that?

A. We just discussed, you know, the trade-off. I made the trade-off, and I don't see any -- any disagreement between Rick and I.

Q. Well, the next sentence says, "This trade-off explains why the Fed must be careful not to perform its function as lender of last resort too frequently."

A. Yes, I see that.

Q. Do you agree with that?

A. I think it's not a -- I think it's a sensible observation.

Q. Yes or no, sir, do you agree with it?

A. Well, it's not -- it's not a yes-or-no-type question because it talks about frequency, and so I'm trying to give a definition of what I mean by answering it yes or no since "frequently" is critical to the answer.

Q. Okay. So I'm going to ask you for a yes, no, or I don't know, and then you're welcome to explain your answer.

Yes, no or I don't know, do you agree with the sentence "This trade-off explains why the Fed must be careful not to perform its function as lender of last resort too frequently"?

A. I can either answer yes or no and explain why. It's not a -- "I don't know" isn't the third alternative.

There's a fourth alternative, which is yes and no.
Q. Reasonable people can differ.
A. Absolutely.
Q. Okay. No further questions on that document, sir.
Now, a 13(3) loan to AIG in September of 2008 had the risk of creating moral hazard; true?
A. You'll have to be more specific about what you -- what you have in mind there.
Q. When the Federal Reserve considered the possibility of making a loan to AIG in September 2008, it understood that there was a risk of creating moral hazard, yes or no, sir?
A. I think that question isn't well-posed until you explain what type of moral hazard you have in mind.
Q. So you don't understand the question.
A. I can't answer that broad a question yes or no.
Q. Okay. Now, you discussed the Bagehot principle.
The interpretations of Bagehot have varied over the last 130 years since he wrote his document; is that right?
A. Yes.
Q. If you read Bagehot literally, you have to lend to everyone, that -- this man and that man.
A. Yes.

Q. The Federal Reserve's lender of last resort actions in the 1970s, 1980s, they can be read to have been moving away from some of Bagehot's strictures.
A. In the breadth of the strictures that you just described, I think that's true.
Q. So basically the lend -- the Fed in the '70s and '80s didn't read Bagehot literally.
A. No.
Q. Okay. In fact --
A. In the regard that they don't literally lend to every illiquid but solvent institution.
Q. They've never done that.
A. I'm not sure they've never done that, but in the period in the post-'60s that's true.
Q. Central bankers have taken -- at least in the past 30 years, have taken a narrower view on what the lender of last resort role is than Bagehot did.
A. In the very broad way you've described it, that's true.
Q. Generally, the economics profession has rejected the breadth of lending proposed by Bagehot.
A. I don't think that's true.
Q. Okay. Do you have your deposition up there?
It should be the smaller binder.
A. It says -- the larger one says "deposition

transcript."

Q. Okay. That's fine then.

A. Okay.

Q. And if you could go to page 155, sir.

And you're welcome to read -- your answer runs just a bit long. You're welcome to read the whole thing.

The question on page 155 is: "Does Bagehot speak to whether a central bank should provide funding to the small businesses and the homeowners, or is Bagehot really talking about financial institutions?"

Do you see that?

A. I do.

Q. And just -- you're welcome to read it all. The part I'm going to draw your attention to is the third paragraph, where it says -- where you say, "So he had a very broad view of what that could be. Generally, the economics profession, as well as central bankers, have taken a narrower view on what the lender of last resort's role is."

Do you see that?

A. I do, yes.

Q. And when you were saying that, you were saying in comparison to Bagehot himself; correct?

A. Yes.

Q. Okay. And that was an accurate statement when you

made it; isn't that right, sir?
A. Yes.
Q. Okay. And so generally, the economics profession, as well as central bankers, have taken a narrower view of what the lender of last resort's role is than Mr. Bagehot did.
A. Yes. That's how I explain it here.
Q. And now, the lender of last resort function is designed to reduce market disruption.
A. Well, yeah, to deal with panic.
Q. There's no categorical answer as to whether a lender of last resort has to wait until there is no loan available from the private sector; is that right, under 13(3)?
A. I think that's right.
Q. There are also differences of opinion as well as practice as to when it most behooves the lender of last resort to act.
A. Yes.
Q. Because there are differences of opinion about how the lender of last resort function is implemented, those decisions are resolved by policy decisions; is that right?
A. Well, ultimately, the -- a decision has to be made that's a policy decision based upon, as we discussed

earlier, in the example of 13(3), it's based upon the governors' vote.

Q. You cite a gentleman named Humphrey in your report?

A. Yes.

Q. He wrote an article.

A. Yes, he did. He wrote several.

Q. What?

A. He wrote several that I cited.

Q. Several.

And you cite that as giving a succinct statement of the -- of Mr. Bagehot's concept of the lender of last resort.

A. Yes.

Q. And you read the article.

A. I did.

Q. And you found Mr. Humphrey to be an informed, thoughtful commentator.

A. Yes.

MR. DINTZER: May I approach, Your Honor.

THE COURT: Yes.

MR. DINTZER: And this is DX 2201.

BY MR. DINTZER:

Q. And this is Mr. Humphrey's article; is that right?

A. Yes.
Q. Lender of Last Resort: The Concept in History; is that right?
A. Yes.
Q. And if we could go -- now, the pages are numbered beginning with page 8, so if you could go -- starting on what is the first page of the document but the numbered page 8.
And he -- and he identifies sort of the origin of the concept of lender of last resort actually to someone named Thornton who preceded -- Henry Thornton, who actually preceded Mr. Bagehot.
A. Yes.
Q. And so we're actually going farther back in time to almost the beginning of the 19th century; is that right?
It says 1802.
A. Yeah. I was going to say, we're back in the 18th century.
Q. 18th century.
And if we can go to page 10 of this document, numbered page 10?
A. Yes.
Q. And so Mr. Humphrey writes "Macro versus Micro Responsibilities." He writes, "The second issue

considered by Thornton concerns the extent of the lender of last resort's responsibility to individual banks as opposed to the banking system as a whole. Suppose these individual banks are unsound. Must the lender of last resort act to prevent their failure; that is, are bailout operations necessary to preserve the stability of the payments mechanism? Thornton answered in the negative."

Do you see that?

A. Yes.

Q. And so the point here is that the debate about assisting individual banks actually goes back all the way -- or individual institutions, but especially banks he cited, goes all the way back to 1802.

A. That's what the article -- one of the objectives of the article is to lay out some of the history here, yes.

Q. And so that's a distinction, individual banks versus the system, that he identifies dating all the way back to 1802.

A. Yes.

Q. And so still on that page, the next thing that he's doing, apparently he's quoting Mr. Thornton from all the way back in the 1800s.

"It is by no means intended to imply, that it would become the Bank of England to relieve every distress which the rashness of country banks may bring upon them; the bank, by doing this, might encourage their improvidence."

Do you see that?

A. Yes.

Q. And he's talking about moral hazard basically. By bailing each one of them out, it might encourage them to act improvidently.

A. I'm not sure whether he's -- yeah, you know, you're right. I missed the words "might encourage their improvidence," so yes, I agree.

Q. Okay. And then -- and then if you go farther down to the next nonquoting point, he writes, "Thornton made four key points in this passage. First, the lender of last resort's primary responsibility is to the market ('the general interests') and not to the individual bank."

Do you see that?

A. Yes.

Q. And so do you agree with that, with Mr. Humphrey's analysis?

A. Yes. I do think that's the primary objective. I think from a social welfare perspective, the government or lender of last resort eliminating negative

externalities where it can is a good thing.
Q. The next sentence says, "The central bank has no duty to sustain particular institutions."
Do you see that?
A. Yes.
Q. And do you agree with Mr. Humphrey on that point?
A. I would have to explore to a greater extent what exactly he means. I can imagine us coming to consensus on one version of this versus another.
Q. So reasonable scholars can differ agree -- disagree with whether the central bank has a duty to sustain particular institutions.
A. Yes, they can.
Q. Next he says the lender of last resort must take into account the moral hazard problem.
Do you see that?
A. I do.
Q. And you agree that the lender of last resort must take into account whether moral hazard is created when it assists particular institutions.
A. I think he's making a more general statement than what you just made. I think the statement Mr. Humphrey makes is the right one, "the lender of last resort must take account of the moral hazard problem."
Q. Right.

And the sentence right before it is the central bank has to sustain -- has a duty -- well, fine. I'll take your answer at that, sir.

If we could go to the next page, where he writes -- at the very top, he writes, "His third point."

Do you see that?

"His third point, however, was that even in this later case, aid should be extended sparingly and on relatively unfavorable terms."

Do you see that?

A. Yes.

Q. Do you agree with Mr. Humphrey on that point?

A. I'm not sure what he meant by "sparingly" here or by "relatively unfavorable terms." My own view, which I think is shared by many, is that in extending aid, the objective is to calm panic, and so how you do that will vary by circumstance. The general understanding of what unfavorable terms are is the penalty rate, which we've heard one might say ad nauseam at this stage.

Q. So let me just confirm, sir.

When he writes, however -- "His third point, however, was that even in this later case, aid should be extended sparingly and on relatively unfavorable terms," scholars can disagree about when a central bank should extend aid and on what terms.

A. Of course.
Q. Okay. And then if we go back up, just -- and it starts just -- because it addresses something you just said, at the very last sentence that begins on page 10 and carries over, he writes, "In short, individual imprudence should be punished by losses. Only if the financial repercussions of such punishment threaten to become widespread should the lender of last resort intervene."
Do you see that?
A. I do.
Q. And so basically individual institutions should be punished by their own losses without the intervention of the central bank unless it becomes necessary; correct?
A. No. I think you've completely misread the paragraph because you have to look further up.
"Thornton's solution to this problem was to advise against bailout operations for banks whose distress arises from 'rashness,' 'improvidence,' or 'misconduct.' By subsidizing the risk-bearing function of poorly managed banks, such rescue operations, he asserts, would encourage other banks to take excessive speculative risks without fear of the consequences."
So he clearly has in mind the need to observe and

supervise as part of the function of the lender of last resort, because otherwise, as I think anybody would note, moral hazard becomes a problem. You can't tell responsible banks from bad banks, bad being ones that have engaged in rash misconduct.

So it's -- for a lender of last resort's function to be able to avoid moral hazard, the lender of last resort has to supervise; otherwise, it will be making mistakes in not being able to quell the economic circumstances that lead to panic.

Q. Okay, sir. No further questions on that document.

May I approach, Your Honor?

THE COURT: Yes.

MR. DINTZER: This is DX 2202.

THE WITNESS: Thank you.

BY MR. DINTZER:

Q. Sir, this one is titled Lender of Last Resort: What It Is, Whence It Came, and Why the Fed Isn't It.

Do you see that?

A. Yes.

Q. Have you read this article?

A. I have.

Q. And I'm not going to take you through the whole article, but I am going to take you to page 358.

A. Yes.

Q. And if you look at that page, it's number 3 on that page.

Do you see that?

A. I do.

Q. It says "Charging Subsidy Rates."

Do you see that?

A. Yes.

Q. And he writes, "Third, the Fed has deviated from Bagehot's instructions to charge high, that is, above-market, or penalty, interest rates. Quite to the contrary, it has accommodated AIG and other borrowers at below-market, or subsidy, rates. It charged AIG rates of 8.5 to 12 percent at a time when junk bonds, equivalent in quality to the near-bankrupt AIG's assets, were yielding in excess of 17 percent."

Do you see that?

A. Yes.

Q. Okay. So he thinks that the AIG rates should have been higher.

A. That's what he thinks, yes.

Q. And obviously, from what I gather from your testimony -- you can surprise me here -- but you disagree.

A. Yes. And I've confirmed that in our previous

conversation, so I don't want to surprise you again.
Q. Okay. Reasonable scholars can disagree about what the proper rate was to charge AIG.
A. I think an informed scholar wouldn't. But I imagine circumstances where there could be disagreement.
Q. Well, Mr. Humphrey is somebody that you cited and that you agreed with me earlier was an informed individual, and he's disagreeing with you, so can we say that informed individuals, scholars, can disagree about the penalty rate that AIG should have been charged?
A. I think I probably misspoke when I said "informed." Informed about AIG's circumstances.
Q. Okay.
A. I don't think when he makes this, these statements, that I'd be surprised if he actually knew from the popular press what AIG's circumstances actually were.
Q. Well, he calls AIG near-bankrupt.
Was that accurate?
A. Yes.
Q. Okay. So assuming --
A. Sorry.
Q. Let's --
A. He actually says "near-bankrupt AIG's assets," which that actually isn't true. It's the parent company

that was liquidity-constrained, and as a result, the potential was that that liquidity squeeze might have led it to -- led the parent to run out of cash.

Q. Sir, my only point is this. Mr. Humphrey, who yourself cite and rely on in your report for some of his articles, has identified that he believed a higher rate for AIG would have been appropriate; is that correct?

A. That's what he says. Yes.

Q. Okay. No further questions on that document, sir.

Now, the 13(3) requires a finding of unusual and exigent circumstances; is that correct?

A. Yes.

Q. And an inability to secure adequate credit?

A. Yes.

Q. And an inability -- and the -- and the requirement that the borrower is unable to secure adequate credit gives the Fed a lot of room for interpretation.

A. Yes.

Q. And 13(3) doesn't specify under what circumstances the lending authority will be used.

A. Well, it says in unusual and exigent circumstances.

Q. If the minimum requirements of 13(3) are met, 13(3) does not say that lending has to take place. Do you agree?

A. Right. That's correct.

Q. And that's for the Federal Reserve to determine.

A. Yes.

Q. And Congress relied on the Federal Reserve to make that determination, in fact, thought they required a five-governor vote to make that determination.

A. Yes.

Q. The Federal Reserve's resources are not infinite.

A. That's correct.

Q. Every dollar lent to one borrower is a dollar that can't be lent to another.

A. That's not quite true.

Q. Okay. If I could get you to look at your report, your initial report, at section 190.

Okay. And you're welcome to read the entire paragraph of 190. I'm just reading the quote that you quote in your report.

"Every dollar that the Fed lends to AIG is a dollar that cannot be used for other purposes: the Fed's balance sheet constraints might be binding at some point."

Do you see that?

A. Yes. That's what the memorandum said.

Q. And you cited it because you agree with it.
A. I think it's making a point which is consistent with what I said, that there is a constraint to how much the Fed can lend, and so there is a trade-off between -- or there can be a trade-off, depending on the circumstances, of, you know, lending to one borrower versus another.
Q. So every --
A. But what I was originally disagreeing with was your initial characterization.
Q. Sir, I just want to make sure that we're on the same page.
The -- every dollar that the Federal Reserve lends to one borrower is a dollar cannot be lent, used for some other purpose, yes or no?
A. And I said that's not necessarily true.
Q. Okay. You cite -- but you recognize you quoted that in your report.
A. Yes.
Q. Okay.
A. Okay.
Q. No further questions on that, sir.
The Fed has discretion as to how they execute the mandates of the FRA.
A. Yes.

Q. 13(3) gives the Fed the discretion to act. It's a choice as to when it's -- it's its choice as to when it's going to use that ability.

A. Yes. I mean, it provides guidance. You know, there's -- on how to do that and when to do that. But ultimately, there's a decision that has to be made.

Q. And those are policy decisions ultimately.

A. Policymakers make those decisions, yes.

Q. It's okay for the Fed to treat different borrowers differently based on their financial status.

A. Yes.

Q. No financial institution was entitled to a loan under 13(3).

A. When you say -- sorry. Can you repeat that?

Q. Sure.

No financial institution was entitled to a loan under 13(3).

A. I don't think that's true.

Q. AIG was not entitled to a loan under 13(3).

A. That's not true either.

Q. Okay. Do you know who Chester Spatt is?

A. Yes.

Q. Who?

A. He's an economist. If I remember correctly, I think he's at Carnegie-Mellon University. He used to be

I believe chief economist at the SEC.
Q. Was he deposed in this case?
A. Yes.
Q. And you read his deposition.
A. I quickly read it. Yes.
Q. And you read his deposition so you would be prepared to answer the same questions in your deposition.
A. Yeah. As he was deposed before I was and I was curious about the types of questions which were being posed, I wanted to be prepared to be able to answer them.
MR. DINTZER: We might have to jump back to this one, Your Honor.
Well, hang on.
No? Okay.
THE WITNESS: You know, the problem is it's in a white binder.
BY MR. DINTZER:
Q. I haven't asked, if it was intentional that some are white and some are black (indicating).
Riskier borrowers pay higher interest rates than safer borrowers in order to persuade lenders to accept the higher risk of default.
A. That's generally true.

Q. The more risk in the loan to AIG, however much that was, the higher the compensation they should have expected to pay.

A. No.

Q. So regardless of the risk in the AIG loan, AIG shouldn't have -- it shouldn't have affected the amount AIG expected to pay.

A. You're talking about the RCF that was fully collateralized?

Q. Why don't we talk private first, sir.

If AIG had been -- managed to access the private market, then the more risk that the private market expected in AIG or saw in AIG, the more compensation AIG should have been expected to pay; right?

A. As a general proposition, holding all else equal, interest rates are higher for riskier borrowers.

Q. And so your opinion is that under the RC- -- under a federal facility that AIG should have been charged something less than a market rate.

A. Well, it should have been charged a rate that was somewhat or slightly above what a market rate would be in normal circumstances.

Q. So let's just --

A. So not like -- not at the time that the loan was extended.

Q. So I can't remember. Did you pick a date when you think that was sort of the last date it could have gotten a private loan? I can't remember if you did or didn't.

A. I don't remember us having --

Q. It's not a trick question.

A. No. I don't remember us having that conversation, so --

Q. Well, I meant with plaintiffs' counsel.

A. Oh.

Q. Do you have a date when you think sort of was the last opportunity AIG had to get a private --

A. Well, I've identified that a run on AIG started the week before the Lehman crisis. When you look at what was happening with AIG's wholesale borrowing opportunities, they were -- started to run it looks like around September 11.

Q. Okay. But that's not really my question.

My question, sir, is, do you have an opinion -- and if you don't, that's fine -- do you have an opinion as to when the last opportunity for AIG to get a private loan, a private -- loan in the private sector existed?

A. Well, it was getting loans on the 10th.

Q. Oh, I see.

Do you have an opinion as to when AIG might have been able to raise funds to cover its CDS collateral payments, when it might have been able to secure something akin to the RCF, in the private sector?

A. Well, that's kind of a circular question in the sense that the RCF was necessary because there was a run on AIG, so you want to put -- you're putting AIG in the -- in the way you posed the question, you're putting it in a circumstance where it -- private sector liquidity isn't available to it.

Q. If AIG did not have access, as it didn't, to the PDCF or any of the other facilities before September 15 or September 16, if it didn't have those, as it didn't, do you have an opinion as to when it might have been able to secure $20 billion worth of liquidity on top of whatever it was getting from securities lending and the tri-party repo market?

A. I haven't developed an opinion on that. I mean, it raised that much money in the summer.

Q. Exactly.

It raised 20 billion in the summer, and it raised 3 billion in August; right?

A. Yes.

Q. And in both instances, it could have raised more; isn't that right?

A. I don't know how much more it could have, but I imagine it could have, yes.

Q. Do you know if AIG actually tried to raise private money, separate from securities lending, tri-party repo, when it tried to sort of raise a big chunk of money before it ultimately turned to the Federal Reserve?
A. Sorry. Can you repeat that?
Q. Sure.
When was the last --
(Admonition from the court reporter.)
THE WITNESS: Maybe I'll understand it better then.
BY MR. DINTZER:
Q. Do you know when the last time AIG tried to raise money, outside of its securities lending and tri-party repo efforts and commercial paper efforts, but tried to raise a chunk of money, 10, 15, 20 billion dollars, to help it with its liquidity problems, in the private sector?
A. There's a fair amount of evidence in the record that it was doing that, you know, in the range of the 11th, 12th, over the Lehman weekend.
Q. So the 11th, 12th -- so let's just use that as a line.
If AIG had succeeded in raising that money that it tried to do, that chunk of money on the 11th and 12th, it would have had to pay a market rate; correct?

Whatever the --

A. It would have paid what it paid. Yes.

Q. Right. It would have had to pay a private market rate.

Now, what you're supposing it should have been charged, the rate you suggest that it should have been charged, was what you called the normal rate; is that right? Or -- I believe I heard you say the normal rate. Is that right?

A. No. I said it should be, like everybody, charged a penalty rate.

Q. Right.

And so -- and so my question is, if the penalty rate is below the private market rate, should the Fed try to raise the penalty rate up so that whoever the borrower is doesn't get an advantage from coming to the Fed as opposed to what it could get in the private market?

A. That's the design of the penalty rate, is to be somewhat higher than what a normal rate would prevail in a normal market.

Q. And let's define normal --

A. So, for instance, it was, you know, the primary rate set relative to the Fed funds rate. You know, typically it's 50 basis points higher. At that point, the Fed had lowered it to be 25 basis points higher than the federal funds rate.

Q. And you used the term "normal rate," and I just want to make sure -- I'm not sure if that's been explained to the Court.

The normal rate is the rate that might have been obtained had there not been a financial crisis; is that right?

A. Yes.

Q. So -- and so my only question is this, sir, if the penalty rate, you know, some amount above the federal funds rate, if that's lower than they could have gotten here, 11th and 12th in the private market, should the Fed let them -- once they cross over this line so there's no private funds available, should the Fed give them a rate, a loan at this lower rate, or should the Fed try to mimic what's available in the private market so that there's no benefit to sort of jumping the line and not being able to raise money in the private market?

A. Well, the Fed is trying to calm panic, and so in the case of AIG, you know, lending at a rate which is comparable to what others were borrowing at would be a sensible policy at that stage.

Q. What others were borrowing at in the private market; right?

A. No. We're talking about 13(3) facilities right now.

Q. Okay. So your opinion is that if the -- if this penalty rate, this certain amount above the federal funds rate, if it's way lower than the private rate, that that should be what AIG should get, that once it can no longer borrow in the private market at this rate, it should get this, this little bit above the federal funds rate; right?

A. I guess I'm finding it hard to follow the hypothetical because you're going from a circumstance where AIG has the ability to borrow to one where it doesn't as if during this period of time that's the way the markets were functioning.

I mean, the reality is that every major financial institution at this, you know, point in time is scrambling to raise funds. AIG is, you know, relative to the others who, you know, at least have access to, you know, the broadened PDCF, and so on. It's a -- it's very different circumstance than the one you're describing here.

Q. And I understand that, sir. My question is -- really should be pretty straightforward.

Everybody who's not getting a 13(3) loan on the 10th, 11th -- we can go back as far as you want -- but everybody who's not getting a 13(3) loan, which we can agree is most of the United States; right? Most homeowners, small businesses, they're not getting 13(3) loans; right?

A. Correct.

Q. Okay. So everybody else has to live in this private market. However bad it gets, they have to live over here (indicating). You'll agree with me.

A. Yes.

Q. Okay. And so the question is, is that once you cross over here for -- and you get access to 13(3) for whatever reason, should the Fed try to make the 13(3) rate at least close to what all these other people are facing, or should it be just a little bit above the federal funds rate?

That's my question.

A. Yeah. In general, the comparisons I have made in my analysis is the -- how extraordinary AIG's interest rate was relative to all of the other 13(3) loans that were charged.

Q. Right.

A. I haven't --

Q. You didn't look at this part about comparing them to everybody else.

A. I was just going to finish, which I haven't provided an opinion about what an alternative 13(3) rate should be for AIG. I mean, I've just -- I've noted just how extraordinary the rate that was chosen for AIG was.

Q. Right.

And you haven't figured out what the private rate would have been for AIG before it crossed this line to the point where it couldn't access the private market. The last private rate available, you haven't done that, that analysis.

A. I don't think we have that information available to us.

Q. Okay.

And --

A. And the core issue for AIG was the liquidity that it -- that it was facing a run on its wholesale lending and that resolving what that run looked like required the reestablishment of confidence in AIG, and so it's much more about confidence than it is about the counterfactual you're trying to describe here.

Q. Everybody else in America had to face exactly what you're talking about without a 13(3) loan except for the very -- PDCF with 17 people, a very, very small set of financial firms, everybody else had to deal with exactly what you're talking about; isn't that right, sir?

Most of America had to deal with the financial

crisis, however bad it was -- okay -- day to day, however it was, without a 13(3) loan.
A. Yes.
Q. Okay. Now, you talked about the collateral backing the RCF.
The primary collateral backing the RCF was the equity in the subsidiaries; is that right?
A. Yes.
Q. The equity in AIG's insurance subsidiaries was not traded on any market or exchange.
A. At that point, yes.
Q. At the time that the loan was made.
A. Right.
Q. The primary collateral backing the RCF and it -- well, let me try it this way.
The collateral used to secure the credit agreement was illiquid.
A. At that point in time certainly.
Q. When the loan was made.
A. Yes.
Q. Meaning it couldn't be easily bought or sold.
A. Right. AIG's problem was one of liquidity. That generally would apply to all of its assets. If it could have simply sold off a few subsidiaries to deal with its liquidity problem, we'd be talking about a different

financial crisis.

Q. Exactly.

And in fact, that was the big challenge. It took years to sell those, those financial assets, because they're big and you have to find the buyer to pay full -- you know, a reasonable price; right?

A. Yeah. Often coming out of a financial recovery takes much longer than people expect.

Q. Not all of AIG's assets could be pledged for the loan; is that right? The -- the -- the credit agreement.

A. You have to be more specific on what you have in mind.

Q. Sure.

AIG had a number of assets that could not be pledged.

Foreign unregulated subsidiaries couldn't be pledged as part of the loan; is that right?

A. I'm sure there are limitations on what exactly could be pledged.

Q. And I'll just read you -- it's a footnote in your report, and if you disagree, I'd be happy to show it to you.

"Foreign unregulated subsidiaries appear to have been excluded in order to avoid adverse tax consequences to AIG."

Does that sound familiar?

MR. BOIES: Can we have a citation?

MR. DINTZER: Sure. It's footnote 471.

THE WITNESS: I assume that you're reading it properly.

BY MR. DINTZER:

Q. No, no. That's fine. I want to make sure. We might as well just cross our Ts, so if you could go to your report at page 273.

A. Yes, I'm at page 273, and it's footnote which?

Q. 471. Towards the bottom. It's a small point, sir, but I just wanted to nail it down.

"Foreign unregulated subsidiaries appear to have been excluded," do you see that?

A. Yes.

Q. Is it your understanding that not all of AIG's assets was pledged for the credit agreement?

A. Yes. I'm -- I don't specifically remember this document, but the fact that there could be adverse tax consequences wouldn't in the least bit be atypical.

Q. Now, the value of collateral can change after a loan is made against the collateral.

A. Yes.

Q. In a changing market, what was reliable collateral one day can be unreliable or insufficient the next day.

A. Yes. I'll give you an example.

Suppose that you're trying to enter into a short position with your broker. He requires $10.00 of collateral to cover your position. If the stock price rises that you've shorted rather than falls, he will ask you to post more collateral, knowing that when it comes time to close the position, it's going to cost you more to buy a share on the market to close out your position.

Q. Sure.

Or maybe I buy a house for $250,000 that's appraised for $250,000, and I put $90,000 down for 20 percent, so the bank has got collateral, a mortgage on my house, of 80 percent, but --

A. You only have to put 50 for your example, so...

Q. 250, you're right. You know, I should always write these hypotheticals down when they involve math.

But the -- it drops -- the value of the collateral, once the loan is set -- let's assume a fixed 30 -- once the loan is set, the value of the collateral can actually drop below what the outstanding price is on the mortgage.

A. Yes.

Q. And that happened a lot during the financial crisis.

A. Yes.
Q. And, for example, before 2007 -- well, actually -- when the New York Fed signed the credit agreement with AIG on September 22, 2008, there was still a risk that AIG would go bankrupt.
A. Yes.
Q. When they signed the credit agreement --
A. I should say, just to qualify it, a lot of that risk was under the control of the government at that point.
Q. If the government planned on putting in more money.
A. Well, there are lots of ifs, so we can spend a lot of time on that "if" question.
Q. But one of the ifs -- fair enough, sir.
But one of the ifs about whether AIG would go bankrupt after the credit agreement, one of the ifs was if the Treasury plus the Fed plus the Board of Governors planned to put in more money or -- and the FDIC, one way -- I mean, however, one way or the other --
A. I was just going to say, our conversation would go "if this, then that," and so you've just gone "if then, that," so we have to get to "this" first.
Q. Okay. So if the 85 billion was the only money the government was going to put in, the chances of AIG

going bankrupt after that first loan were not insignificant.

A. Well, the world played itself out in a way where the onerous loan terms were such that the loan had to be refinanced in November, so the structure of the loan, you know, ultimately necessitated refinancing.

Q. Do you have an opinion, sir, as to whether, if $85 billion, even if it was, you know, a gold-plated -- the cheapest loan that they could get, whether $85 billion loan, that alone, without all the other TARP and all the other money that the Fed and the Treasury put in, whether that could have been enough without somebody else lending AIG more money?

A. You mean if -- so just to get your counterfactual correct, are you saying that AIG, let's say, was given access to the PDCF and was able to cover its positions or you just want to give it $85 billion at terms that are similar to what everybody else received.

Q. No. $85 billion at 3 percent rate, whatever, the point is, sir, is that $85 billion without subsequent money from somewhere was not going to get AIG through; is that a -- is that correct?

A. I think it's a very difficult counterfactual you're asking because remember the -- the core issue that's being addressed is the market's confidence in AIG as well as market confidence overall. I mean, one of the key reasons for supporting AIG is to support the market overall, so there are two types of inferences that are being made from an alternative loan of the sort that you're talking about. One is, is the government now acting more rationally. And second, is AIG in a position where it would be a proper investor -- a proper inference to make by investors that -- that the concerns about the company have been quelled, and so that feedback that I'm talking about is critical to resolving the counterfactual that you're asking.

Q. If AIG went bankrupt, if they did after the government made the credit -- the credit agreement, there was a risk that AIG's insurance companies would drop in value.

A. Well, again, the question is under what circumstances. What I've seen in terms of insurance bankruptcies, it really depends on how the bankruptcy gets executed and what the circumstances are, and so I think you -- in terms of being able to resolve what a bankruptcy would look like requires a lot more than the two of us are going to be able to get across in the next few minutes.

Q. If AIG -- if the AIG parent had failed after the credit agreement was signed, insurance commissioners would have taken the various insurance subs into receivership; isn't that correct?

A. No. You can't make that immediate assumption.

Insurance commissioners react in a variety of different ways. There are different ways that they protect policyholders. There isn't just a single way that they go about doing that.

So there could be prepackage support. There can be supervision that is simply the decision that the commissioner enters into.

So there's a -- it's not a -- the way you've articulated it isn't the way insurance commissioners -- you know, you can't just categorically describe their behavior the way you are.

Q. If the AIG parent company failed, insurance commissioners typically would be led to taking into receivership the various insurance sub entities, depending on where they're domesticated; correct?

A. Yeah. The key would be always insurance commissioners are worried about protecting the policyholders, and so their decisions are guided by that principle. And depending on how the world plays out in the counterfactual you have in mind right now will dictate what they do.

Q. Now, I want to make sure I got a yes on that. I think I got a yeah, and so I want to make sure.

If the AIG parent company failed, insurance commissioners typically would be led to taking into receivership the various insured sub entities, depending on where they're domesticated, yes, no or I don't know?

A. I'm just answering --

Q. Yes, no, or I don't know, sir?

A. Well, I was -- it's a yes and no. It's the -- yes, the insurance commissioners will do something.

Q. Typically. That's the --

A. They will always do something.

Q. Okay.

A. They will certainly -- if a parent goes bankrupt, they will certainly look at the insurance subsidiaries.

Q. And that's not my question, sir, and so I need you to listen to my question and answer the question I'm asking.

Not will they look at it, not will they be interested in it, if the AIG parent company failed, insurance commissioners typically would be led to taking into receivership the various insured sub entities, depending on where they're domesticated, yes, no, or I don't know?

A. I -- let me just explain my hesitation, and then I'll answer.

Q. Why don't we turn to your deposition, sir.
A. All right.
Q. Okay?
And can I ask you, sir, as part of your prep, did you read the portion -- I mean, you have a sense of where I'm going.
Did you read the portion of your deposition I'm about to take you to?
A. I read it a few weeks ago, so I don't have a sense of where you're going.
Q. Fair enough.
Let's turn to page 262 then in your deposition. And we'll go to line 10. Just let me know when you're there, sir.
Sir?
A. Yes.
Q. Do you have --
"QUESTION: Do you have an opinion as to what would have happened to AIG's insurance subsidiaries had AIG, the parent company, failed?
"ANSWER: If AIG -- the circumstances under which AIG, the parent company, failed, would typically lead to the insurance commissioners taking into receivership the various insurance sub entities, depending on where they're domesticated."

Do you see that?
A. Yes, I do.
Q. And that was accurate when you said it?
A. Well, I think the term "receivership" isn't right. It's either they'll go into supervision or rehabilitation.
Q. So --
A. I'm not using the right term in my answer.
Q. So you're -- what you said in your deposition was wrong.
A. Yes. I -- I should have been using -- the right terminology with insurance companies is "supervision and rehabilitation."
And you know, the insurance commissioner would worry about -- it would -- if it determined that the policyholders were protected in that the insurance company was adequately capitalized, then supervision would likely be the outcome.
If there was inadequate capital backing the policyholders, then rehabilitation would be the direction that the company went.
And then finally, if there was no hope, it would go into a runoff mode, so one of the reasons --
Q. You didn't say any of that in your deposition.
A. I have focused on the insurance industry a lot

more since we actually last spoke, so --

Q. You didn't say any of that in your deposition, sir.

A. No. I totally agree with you.

Q. Okay. And what you said in your deposition was "receivership"; right?

A. Absolutely.

Q. Okay. No further questions on that document.

THE COURT: Mr. Dintzer, before we break for today, can you give me a preview of what to expect tomorrow and Friday?

MR. DINTZER: You mean generally like an enthralling cross-examination or more specifically about time?

THE COURT: Well, I'm not going to limit your cross in any way, but we talked about starting the defendant's case, and that's where I was going.

MR. DINTZER: I completely appreciate that, Your Honor.

I would guess that I have a number of hours. I would hate to put it, but probably three-ish or four-ish.

THE COURT: Okay.

MR. DINTZER: I will try to and I am trying to keep -- in fact, maybe a little too much, I'm trying to keep it moving along.

THE COURT: Well, can you tell me then who are the first witnesses on the defendant's side?

MR. DINTZER: It may have -- we definitely had -- we definitely had a witness chosen first, but the fact that they're not starting first thing tomorrow may cause a switch, and so if I may have just a moment of indulgence, Your Honor, let me just confirm this.

THE COURT: Sure.

(Pause in the proceedings.)

MR. DINTZER: Your Honor, one of the -- our original intent was to have Mr. Huebner as the first witness. Mr. Huebner is an observant Jew who needs to be back home before the sundown on Friday night, and so it -- which is in New York, which means he would need to leave here by noon on Friday to be able to make that.

Because of that, the way that this is looking, it's looking like we would probably not have him in that spot and it is more likely, given the amount of time that I'm going to need and then presumably the plaintiffs after, that we'll have Mr. Neuberger in the starting spot.

THE COURT: Okay. Very well then. Let's adjourn until 9:30 tomorrow morning.

(Whereupon, at 4:59 p.m., the proceedings were adjourned.)

CERTIFICATE OF TRANSCRIBER

I, Josett F. Whalen, court-approved transcriber, certify that the foregoing is a correct transcription from the official digital sound recording of the proceedings in the above-titled matter.

DATED: OCTOBER 30, 2014

s/Josett F. Whalen
JOSETT F. WHALEN, COURT REPORTER

ADMITTED EXHIBITS

PX	PAGE	DESCRIPTION
168	5123	SEC Press Release (9/19/2008) SEC Halts Short Selling of Financial Stocks to Protect Investors and Markets
266	5024	BlackRock slides: Multi-Sector CDO Action Plan Review (September 29, 2008)
457	5125	Email (3/12/2009 8:25 am) From: Briana Hart To: Phil Meir, Sara Lo, cc: Zach Buchwald, Andrew Forster re: RE: Urgent Request for BlackRock Expected Loss numbers
500	5018	GAO Follow-up Interview with Texas State Department of Insurance (April 7, 2009)

609	4979	Email (9/29/2010 7:49 pm) From: David Herzog To: Vincent Colman re: FW: MEETING MATERIALS - AIG Government Repayment Committee Meeting - Wednesday, September 29th - 7:00 a.m. - 10:00 a.m. (EDT) Attaching AIG Government Repayment Committee Meeting Agenda and Materials (AIG Slides on AIG Govenment Exit Plan: Presentation to AIG Board of Directors: September 29, 2010, BOA/Merrill Lynch/Citi Project Independence: Board of Directors Presentation: September 29, 2010, Rothschiled Slides on Project Altius--Discussion materials)
625	5018	GAO Record of Interview (2/5/2011) Discussion with Texas Department of Insurance regarding TDI involvement in the AIG crisis, the extent of its interactions with the Federal Reserve, and potential actions of state regulators in the event of an AIG failure
628	5125	GAO Record of Interview (1/31/2011) State Insurance Regulators and NAIC on various job-related topics

661	5126	Complaint of the United States v. McGraw-Hill Companies, Inc. And Standard & Poor’s Financial Services LLC, No. Cv 13-00779
1202	5089	March 16, 2008 FRBOG Press Release re initiatives designed to bolster market liquidity and promote orderly market functioning
1214	5050	FRBNY Press Release (March 24, 2008) - Summary of Terms and Conditions Regarding the JPMorgan Chase Facility
1469	5129	Securities Lending Loan Balances from AIG Companies as of August 26, 2008
1475	5129	Attachment to AIGSTARR00116221: Spreadsheet - Liquidity Risk Analysis 082608 Repo Buckets
1478	5129	Frame, Scott, Andreas Lehnert, and Ned Prescott, “A Snapshot of Mortgage Conditions with an Emphasis on Subprime Mortgage Performance,” Federal Reserve’s Home Mortgage Initiatives Coordinating Committee, (August 27, 2008)
1513	5130	Email (9/9/2008) From: Nugzari Jakobishvili To: Zach Buchwald re: FW: Updated Super Senior CDS portfolio analysis Attaching: Presentation on Review of Cash Flow Projections for AIG-FP Super Senior CDS Portfolio (September 9, 2008)

1843	4979	Joint Statement by Treasury, Federal Reserve, and the FDIC on Citigroup
1845	4979	Summary of Terms of Eligible Asset Guarantee Agreement with Citigroup (Nov. 23, 2008)
1849	4980	2008.11.26 Citigroup Form 8-K
2248	4980	Citi Slide Deck: Project Independence: Board of Directors Presentation (September 29, 2010)
2329	5130	“Single-Tranche Term Repurchase Agreements, March - December 2008,” Board of Governors of the Federal Reserve System (July 6, 2011)
2388	5130	Cordell, Larry, Huang, Yilin and Williams, Meredith, “Collateral Damage: Sizing and Assessing the Subprime CDO Crisis,” Working Paper No. 11-30R, Federal Reserve Bank of Philadelphia Research Department, (May 2012)
2473	4997	DOJ Press Release, “Justice Department, Federal and State Partners Secure Record $13 Billion Global Settlement with JPMorgan for Misleading Investors About Securities Containing Toxic Mortgages” (November 19, 2013) - with linked attachments
2485	5131	Corkery & Silver-Greenberg, "Morgan Stanley Reaches $1.25 Billion Mortgage Settlement," New York Times (Feb. 4, 2014)

2504	5131	"Bank of America to pay $9.3 billion to settle mortgage bond claims," Reuters (March 26, 2014)
2527	4997	DOJ Press Release, “Justice Department, Federal and State Partners Secure Record $7 Billion Global Settlement with Citigroup for Misleading Investors About Securities Containing Toxic Mortgages” (July 14, 2014) - with linked attachments
2528	5131	Leslie Scism and Christina Rexrode, "Bank of America to Pay $650 Million to AIG in Mortgage Disputes," Wall St. J. (July 16, 2014)
2536	5050	FRBNY website - Maiden Lane Transactions
2539	5132	FRBNY Website -MLIItransactiondata.xls, available at http://www.newyorkfed.org/markets/maidenlane/xls/MLIItransactiondata.xls
2540	5132	FRBNY Website - MLIIItransactiondata.xls, available at http://www.newyorkfed.org/markets/maidenlane/xls/MLIIItransactiondata.xls
2542	5047	FRBNY Website - "Primary Dealers List"
2563	5132	Federal Reserve Board of Governors Website - “Term Auction Facility (TAF)”

2564	5133	Federal Reserve Board of Governors Website - “Term Securities Lending Facility (TSLF) and TSLF Options Program (TOP)”
2572	5133	Federal Reserve Board of Governors Website - "Credit and Liquidity Programs and the Balance Sheet - Collateral and rate setting"
2726	5135	Summary of Terms: Eligible Asset Guarantee: Bank of America
2734	4997	Department of Justice Press Release, "Bank of America to Pay $16.65 Billion in Historic Justice Department Settlement for Financial Fraud Leading up to and During the Financial Crisis" (August 21, 2014) - with linked attachments
2735	5135	Summary of Terms of USG/Citigroup Loss Sharing Program
2816	5119	Doomsday Book Memorandum
2826	5119	Doomsday Book Memorandum
2857-A	5123	Primary Dealer Credit Facility Document
2872	4997	DOJ Press Release
5300	5123	Dr. Cragg Demonstrative
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DX	PAGE	DESCRIPTION
933	5091	PRIMARY DEALER CREDIT FACILITY - FREQUENTLY ASKED QUESTIONS
1555	4980	JANUARY 15, 2009 CITIGROUP 8-K