United States of America

Financial Crisis Inquiry Commission

INTERVIEW OF

ARTURO CIFUENTES

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***** Confidential *****

Financial Crisis Inquiry Commission

[Unspecified Date]

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MS. SHAFER: -- at least I get to see you in person the next time you're in the States.

MR. CIFUENTES: Yes, I hope next time, I'll give you a call. I mean, it was pretty busy. I mean, it was kind of crazy when I was there the last time, so I didn't have time to -– I mean, it was pretty hectic, but…

MS. SHAFER: Yes, no problem.

MR. CIFUENTES: I'll probably be in New York sometime in June or July.

MS. SHAFER: Okay, let me know.

MR. MCWILLIAMS: If I could start –-

MR. CIFUENTES: Right now, I'm losing you, Kim.

MR. WILLIAMS: Kim --

MR. CIFUENTES: Are you on a cell phone or…

MS. SHAFER: I am not, but I'm connected a little distantly because we weren't sure we had enough lines.

So I'll turn it over a little to my colleagues, Bruce and Ryan.

And then I'll chime in with questions if I

want to add something. Okay?

MR. CIFUENTES: Okay.

MR. MCWILLIAMS: Hi, Professor. Let me run through a little bit about who we are and the rules here.

MR. CIFUENTES: Sure.

MR. MCWILLIAMS: The Commission was established by statute, signed in law by the President. There are ten commissioners, all come from outside of the government. The bipartisan commission is charged with examining the causes of the financial crisis, it is also examining the causes of the collapse of major financial institutions that have failed or would likely have failed had they not received exceptional government assistance.

The Commission is to provide a report that contains the findings and conclusions of the Commission to the President and the Congress by December 15th, 2010.

The Commission may require, by subpoena or otherwise, the attendance and testimony of witnesses, the production of the books, records, correspondence, memoranda, papers, and documents.

If you have any questions, I can give you a copy of the statute by which the Commission was created.

MR. CIFUENTES: No. I'm quite happy with your

rendition, Bruce. Don't worry. I'm quite familiar also with what you're doing, and so feel free. I mean, I don't have any problem with that.

MR. MCWILLIAMS: Let me –- I have two other things to tell you.

MR. CIFUENTES: Sure.

MR. MCWILLIAMS: Let me remind you that Section 1000, Title 18, of the United States Code provides that whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willingly falsifies, conceals, or covers up by any trick, scheme, or device of material fact or makes any false, fictitious, or fraudulent statements or representations or makes use of any false writing or documents knowing the same to contain any false, fictitious, or fraudulent statement or entry shall be fined under this title or imprisoned not more than five years or both.

So you've been warned.

MR. CIFUENTES: Uh-huh.

MR. MCWILLIAMS: So, let's go around the room and introduce ourselves, who's on the phone here.

I'm Bruce McWilliams. I'm with the Financial Crisis Inquiry -– oh, this is being recorded also, just to let you know.

MR. CIFUENTES: Don't worry. I got the – I got your e-mail, Kim, regarding the recording, so that's all right. I mean, I don't have a problem with that.

MR. MCWILLIAMS: For the record, we need to specify who is here, though.

So, Kim?

MR. CIFUENTES: There has -– you want me to say that I'm okay with that or --

MR. MCWILLIAMS: Yes, well, you have now.

But what's your name?

MR. CIFUENTES: Arturo Cifuentes.

MR. MCWILLIAMS: Thank you.

Kim?

MS. SHAFER: Kim Leslie Shafer.

MR. MCWILLIAMS: Ryan?

MR. BUBB: Ryan Bubb.

MS. AHMED: Shaista Ahmed.

MR. MCWILLIAMS: That's all of us?

Okay, I think we're set to go.

Ryan, do you want to kick off with some questions?

MR. BUBB: Sure. Maybe we could just start, Professor Cifuentes, with your employment history at Moody's, just to get through the dates and context –-

MR. CIFUENTES: I can -- you know, the only

one of you that I can really hear is Bruce, but I missed half of what you say, Kim. And the other line, it's kind of -– are you guys on a cell phone or something or…

MR. BUBB: Yes, we –- I am on a cell phone.

MR. CIFUENTES: Because I can hear you -– I can hear you very well, Bruce. I mean, everything you said was very, very clear. But the other two lines, I think are kind of getting cut off, on and off.

MR. MCWILLIAMS: Well, maybe what I'll do is I'll repeat the questions. That's probably easiest.

MR. CIFUENTES: Yes, okay.

MR. MCWILLIAMS: So the question is, if you could start off with your employment history at Moody's and carry on from there.

MR. CIFUENTES: Yes. I worked at Moody's since the beginning 1996. January '96. And I worked there until probably September, October of '99.

I left there, and I worked for AMBAC for about six months.

Then I went to manage a fund that invested in CDOs, a small company called "Triton Partners." I did that for about three years.

Then I joined Wachovia, where I was there for probably two and a half years.

And then I worked in a small fixed-income

broker/dealer and investment banking boutique called "R.W. Pressprich."

And I'm from Chile. I came back to Chile in January and now I'm a professor of finance at the University of Chile. I'm the director of the financial center here. We're establishing a finance center at the University of Chile, and I've been here since the beginning of March.

That's really my work history in the U.S.

MR. BUBB: Can you just repeat for us again what years were you at Moody's and what were your titles --

MR. MCWILLIAMS: He was at Moody's March -- it was 1996 through September 1999.

MR. CIFUENTES: I joined Moody's at the beginning of '96, January '96, and I worked there until either September or October of 1999.

MR. MCWILLIAMS: What were your titles there, Mr. -- Dr. Cifuentes?

MR. CIFUENTES: I got started as a senior analyst and then I received a number of promotions and then I left as a senior vice president.

MR. BUBB: And in which group did you work?

MR. MCWILLIAMS: Which group did you work in?

MR. CIFUENTES: At that time, it was the CDO

group. But at the time, I think it had a different name. It was called “derivatives” or something like that, but essentially I was part of the CDO group.

MR. BUBB: Great. And I would like to ask you a few questions about the models used by Moody’s to rate collateralized debt obligations.

MR. CIFUENTES: Uh-huh.

MR. BUBB: Let’s begin with the bilateral –- binomial expansion technique.

MR. CIFUENTES: Yes.

MR. BUBB: A crucial part of that methodology is the calculation of the diversity scores. Can --

MR. CIFUENTES: Bruce, I missed everything. I mean, could you ---

MR. MCWILLIAMS: Okay. I’m sorry. Yes, he’s asking about the binomial-expansion technique and, in particular, about the diversity scores.

MR. CIFUENTES: Yes.

MR. BUBB: And what I’d like to ask is, could you explain for us how the correlation assumptions were arrived at, which were used in calculating diversity scores for use in the models?

MR. CIFUENTES: Okay. Yes, well, first of all, the rationale behind the diversity score is to deal with something which is very complex, which is called

correlation. So you have a pool of assets in general.

Let me give you an example. Let's say you have ten assets or ten bonds. If the correlation is very high, it means they behave like one. If the correlation is very low, they behave as ten independent assets, yes.

So in every real pool you will have some degree of correlation in default behind the diversity score was to represent, in a simplified fashion, what you have in real life, which is some correlation which is between zero and one, or 100 percent.

MR. MCWILLIAMS: Ryan, can you understand all this?

MR. BUBB: Yes.

MR. MCWILLIAMS: Okay.

MR. CIFUENTES: Yes.

MR. MCWILLIAMS: Okay, go on.

MR. CIFUENTES: So, for example, let's say for the sake of argument that we have a portfolio of 50 assets. Now, if the correlation is very low, it means that for all practical purposes that you have 50 assets that behave in a really independent fashion. If the correlation is very high, it's like having one even though you have actually 50.

And the diversity score was really a numerical

trick. I don't use the word *"trick"* here in a negative fashion. I mean, it's –- it was a numerical technique to simplify to make a simplification in order to model that more easily.

And the assumption behind the diversity score was that when you had two assets in the same industry, they will be highly correlated and the assumption, I think, was that the correlation was around 17 or 16 percent.

And the other assumption was that if you had two different assets in two different industries –-

MR. MCWILLIAMS: I'm sorry. If you had how many different assets? Two?

MR. CIFUENTES: Yes. Typically, you have to take two so there's two possibilities; right?

If I have two assets, there are two possibilities. They are either in the same industry. In that case, they are highly correlated. That is the assumption.

Or they are in different industries. And the assumption was that if they were in different industries, the correlation was zero for modeling purposes.

So based on that assumption you could calculate something called the diversity score and then

you use it for this binomial-expansion technique. But that's the way it was done.

And the implicit assumption behind the diversity score, it's roughly -– this is not a clear-cut thing, I mean it's not sort of a black-and-white kind of thing –- the assumption behind the diversity score was that the correlation was around 16 or 17 percent when you had two assets in the same industry.

MR. BUBB: And where did that assumption come from? What was the basis for that correlation assumption?

MR. MCWILLIAMS: He's asking where does that assumption come from?

MR. CIFUENTES: Yes, that assumption came –- that's –- that assumption had been done at Moody's actually before I got there. But the assumption was done –- I never really saw any -- the actual data –- but don't take that to mean that it was done in a –- kind of a non-*[unintelligible]* fashion. That analysis had been done before I arrived at Moody's. And I believe that it was done based on information that they had on defaults.

Now, being more pragmatical, I'm considering that probably they didn't have all the data that they normally would have liked to have. I mean, I have to assume that they probably made some conservative

assumptions, but the important thing -– and this the relevant key point here -– is that the assumptions behind the diversity score, they served Moody's very, very well *[unintelligible]* of that. I mean, many of the CDOs that were analyzed using those assumptions for the most part, did fairly well.

Or to put it more precisely –-

MS. SHAFER: But those were corporate deals?

MR. CIFUENTES: Pardon me?

MS. SHAFER: Corporate.

MR. CIFUENTES: Yes and no, actually -– well, initially, the diversity score was designed using corporate data, but later was used for another kind of transaction. For example, we used it for emerging-market deals, something in which Moody's didn't have a lot of data, only some people *[unintelligible]* market, nobody did.

And we adapted the diversity score for emerging-market deals and those transactions did very, very well actually, yes.

MR. BUBB: You know, I understand that there was an original diversity score, and the Moody's came up with a new approach which at one point was called the "alternative diversity score," I think that's what it was called.

Can you tell us more about that change in how the diversity score was calculated?

MR. CIFUENTES: Bruce, could you –- I missed that again.

MR. MCWILLIAMS: Well, he's saying that at some point there was a new diversity score called the "Moody's alternative diversity score," and he would like to know --

MR. CIFUENTES: No. Actually, there was no –- no, no. There was no diversity score. There were new correlations.

Let me explain what that means, yes.

The diversity score is really a proxy to deal with correlation, yes.

So behind the diversity score, there are certain assumptions regarding correlations, which as I said has to do with degree to which things tend to happen at the same time.

So behind the diversity score, we just talk about there were certain assumptions regarding correlation. Later, Moody's, after I had left actually, they released those assumptions regarding correlation and they made them more forgiving, yes.

MR. BUBB: When was that?

MR. CIFUENTES: They made the assumptions

regarding correlation more forgiving, more relaxed.

MR. MCWILLIAMS: When was that?

MR. CIFUENTES: I cannot really tell you exactly because I had left at that time. And it probably was a sequence of things as opposed to one, but that thing happened in –- if my memory serves me right –- say, in the period of 2001 and 2005, around that time frame, I mean, yes.

MR. BUBB: And are you –-

MR. CIFUENTES: And what do you –-

MR. MCWILLIAMS: Time frame?

MR. CIFUENTES: Pardon me?

MR. BUBB: Please go ahead.

MR. CIFUENTES: Bruce?

MR. MCWILLIAMS: Hi. Go ahead, he said.

Ryan, he said 2001 to 2005. He wasn't sure when they –-

MR. BUBB: And I think he --

MR. CIFUENTES: What actually happened was, this was not the one single event that you could point to one particular day, because what really happened at that time -– I mean, it really has to do with the way the CDO market evolved. Different transactions were being done at the same time, each one incorporating new kinds of assets and things like that.

So rather than a single change, I think it was more like a sequence of reevaluations of the assumptions regarding correlation.

MR. MCWILLIAMS: Did you hear that, Ryan?

MR. BUBB: Yes.

And do you know what drove that change in assumptions? Why Moody's decided to change these over that period?

MR. CIFUENTES: If I understood correctly, you're asking me why did Moody's change those assumptions; right?

MR. MCWILLIAMS: Correct.

MR. BUBB: Right.

MR. CIFUENTES: Well, I cannot really tell you because you're asking me –- I mean, it's a very good question, but you're asking me to make assumptions as to *[unintelligible]* and the motivation for certain people's action, so I don't -- I mean, I can give you a technical opinion, but that would be to judge somebody's intentions.

I cannot tell you why they changed it. What I can tell you is that, based on what I have seen, the assumptions were a little bit more forgiving.

MR. MCWILLIAMS: Ryan, he said the model --

MR. CIFUENTES: The model.

MR. MCWILLIAMS: Okay, the model is more forgiving.

MR. BUBB: Were they more accurate or less accurate?

MR. MCWILLIAMS: He's asking if they were more accurate or less accurate?

MR. CIFUENTES: Well, that's not really –- no, I stay with my original statement, I think the assumptions were more forgiving, I mean less conservative, yes. Whether that is accurate or not, is a different consideration, but I think the assumptions were relaxed, that's what I –- the assumptions that were introduced in that time period, they were more forgiving than the assumptions that were being used ante to 2001. Particularly regarding certain transactions. I mean, it didn't affect all the CDOs. It only affected certain kinds of CDOs.

MR. BUBB: Which kinds of CDOs?

MR. MCWILLIAMS: He said, what kinds of CDOs?

MR. CIFUENTES: It affected mostly, if my memory serves me right, I think it was mostly –- initially it was a CDOs of ABS and synthetic CDOs, particularly investment-grade synthetic CDOs. I think those two kind of CDOs were the ones that were mostly affected by the new correlation assumptions.

MR. BUBB: In 2005, Moody's adopted a Gaussian copula approach to modeling default correlation that was implemented in software called the "CDO ROM software." This is a different change than the one you've been talking about.

Is that correct?

MR. CIFUENTES: You know, the Gaussian copula is something completely different.

The Gaussian copula, there are two things here. At the risk of sounding very technical, but I think it's important to get this right, yes.

The correlation assumptions are one thing. Now, once you have certain assumptions in with the correlation, then you have to use that to do some modeling. And Moody's changed from the binomial expansion, which was one technique that they used for all the deals when I was there, they changed and they adopted the Gaussian, the Montecarlo with the Gaussian copula for certain deals probably around –- I think they probably arrived, 2004, 2005, yes.

So the Gaussian copula actually has nothing to do with the correlation. It's a different tool. So the Gaussian copula is really a modeling technique that was used in conjunction with the new correlation assumptions. But the two things are different.

MR. BUBB: My understanding of how the Gaussian copula approach works is it relies on asset correlation --

MR. CIFUENTES: That's correct.

MR. BUBB: -- on the model –- the model default correlation.

And so the move to the Gaussian copula technique necessitated a change in the correlation assumptions as well, in the sense that they had to actually had to find asset-correlation data whereas under the binomial-expansion technique, they started out with default correlations as the primitive in the model.

Is this right?

MR. CIFUENTES: You have done your homework very carefully, I can see.

MR. BUBB: I should tell you, I am an economist, Dr. Cifuentes, and I --

MR. CIFUENTES: No, no. You are right. And let me –- I'll give you some color on that, and if I bore you with the details, let me know, yes.

The diversity score on the old binomial method are based on default correlation.

I *[unintelligible]* use the word "correlation" without actually specifying which kind of correlation.

The diversity score and the binomial method

are based on the default correlation. If you use the Gaussian copula, actually the Gaussian copula before you use it, you have to make an assumption of something called “asset correlation” which is slightly different, yes. I mean, it’s not the same thing; it’s not completely different, yes.

And when Moody’s changed from the diversity score to these correlation assumptions where they would be relaxed and then the Montecarlo, they switched from default correlation to asset correlation. And at that point was when they relaxed the correlations regarding assumptions were used.

To be more clear, when the new asset correlations were adopted, if you were to transform them to default correlations and compare them with the diversity score, you would see that, in general, they were a little more relaxed.

The comparison is not obvious because it is not very straightforward to make a comparison between asset correlation and default correlation. They are a little bit different. So you would have to look at the assumption internally, asset correlation, see what could be the equivalent in terms of default correlation and then compare that to the old assumptions and the default correlation.

MR. MCWILLIAMS: Let me ask you a question, as one of the non-economist, non-lawyer people, a default correlation means that the defaults somehow are correlated together of the assets, as the price of the asset rises or falls together? Is that the distinction?

MR. CIFUENTES: Okay, default correlation refers to the correlation in terms of the default parts, yes. Default, actually, when you have an asset it might default or it doesn't default. So you can take it as a zero one kind of thing.

So you look at the correlation between the default parts. It's basically it something that's called a random variable that can take a value that is equal to a zero or one. That's the default correlation.

The asset correlation is really a modeling trick that people use because it is really difficult to look at default correlation actually because defaults do not happen very often actually, yes.

I mean, asset correlation is something that allegedly is more easily observable and it's sort of like a normal distribution, so that's really the asset correlation, yes.

It's very difficult to say from a practical point of view, what is the actual manifestation of asset correlation. And in my opinion, that's one of problems

with the modeling. I mean, it's really difficult to grasp what it means from a practical point of view.

It's more or less inspired on the model than this guy Merton created, which I think I have some misgivings about that problem, but that's a mathematical consideration. But the two things are sort of similar but a little big different, yes.

The only thing, and I am –- I'm just going to make one point here to point out to what the problem could be without getting too mathematical into the stuff, into the math of it. But if you're dealing with default correlation, the default correlation, it is always the same. It doesn't depend on anything. If you're making assumptions regarding default correlation, it's going to be the same regardless of whether the portfolio, it's a very good quality or a very bad quality. It's the same for a AAA portfolio and a portfolio that is junk bonds.

The asset correlation, if you were to translate the default correlation into asset correlation, the asset correlation depends on some of the quality of assets and the probability of default. So that's why in general you end up having very low correlations for AAA and AA assets, which I think it was one of the problems behind the synthetic CDOs and the

bad performance that they had, yes. That that correlation assumptions were very, very low.

Now, if you really want to get into that –- which it seems like you have been following the topic quite closely -- I got it from your question -– I can send you a paper that I wrote with a colleague of mine three years ago basically saying that the Gaussian copula was a piece of crap.

No, no. I mean, I'm not making that statement lightly actually. I think it has a serious theoretical flaw and the point we made in that paper, which was very difficult to publish because we had a lot of antagonistic views about that. But it basically says that there is a very –- there is a conceptual problem with the Gaussian copula when it comes to modeling credit portfolios and as a result of that, most of the modeling stuff, it's really trash if you use the Gaussian copula, yes.

And we published that paper probably in 2007; and we did the work in 2006, yes.

I can send you the paper if you want to take a look at it, or you just want to look at the conclusion, but…

MR. MCWILLIAMS: Please do. I'll pass that out and forward it to everybody.

MS. SHAFER: Bruce?

MR. MCWILLIAMS: Yes.

MS. SHAFER: I sent you by e-mail some questions to ask.

Do you have access to e-mail while you're on the phone?

MR. MCWILLIAMS: I think so.

MS. SHAFER: I thought you could just read them, once Ryan has gone through his.

MR. MCWILLIAMS: Okay.

Go on, Ryan.

MR. BUBB: Yes, so --

MR. CIFUENTES: Well, what I was saying is that -– remember, I cannot hear either Kim or Ryan, but I can e-mail you that paper if you want. I mean, you probably want to skip the math, but just look at the conclusions there. It might be interesting to take a look at.

MR. BUBB: Yes, please. That would be great.

MR. CIFUENTES: Yes, okay, let me –- hold on a second, let me make a note on the seven things that I had to do before going home today.

E-mail paper to my friends in D.C., okay. Yes.

Okay, go ahead, I'm listening.

MR. BUBB: Now, Moody's published, I think, in 2004 or 2005, a paper describing their approach to using asset correlations within a Gaussian copula framework. The model.

MR. CIFUENTES: Yes, go ahead, that sounds correct. I mean, yes. I think so.

MR. BUBB: So basically, for their measures of asset correlations, they used historical data on ratings transition. What is your view of that way of implementing an asset correlation or that way of deriving or estimating asset correlations?

MR. CIFUENTES: Well, in principle, there is nothing wrong –- well, regarding the data they use, I don't really know because I was not there when the analysis was done and I have not seen the data, yes.

I don't have any problem with using asset correlation. Conceptually, you could do that. The problem is, what's the number you attach to that asset correlation? I mean, if you attach a reasonable number, the results are going to be okay. But having looked at those numbers, my impression was that behind the asset-correlation assumptions they had made, they were very low correlation assumptions. I mean, that's really the bottom line.

MR. BUBB: Is there any good documentation of

the fact that Moody's correlations were too low or were very low or lower than --

MR. CIFUENTES: No, they were low compared to what they –- I mean, correlation is a very difficult thing to estimate and I could argue that nobody has good data on correlation because correlation changes every month, changes as a function of time. I mean, it's a real mess. So when you model correlations, you make a lot of assumptions. I mean, that's the honest truth.

Now, when I say that the correlations were low, I'm not really saying they were -– well, in hindsight you could say, but they were low compared to what they were using before.

MR. BUBB: And how could we document that assertion? What could we point to, or what document could we look at that would back up your claim that the new way of doing things resulted in implied lower default correlations than under the BET?

MR. CIFUENTES: Bruce, you're going to have to rephrase that for me.

MR. MCWILLIAMS: How could –- repeat your question. Ryan, I sort of drifted a little bit.

MR. BUBB: Yup, yup, yup. Stay with me, Bruce.

MR. MCWILLIAMS: I'm with you. I'm there, I'm

there.

MR. BUBB: So, Professor Cifuentes is arguing that the correlation, the implied default correlation under Moody's new Gaussian copula approach were lower than the default correlations they used previously under the BET model.

MR. CIFUENTES: That's correct.

MR. BUBB: If we could document that and had some like strong evidence that was true beyond –- beyond sort of expert opinion, which is very helpful and appreciated, but it would be great to get a paper or a document that lays out that case with evidence.

MR. CIFUENTES: The way to look at that, you know, I have done that in the past on a number of occasions. I mean, I never did anything very formally. I mean I did it when I was –- I mean in the context of many transactions, but I never really wrote any formal document regarding that or anything like that.

I remember having seen –- having done this analysis many times myself and looking at the new correlations and compared that with the old correlations. In fact, the paper that -– the one that I said I was going to e-mail you, that points to –- I mean, I can probably give you -– I can –- what I could do, let me follow it which might be useful for you

because, as I said, this is not something that somebody wrote a name on it or something like that. It's something that you would do the calculation and then, yes, they are very low and you show paper --

MR. MCWILLIAMS: Oh.

[Telephone ringing]

MR. MCWILLIAMS: I'm sorry, what *[unintelligible].*

There, we go.

MR. CIFUENTES: Maybe what I could do is –-

MR. BUBB: Hello?

MR. MCWILLIAMS: Hi. I think I disconnected him. Hold on a second.

Conference.

Hold on a second.

[Dial tone]

MR. MCWILLIAMS: Oh, shoot.

Hi, Ryan?

MR. CIFUENTES: -- you can use there. And you can take a look at that time, by yourselves, yes.

MR. MCWILLIAMS: Hi. Hold on, I've screwed up the phones here. Hold on one second, Dr. Cifuentes. Hold on.

MR. BUBB: I think we're all back now.

MR. MCWILLIAMS: We're all back. Yes. Okay,

that's good. I'm sorry.

MR. BUBB: But we've missed –- we probably missed the last 30 seconds or something, though.

MR. MCWILLIAMS: Yes.

I'm sorry. Repeat that comment.

MR. CIFUENTES: Should I repeat?

MR. MCWILLIAMS: Yes, repeat. I'm sorry. The little microphone we have here kind of fell on the telephone, so…

MR. CIFUENTES: Should I repeat what I said, or –-

MR. MCWILLIAMS: Yes, yes, please.

MR. CIFUENTES: Okay, I told you that I was going to send you an e-mail with a paper that could be useful regarding the Gaussian copula and why it doesn't work. But I'm going to -– maybe I'm going to attach –- I can attach a brief comment there explaining to you why I came to the conclusion that the new correlations were very low compared to the old ones and I can point out to a couple of figures there you can see that, yes.

MR. BUBB: That would be great.

MR. MCWILLIAMS: Okay. Do you --

MR. CIFUENTES: Okay, so let me make a note of that.

Hold on, and let me write that down.

Correlations are low.

Yes, okay.

MR. MCWILLIAMS: Do you know of anybody that has done any more recent work?

MR. CIFUENTES: Regarding this topic?

MR. MCWILLIAMS: Yes, I mean the effects looser standard -– I mean, using the different models and the lower correlations --

MR. CIFUENTES: Well, the -– I mean, the correlation –- as I said, the correlation you didn't know when it's right or wrong because it's very difficult to make. You judge by the consequences. It's quite obvious right now that the correlation assumptions were relaxed because –-

MR. MCWILLIAMS: Wait, hold on -–

MR. CIFUENTES: -- of the lousy performance.

MR. MCWILLIAMS: Dr. Cifuentes, hold on one second.

Are you there, Ryan, still?

MR. BUBB: Yup.

MR. MCWILLIAMS: Okay, I got something -– I don't know what's going on here.

Go on, continue. Sorry.

MR. CIFUENTES: So what I was saying that, correlation is very difficult to measure. When you look

back and you see the sorry performance some of the AAA, the AA transactions, you come to the realization that those correlations actually really pretty bad, yes.

Also, when the –- if you can look -– you can look at what the rating agencies have done recently, I mean, after the subprime disaster, they have changed their correlation assumptions dramatically like a number that was two and a half became seven or something like that, yes.

So that also gives you a sense that maybe they didn't even know what they were doing, because when you introduce such dramatic changes regarding certain numbers, it doesn't give you the feeling that they were based on anything very solid.

MR. MCWILLIAMS: Okay.

MR. BUBB: That's true.

MR. MCWILLIAMS: And then, Ryan –-

MR. BUBB: Another model that was introduced around the same time as the Gaussian copula, was adopted by Moody's is called the "correlated binomial method," which was devised by Gary Witt, one of your former colleagues at Moody's.

Could you describe for us a bit the correlated binomial method and your evaluation of its performance relative to the older and the binomial expansion

technique?

MR. CIFUENTES: Bruce, can you repeat that?

MR. MCWILLIAMS: He was asking, there was another model created by Gary Witt called the "correlated binomial method," and --

MR. CIFUENTES: Yes, okay.

MR. MCWILLIAMS: -- he's asking about, how does that compare to these two other models.

MR. CIFUENTES: Well, again, it's only in the assumptions, right?

The correlated binomial conceptually there is nothing wrong with it. It's just a more efficient, a cheap way, numerically cheap of doing the Montecarlo simulation. The problem is –- the potential problem could be, what are the correlation assumptions you use there?

I think and I'm not positive here, but I think that by the time the correlated binomial was adopted, the forgiving assumptions on correlations have been already introduced. That's my impression.

MR. BUBB: That's my impression as well.

MR. MCWILLIAMS: Did you understand that?

MS. AHMED: No.

MR. MCWILLIAMS: I'm sorry. Professor, could you repeat the last half a sentence. We, here in

Washington, didn't get that.

MR. CIFUENTES: Sure. What I was saying --

MR. MCWILLIAMS: By the time correlated binomial method was adopted, and then --

MR. CIFUENTES: My impression is that by the time the correlated assumption -– the correlated binomial was introduced, the more forgiving assumptions in correlations had already been introduced.

MR. MCWILLIAMS: Okay.

MR. CIFUENTES: That's my impression. I mean, I'm –- I don't remember it exactly. But that seems to be the case.

MR. MCWILLIAMS: Ryan, any more questions?

MR. BUBB: So, one thing that we're having trouble understanding is the decision process within Moody's for changing methodologies, whether in changing assumption or in changing the way the model have themselves worked.

Can you explain to us how methodological decisions were made within the CDO group during your tenure at Moody's?

MR. CIFUENTES: Bruce?

MR. MCWILLIAMS: Hi. Yes, besides the –- I guess, how were Moody's –- how were rating changes decided? What was the process, the committees and such?

Is that right?

MS. AHMED: Uh-uh.

MR. MCWILLIAMS: I'm sorry. Wait, I didn't get that right.

MR. CIFUENTES: Yes, so –-

MR. MCWILLIAMS: Hold on one second.

Shaista?

MS. AHMED: Ryan wants to know, what was decision-making process of changing assumptions in models during your tenure? What was –- generally, how were the methodological decisions made, Professor?

MR. MCWILLIAMS: Did you hear that?

MR. CIFUENTES: Do we have somebody –- we have somebody else on the line also now?

MR. MCWILLIAMS: That's Shaista Ahmed. She's one of our researchers here.

MR. CIFUENTES: Yes.

MR. MCWILLIAMS: The question that was asked was, how were changes in assumptions made? How were the methodological changes? What, were there committees, or did one person decide or what –- what was the process during your tenure?

MR. CIFUENTES: You're asking me something that I –- I mean, I cannot really comment how Moody's made decisions. I mean, remember, I left in 1999. The

process by which they made decisions after I left, I mean, I cannot really comment on that.

MR. MCWILLIAMS: Okay.

MR. BUBB: Well, how about during your tenure, when you were there, what was the process in place?

MR. CIFUENTES: When I was there, the process was very much a rational process, inspired more or less by an academic and *[unintelligible].* If I was to get things right and in the absence of data -– which is something you often have in real life --- would make conservative assumptions, yes.

So, when I was there, the CDO group was very small, and all the decisions -– modeling decisions and things like that, we made were inspired by the desire to get things right. I mean, that was really the way it was done.

What happened after I left, I think I cannot comment on that.

Most of the things that we're talking about here, I think that happened in, say, between 2001 and 2005, probably.

MR. MCWILLIAMS: Okay.

Ryan?

MR. BUBB: I just have one last question which is, Dr. Cifuentes, what –- how would you describe why

structured finance products rating performed so poorly in the sense that transition downgrades happened in much higher frequencies than for other kinds of products with similar ratings? What is your view of what went wrong?

MR. MCWILLIAMS: Did you understand that, Dr. Fuentes –- Dr. Cifuentes.

MR. CIFUENTES: No, I couldn't hear a thing.

MR. MCWILLIAMS: He said --

MR. CIFUENTES: I'll probably understand it, but I have to hear you first.

MR. MCWILLIAMS: So, yes. He said, why did thing go so bad or wrong in the structured finance area? What about –- what was your opinion about why things sort of went wrong as opposed to some of the other areas in Moody's?

MR. CIFUENTES: You're talking about Moody's or in general?

MR. BUBB: No. Specifically about the ratings or why –-

MR. MCWILLIAMS: About the ratings. About the ratings.

At Moody's or in general, Ryan?

MR. BUBB: I want to be precise here, so try to capture what I'm saying, and then relate it, if you could, Bruce –- sorry that you're the middle man -- so

the question is: Ratings of structured products by Moody's and by it's competitors ended up performing poorly. And by that I mean --

MR. CIFUENTES: Yes, okay.

MR. BUBB: -- the default rate were much higher than for similarly rated assets in other sectors -- for example, corporate bonds.

What is his view of why that happened? Why were the ratings --

MR. CIFUENTES: There is –- there are two ways to answer your question, yes.

So you're asking me why the structured products rating performed so lousy compared to other ratings; right?

MR. BUBB: Yes.

MR. CIFUENTES: The short answer to your question is that the assumptions behind the models that were used to analyze them were very, very forgiving and probably they rely on very bad data. I mean, that would be the short answer, yes.

Now, a more profound answer to what you're asking me is why that had happened, yes. And, well, perhaps you can only speculate, maybe the fact that there were market-share considerations came into the picture, yes.

MR. BUBB: And why do you think that? What is the basis for your view that market-share considerations --

MR. CIFUENTES: Well, my basis is that, I attended last week -- I spent a week in Washington, D.C., with a subcommittee investigating the rating agency and I was able to look at the number of documents that you've probably seen and *[unintelligible]* the statement from Senator Carl Levin, and it should be really clear; right? Which I'm sure you have so…

MR. BUBB: Yes. No, I agree.

I was hoping you had independent data, but our source is the same.

MR. CIFUENTES: No, I would say really it's difficult to have a -– I don't want to say "independent" but I could say that any reasonable person who looks at these would come more or less to the same conclusion that market share played a relevant consideration in certain business decisions.

MR. BUBB: This is super helpful.

Kim, do you want to take over your line of –-

MR. MCWILLIAMS: Yes, I'm sorry. Kim, I'm sorry, I looked through my e-mails while we were chatting. I couldn't find –- I saw a lot of e-mails, but I don't see one with any questions on it, from you.

Kim?

MR. BUBB: Oh, Kim? Did we lose you?

MR. MCWILLIAMS: Maybe we lost Kim.

MS. AHMED: Maybe that's Kim.

MS. SHAFER: No, I put it on mute --

MR. MCWILLIAMS: Okay.

MS. SHAFER: -- because my beautiful daughter came home.

I'm working at home.

MR. CIFUENTES: So you guys are all in different places right now; right?

MS. SHAFER: We are. We are. I'm so sorry, Arturo.

MR. CIFUENTES: Maybe we should have a conversation with all of you in the same room.

MR. MCWILLIAMS: Someone is in Chicago. Someone is in New York. Someone is in Washington, so…

MS. SHAFER: We were eager to speak with you sooner rather than later.

MR. CIFUENTES: That's all right. That's all right.

MS. SHAFER: Bruce, I sent you an e-mail at 3:21.

MR. MCWILLIAMS: 3:21, okay?

Yes, I'm not getting them for some reason.

MS. SHAFER: Okay.

MR. MCWILLIAMS: I'm trying –- I'm checking. Here we go –- oh, now.

MS. SHAFER: If we use the Ryan technique, first, Arturo, I read your testimony --

MR. CIFUENTES: Uh-huh.

MS. SHAFER: -- which my opinion is that it was excellent. Thank you.

MR. CIFUENTES: Thank you.

MS. SHAFER: What could the rating agencies –- or what should the rating agencies have done about the garbage-in problem about the misstatements of data?

MR. CIFUENTES: Well, I mean -- that's a very open-ended question.

MS. SHAFER: Yes.

MR. CIFUENTES: I mean, they should have been more careful with what they did. But now, if we're talking about the rating agencies, I mean, I think I got it that your general concern is about rating agencies at this point; right?

MR. MCWILLIAMS: Yes.

MR. CIFUENTES: I think it is a problem which is much more profound then the problem that we're talking about here with the rating agencies. We're talking about the ratings not being very accurate, that

AAA that didn't perform, et cetera, et cetera, yes.

But I think there is problem that is, in my opinion, much more profound and it covers *[unintelligible]* in importance everything we have talked about here, which is the following, yes:

The rating agencies can issue ratings. Fine. I mean, they did it really poorly, but that's okay. The rating agencies are supposed to issue ratings.

I think the more serious problem here is that Congress, without being aware of this, actually Congress gave the rating agencies the right to legislate. I think that is probably at the root of all the problems we are seeing right now. Everything else we have talked about here is completely irrelevant. The only problem, the most important one is not who pays for ratings, who is getting fees, the complexity, nothing, yes. I think the most important thing is that Congress gave the rating agencies inadvertently the right to legislate.

And I'm going to explain to you why is that and why so serious.

Because the rating agencies now can issue ratings; right? They can tell you if something is AAA or B, or BBB or whatever.

At the same time, Congress or the regulators, for the matter, never decide -– never defined what

should BBB means or what AAA means. So the rating agencies control that, and to the extent that they can change that –- and actually they have done that in the past –- they can really change the regulatory framework any time they want. And that has gone unnoticed. I think that is by far the most serious problem here.

And If you want, we're finishing a white paper right now, which I'm going to –- I have to send on Friday to the office of Senator Levin. This is not a secret or anything like that. I would be happy to send you a copy when it's ready. It's almost ready. But --

MS. SHAFER: We'd appreciate it.

MR. CIFUENTES: -- if you're concerned about anything, something to do with the rating agencies, in my view, that's the first thing you have to look at. Everything else is completely immaterial, yes.

MR. MCWILLIAMS: Okay.

Kim?

MR. CIFUENTES: I'm not sure where –-

MR. MCWILLIAMS: Oh, shoot.

Kim?

[Dial tone]

MR. MCWILLIAMS: Kim? Hello?

Hello? Hello?

MS. SHAFER: -- for 2008 --

MR. MCWILLIAMS: Hi. I'm sorry. I think I cut off, Dr. Cifuentes.

Hello?

MR. CIFUENTES: No, that's correct.

MR. MCWILLIAMS: Oh, no. Everyone is here.

MR. CIFUENTES: You're right, Kim. That's completely right.

MR. MCWILLIAMS: Everybody is here. They're talking to each other.

MS. SHAFER: Okay, okay. You see, I try to do my homework, too.

MR. CIFUENTES: Kim, I'm really impressed by you. You read everything, yes.

MR. MCWILLIAMS: I'm sorry. I'm sorry. We cut out on the --

MR. CIFUENTES: You did your homework quite well.

MS. SHAFER: So but I still have some questions about the rating agencies getting things wrong.

MR. CIFUENTES: Sure.

MS. SHAFER: And for a point of comparison, they got it wrong maybe in CMBS -- I haven't looked at the data -- but they didn't get it as wildly wrong.

Have you spent any time thinking about

comparisons of other sets of ratings where they got it wrong, but not so badly.

MR. CIFUENTES: Can you repeat that, Bruce, because I missed about half of the –- half of Kim's question?

MR. MCWILLIAMS: She said about commercial –- commercial mortgage-backed securities, why they didn't fare as poorly –- why they fared better than the residential mortgage-backed securities?

MS. SHAFER: Why the rating agencies --

MR. CIFUENTES: Well, they *[unintelligible].* I cannot really say. Maybe there was less fraud there or they became more careful at that point. I mean, I can only speculate there. But clearly, there was much more fraud in the residential mortgage.

MS. SHAFER: Right.

MR. CIFUENTES: And as far as I know, they didn't do a really good job at looking at the data, but they refined the data supplied by bankers probably the commercial sector, that came later, yes.

MS. SHAFER: You referred to Doug Lucas. I know his name. I don't really know him.

Would you suggest that we speak with him, and interview him?

MR. CIFUENTES: I mean, Douglas Lucas is a

fairly sharp and honest guy. I mean, I have a great deal of respect for him and I have known him for many years. He's a very reasonable and thoughtful guy.

It would be useful to talk to him in whatever capacity you want to talk to him. I think he was the head of CDO Research at UBS and worked at Moody's for a while.

I think that he's worked at Moody's three times actually. I think he goes there, quits. Comes back, quits. And I think he's now in the third iteration, something like that.

MR. MCWILLIAMS: So he works there now, currently?

MS. SHAFER: Yes.

MR. CIFUENTES: He used to work there and left.

MS. SHAFER: Okay.

MR. CIFUENTES: Then came back and left. And now I believe it's -– he's back at Moody's; right?

MS. SHAFER: Okay. Arturo, I have –- for this round, I have one more question.

MR. CIFUENTES: Sure.

MS. SHAFER: It seems that there are a few critics, but not many, of models of data; but that there's no –- there's no counter checks. There's no

active criticism of the quality of the rating agency –- of the rating.

And so part of the problem is that whatever critics are there don't get heard for whatever improvements.

You know, the dealers only want looser standards. They only want more leverage.

So have you thought about that dynamic?

MR. CIFUENTES: Bruce, again, I missed half of the statement. You have to repeat for me.

MR. MCWILLIAMS: Well, she said there is no quality of ratings or the rating agencies.

I'm not sure exactly –-

MS. SHAFER: Bruce? Bruce, you didn't get my e-mail?

MR. MCWILLIAMS: No, I still haven't got the e-mail.

So her concern is that, I think –- I'm not sure exactly if I understood it right -– but do the rating agencies themselves get rated?

MS. SHAFER: No. That's not the question.

MR. MCWILLIAMS: Okay.

MR. CIFUENTES: The SEC is supposed to do that, but clearly they don't and I'm going to point to another problem there is the flaw in the legislation

which is created by Congress. I mean, S&P and Moody's were given a gift by Congress because when they passed the Rating Agency Act, I believe in 2006 or 2007, *[unintelligible],* I mean, it says that if you want to start a new rating agency, you need a three-year waiting period issuing rating before you can apply, so --

MR. MCWILLIAMS: I'm sorry, your e-mail did show up to me, Kim.

Which question? Let's see, I've got six questions here.

MS. SHAFER: Five.

MS. AHMED: Five.

MR. MCWILLIAMS: Okay.

MS. SHAFER: Five.

MR. MCWILLIAMS: I'm trying, that last question was, were there critics of the models? That question?

MS. SHAFER: Yes, please.

MR. MCWILLIAMS: Were there critics of the models of the data that were not heard? Who had an incent to increase the quality of the models or the data?

MR. CIFUENTES: You mean, somebody to check the quality of data or the models?

MR. MCWILLIAMS: I think there's –-

MS. SHAFER: In the system, in the broad system, no one really had an incentive to improve the quality.

MR. CIFUENTES: You mean, the quality of the ratings?

MS. SHAFER: The quality of the ratings or the quality of the inputs into the ratings. There was no –- it seems to me, no one had an incentive to improve the quality. The dealers had the incentive to diminish the quality because they wanted more leverage. So the -- unless you had a very strong internal set of controls at a rating agency, there was no -– all the incentives were in the wrong directions.

MR. CIFUENTES: And particularly the ones created by the Congress because, as I said, the rating agencies were given a fair deal of protections so there was no –- if there was a penalty for -– let’s say for the sake of argument that a rating agency saw a potential for losing business in case their ratings were really wrong, I mean, you could argue that in that case they would have been more careful with what they were doing, right, because they could they lose their license and then they go out of business; right?

But since Congress basically gave them a monopoly to Moody’s and S&P, why bother; right?

MS. SHAFER: Okay.

MR. CIFUENTES: I mean, you have to really think about the amount of the protection that the rating agencies have been given. I mean, it's such a tremendous amount of protection and the *[unintelligible]* to entry into the business is so high, so that why bother to even do a good job. I mean, you could keep issuing ratings forever and ever.

Think about this. This whole disaster happened more than two and a half years ago, and Moody's and S&P are still making money issuing ratings.

I mean, why bother? You know, what's the incentive to doing *[unintelligible]* when if you're doing that wrong and you're still in business?

MR. MCWILLIAMS: That's a good point.

MR. CIFUENTES: Huh?

MR. MCWILLIAMS: That's a good point.

Kim, the last question here? I should read it?

MS. SHAFER: It's okay. Skip the others.

MR. MCWILLIAMS: Okay.

MS. SHAFER: Arturo, we may want to follow up again, when we are all in the same room and communication is easier.

MR. CIFUENTES: That would be great. I'm

looking forward to that. I'm looking forward to having another conversation with you all in the same room.

MS. SHAFER: Okay, that sounds good. All right.

MR. MCWILLIAMS: Okay, thank you very much.

MS. SHAFER: Okay, thanks, Arturo. Thank you so much.

MR. MCWILLIAMS: Okay, thank you very much, Professor.

Bye, Kim.

MR. CIFUENTES: No problem. Very nice talking to you.

Don't call me "Professor," Bruce. Just call me "Arturo."

MR. MCWILLIAMS: Okay, Arturo. Thank you very much. Thank you.

MR. CIFUENTES: Okay. Nice talking to you. Bye-bye. Take care.

(End of interview with Arturo Cifuentes)

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