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### FCIC memo of staff interview with Greg Lippmann, Deutsche Bank

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**Greg Lippman, Mortgage Trading at Deutsche Bank**

MEMORANDUM FOR THE RECORD (MFR)

May 20, 2010

INTERVIEWER: Dixie Noonan and Kim Leslie Shafer (KLS), who prepared MFR

LOCATION: Offices of Paul Weiss in NYC

NON-FCIC PARTICIPANTS: Greg Lippman; Walter Riccardi and others of Paul Weiss, counsel to Deutsche Bank (DB)

SUMMARY OF INTERVIEW:

*Your professional background?*

*CDO Trading:*

*August 2005 – ability to go short:*

“The development of the CDS contracts created for the first time really in my career the ability to be either long or short. So whereas for the first ten plus years of my trading, there was no way to be short. You could be really long or less long, but you could only be long. And then when these CDS contracts were created, since you could be short, I thought that it would be an interesting intellectual exercise to examine the securities in more detail than I ever had before and that I think, then, most people in the business ever had before.

So what I was aware of about the securities is that, given the nature of the loans--most of the loans being what's called 2/28 loans, fixed at a low rate of interest for two years and then stepping up to LIBOR plus 600 basis points after that--it seemed likely that the loans would be refinanced shortly after that two-year period, to the extent that they could be. And to the extent that they couldn't be refinanced, some people might default. So when I looked at it from that perspective, I felt that the duration of the investment, whether you were long or short, it would be relatively short, meaning that in two to four years, the trade would pay off in full, or it would not pay off in full, in terms of investors would get back par if they had bought these securities.

When I looked--with Eugene's help--when I looked at the home prices to defaults across America, I was struck by two things; one, the big difference between the default rate in the parts of the United States where home prices were going up three or four percent per annum, and the much, much lower default rate in places where home prices were going up more like 12 or 13 percent per annum. I was also surprised at how many people were defaulting even in those areas where home prices were going up so much, which made me question the viability of these loans in a more modest home price environment.

**So when I looked at the duration of the investment, being relatively short, two to four years, based on when the loans would be refinanced, and the possibility that if home prices began to moderate in some of**

**the high home-price-performing states, it seemed that when you overlay that with how small the tranches were--these BBB tranches tended to be about 1 percent of the capital structure of a securitization--it seemed that, to the extent that home prices went up three or four percent per annum in some of the previously very-robust housing markets, there was a distinct possibility that these securities, these BBB securities would receive little to no principal.**

So, in doing the math, if you were to buy these securities, if you were to go long them, you would receive about two percentage points over LIBOR interest for two to four years. As an investor, you would make--I guess that's two percent a year for two years would be four points, and two percent a year for four years would be eight points. You would make four to eight points if the investment were to work out. Or, said another way, if home prices were continue to go up twelve percent per year in California and some of the other states that had experienced robust housing, if home prices were to do that, were to keep going up, you'd make four to eight points. On the other hand, if home prices were to moderate, since these tranches were very thin, the possibility of you losing 50 or even 100 cents on the dollar was very real. ... To be clear, these are sub-prime residential mortgage-backed securities. They weren't prime or Alt-A or option ARMS. We were focused, in the beginning, entirely on sub-prime mortgage securities only. And also, since we talked briefly about CDOs, I want to be clear that this is not about CDOs. This is about sub-prime, predominantly BBB and BBB- securities.

**So in looking at the investment thesis, the long side of this trade pays four to eight points, if it's correct, and it loses 50 to 90 points if it's incorrect. The inverse is the case, to the extent that one was short, if one bought CDS protection, you would make 50 to 80 or 90 points, to the extent that home prices--in my thesis--home prices flattened out. And you would lose four to eight points if home prices did not flatten out. So the payout was somewhere on the neighborhood of ten or even more than ten-to-one.**

And my own view was that, at some point, home prices couldn't continue to go up at 12 percent per annum. The affordability was getting more and more difficult. So this investment, buying protection, shorting home equity mezzanine tranches, as the title of this presentation says, shorting was paying somewhere between no less--depending on your view of what the default rates would be and the timing--was paying somewhere between six and twenty-to-one. Or said in other ways, the investment thesis was: if you believe that there's at least a 30 percent chance that home prices will start to moderate in some of these previously high home price appreciation states, if you thought there was at least a 30 percent chance of that occurring, this was an investment with a fantastic payout.

And so I went to the management of Deutsche Bank, and I gave them a synopsis similar to what we just discussed. And I said that I think that this makes sense because the payout far exceeds the loss when adjusted for the probabilities. **I represented that I thought there was less than a 50 percent chance that this trade would actually work. But I felt that even if it's less than a 50 percent chance of working, if you're getting paid five or ten or even more than ten-to-one, you don't need to actually think it will work for it to be sensible**, particularly when the institution, as a whole, specifically in these products, and then more broadly, was an institution like most Wall Street firms that is biased towards investments doing well. That Deutsche Bank, like all Wall Street firms is positive carry, which means that we have far more investments that succeed if the markets rally than if the markets falter.

Well, roughly speaking, the securities were trading at 200 basis points over LIBOR. So it would mean that if

you were to buy protection, you'd be paying two percent per annum as long as the securities were around. When they paid off in full, if they paid off in full, the trade would end. So your loss would be that two percent for as many years as it took. Alternatively, to the extent that the investments or that the defaults on the underlying mortgages were sufficient to cause losses to these tranches, you would be paid--you would make however percentage of the tranche didn't pay back.

So people had different theories about, first of all, how long it would take. So how many years would you be losing the two percent? Would it be two years, three years or more than that? And on the other hand, how much of the tranche would be recovered in a default scenario? So would you be making--not counting the insurance premiums that you've been paying--would you be making 50 cents, 60 cents, 90 cents, what-have-you? So when you look at the payout of it, it's not like a very clear answer. It is X. The payout is somewhere between four and ten, sort of the insurance premiums that you're paying and the profits that would accrue to you, to the extent there were defaults, would be somewhere between 30 and 90, roughly, depending on--as it turned out, home prices didn't merely moderate, which is what we were investing in that thesis, but rather, they went down a lot, and the recovery of these securities was much closer to zero cents.

Had we had the view that home prices would collapse, there would have been payouts that we could have done where we would've lost like less than one and made 80. So **we weren't actually predicting that home prices would collapse**. Had we had, we would've done something very different. So, for example, the AA tranches, which are now, in many cases, in jeopardy of recovering zero cents, were trading at 10 or 20 basis points. So to have shorted those for four years, you would've lost a half of one point and made the same as what our investment did, where we paid out--now let's just say it's been four years. So we've paid out eight or ten points to make what, if you had shorted the AA, you would've paid out a half of one point. So you would've paid out--so you could've--in theory, for the same amount of dollar amount of losses, you could've invested--you could've made 20 times as much money at the same time.

[Buying protection on the AA was riskier because] You had to believe that home prices were going to go down 20 or 30 percent, which was never something that we contemplated. **We contemplated that home prices would moderate. And so the reason that we focused on the BBB tranches was because it was our belief that home prices up four percent per year, the BBB tranches would sustain losses.**

#### *Development of AB CDS:*

I believe that CDS were being done by a variety of banks in what's called the bespoke basis for many years, which means that there were individualized contracts being created between an investment bank and a client for a long time. But due to the lack of standardization, it was a very small market and one that we were never involved with. There's difficulty in doing non-standard contracts in terms of the fungibility of them. But as the growth of derivatives in other markets continued exponentially, there became more and more talk about, well, if there are derivatives on corporates, why aren't there derivatives on these securities and what not? [Investors were looking to go long and to go short.]

So we began to be asked by customers, would we make markets and derivatives on these securities. And in '05, we were asked by that by a variety of institutional customers. So we began to explore the possibility of it, and we heard that other firms were also exploring the possibility and doing trades. And we would be told by certain institutional customers, "I've just done a trade with this broker dealer or that broker dealer, and this is the CDS contract that we agreed to with them. Would you trade with us on that contract?" So we did some trades on contracts that had been created by a handful of different broker dealers and then felt it

made sense to try to standardize it. [In the middle of 05 representatives from Goldman, Bear Stearns, JP Morgan, Citi and DB met to hash out differences in their contracts.] But as it was reported, the first meetings happened at Deutsche Bank, but I don't know that it makes any sense to say that it was our idea.

I think that towards the end of the process, a variety of other dealers sort of asked to be included, and that would've included, at that time, probably Morgan Stanley, Merrill Lynch, Credit Suisse, Bank of America, perhaps, Lehman. And once sort of the various firms had sort of agreed on language, I think that at some point, it was presented to ISDA as, "This is language that we all support. Is it language that you would endorse?" And I wouldn't have been involved in the presentation to ISDA, so I don't really remember the details.

Our first trades were actually to go long. So when we first got--started doing the trades, we didn't do this in order to be short. We decided to get short afterwards. So when we started working on the standardization, it was late in the first quarter or the second quarter of 2005. We don't decide to get short till October or November of 2005 mainly because it didn't--unless there was a contract, the analysis that we did that made us feel that the payouts of the long versus the short were so skewed, it wasn't an analysis that it would make any sense to do because you couldn't be short before.

So we didn't think about it. We didn't think first, "Oh, it would be great to be short. Let's create these contracts." **In the beginning, we thought it would be great to trade more securities because as a market-maker, the more trades you do, the more money you would make if you can garner the bid-ask spread. So in the beginning, we thought it made sense to trade more things. Only later did we decide that it made sense to be short these.**

*Short related to CDOs:*

I think he [Michael Lewis] referenced a period of time where **the new-issue CDO group put some pressure on me to be shorter than I wanted to be in order for them to do CDOs. ...So that's accurate. ...[That] was in late 2005.** I thought being modestly short was a good idea. In order to complete some new-issue CDO, I think that they--nobody really wanted to short these securities in 2005. So doing a synthetic CDO was difficult if no one would provide the collateral for the CDO. So, whereas, with the benefit of hindsight, being short now seems like a very obvious thing to do, at the time, people thought it was crazy to be short these securities. And so I wanted to be short a certain amount of it, which I felt was sufficient in order for me to keep my job, to the extent that I was wrong, which I thought was quite plausible I was. Again, I went to the bank, and I didn't suggest that it was likely this trade would work. I rather suggested that the payout was far greater than the unlikelihood that it was, right? So I said, "I think that there's a one-third chance that I'm correct, but I'm getting paid \$6." So I went to the bank, and I said, "I think it's unlikely this works, but if it does work, it pays much more." So the bank was comfortable with like a certain amount of cost to that. But the article that you refer to, Michael Lewis, certain people at Deutsche Bank wanted me to be shorter because it enabled them to garner more fees. And no one wanted to be short at the time.

*Who was taking the long position when you started out?*

CDOs, and to some--CDOs, some hedge funds and some mutual funds, predominantly.

*Shift to marketing short position to investors:*

Sometime March or April or late February--I don't remember exactly--of 2006, the trade had gone against

me, in the sense that the price of these securities had risen further. So there was some pressure from management of Deutsche Bank that the trade wasn't really working, and perhaps we should get out. And I had tried to remind them that when we first went with the thesis, we didn't suggest that it was going to work soon. We suggested, in fact, that it probably would never work. But it would take two to four years to know for sure, and we would lose this two percent a year for every year. And then we'd find out.

And their response was, "Well we want to see that there's a certain amount of trading, right. So far, no one in the world seems to think this makes any sense," and "no one" is an exaggeration. But very few people--and obviously, John Paulson, most notably, was one of the people who had a similar view to me at the time. But very few people have this view that buying protection on these tranches makes sense relative to the large number of people who thought selling protection made a tremendous amount of sense. So I think the bank questioned whether it was a sensible thing to do. So they wanted to see that I could have liquidity, that there wasn't just me and John Paulson and, as is reported by Michael Lewis, Dr. Michael Burry, but rather that there were other people. So sort of with that impetus is when we began, in earnest, to talk to people and to update this book every month and whatnot.

*Discussion of mechanics of CDS.*

*Discussion of The Big Short*

Michael Burry didn't convince me--I don't agree that I stole his idea. I think that's absurd. He may perceive it as such.... So he asked us to make markets at some point before the standardized contract came about. We made him markets on the contract that we were using at the time. We did some trades.

**what's curious about this market is whereas in the end of '05 through the middle of '06, it was impossible to find anyone who wanted to buy protection. At some point, it becomes almost the reverse.**

The book is, first and foremost, meant to entertain. So I think there are a lot of things that are exaggerated. So where do you draw the line between inaccurate and exaggerated is--any individual draws that line on their own. ...So I think that that comment where it's attributed to me that I said, "Idiots in Germany buy this," I think it's taken way out of context. It's certainly not something that I led with. I didn't go into people and say, "Well you should buy protection because idiots in Germany are selling protection." That's not how it came about. ...So what I can remember from the book, that's the thing I have the most problem with. I think, in general, it's exaggerated. I would be happy to clarify any specific things in the book that you have any questions about. Well, is this true, or was this exaggerated, or whatever. I'd be happy to respond to that. The only thing I remember today, having read the book three months ago, was that comment.

*Research done by Eugene Xu:*

I was a secondary trader. I never ran the loan-origination group or, and I was never in investment banking that--**so I didn't understand these loans--and maybe that helped me--in a way that a lot of the people understood the loans because they had been more intimately involved** in underwriting guidelines and understanding underwriting guidelines and how these loans were made. I never did that.

So the very first thing I asked him to do was to sort America into quartiles based on home price appreciation and tell me the default rate in each of them. So that's what he did. And we also did the same thing for loss severity. ...so **the first is the incidence of default and the second is the magnitude of the default.** So the first looked at how many people defaulted, based on the home price appreciation in their neighborhood.

And then it was when they default, how much do you--how much is recovered, or how much is lost, reimbursed of the recovery on that? So that was enough for me to be confident that it made sense, given the low cost of buying protection and the potential windfall of the investment in buying protection. So that was enough for me.

Most of the other charts only came about from various hedge funds and other investors that we talked to. As Michael Lewis reports, I spent some time trying to talk to AIG and other investors. So people would say, "Well you're wrong because you didn't look at X, or you didn't look at Y." So then I would have Eugene look at X or look at Y. And **I found nothing that dissuaded me from the single most important factor was home prices.**

*AIG:*

The first was: my trade wasn't working because AIG, in particular, was buying lots of these CDOs. I can say, with all candor, that I thought that if AIG had a lot of trouble, as an American, it wouldn't be a good thing. But I would acknowledge that my primary motivation was to slow the growth of a market that I thought was out of control. But I thought about helping them and not just helping myself, as well, for sure.

My group didn't do any trades with AIG. The CDO new-issue group was selling many of their CDO new-issue AAAs to AIG. So I was aware of that. It was also broadly known that they were the predominant buyer across the Street. ...what I remember distinctly is that I spent a lot of time speaking with AIG sharing this [pitch]book. And my group spent a lot of time doing analysis for them because at first, they said--you know, when I called them up, and I said, "You're getting LIBOR plus 20 basis points, and you might lose half your money. I don't know that this is a smart thing to do and to do so much of." And I remember that they said that I was crazy. You know, they were AAA, and how could you possibly say that? So there was a lot of conversations. [This was] the first quarter of 2006.

And I think--Michael Lewis says I thought I saved the world all by myself, or what-have-you. I think that's what he wrote. I thought that I had convinced AIG to stop buying these, and therefore, that that would work out for me, in the sense that the price of these securities would stop going up and would work out for everyone because people would stop buying them.

*To whom would you market this pitchbook?*

In the beginning, it was to anyone who would listen. Mostly hedge funds would listen, and mostly money managers in insurance companies would laugh at me and say I was crazy. And so they wouldn't listen.

we got short in late '05. And by--our most short we ever were was probably February '07. And then throughout '07, we were becoming less short. So even though this book was still being updated, we were actually reducing our short.

*Interaction with CDO Group:*

So there were times in 2006 and the end of 2005 where the CDO group would come and say, "We are trying to garner a mandate from this CDO manager." And one of the conditions that they had put upon us is that we provide a certain amount of collateral as a show of faith in our belief that it will get done. Since our CDO group isn't market makers in these underlying home equity securities, that wasn't really something that they could provide. The bank didn't give them the authority to go short sub-prime or what-have-you or make

markets in securities. They're a new issue function. So they would come to my desk and say, "We're hoping to get this mandate. If you would provide," in my example, "200 million, we think we can get the mandate instead of one of our competitors." So we provided that. So it came from them as opposed to us saying, "Hey, go do a CDO," because we didn't need to do that. Deutsche Bank was not one of the top underwriters of CDOs. [KLS: note DB was roughly in top 5.] It was very easy for my desk to short--to buy protection on sub-prime mezzanine from the other underwriters who were doing more CDOs than Deutsche Bank anyway. So that would be the interaction, would be they would ask us to help them respond to some of the conditions, or this one specific condition.

I would say that in '06, a lot of the deals were part synthetic, part cash. So it's a little bit that. But there's also an issue with many of the CDO managers had specific collateral that they liked that they thought was better. So there was a strong view that that's what people had, that early 2006 was better than late 2006 or that one originator was better than another originator. So there was some concern that even though, to your point, the synthetic market could be created overnight, that there wouldn't necessarily be anyone willing to buy protection on specific securities that a manager wanted.

So in 2007, it was very simple for us to buy protection from whoever we wanted. But then that was very simple for the managers to get protection because it became a robust market where it wasn't so much in the early part of 2000[6?].

*Interlocking credit exposures through CDS that went into CDOs:*

I mean, I didn't like it because then I had to write all these tickets, right, because now I have exposure to all the other investment banks, right. So let's even pretend that it was just--that I did half, and the other half were other people. So if Deutsche Bank has 5 billion of CDOs, two-and-a-half billion are with me, and then I have two-and-a-half billion of exposure to other investment banks where I'm intermediating between them and our CDO.

When it was done, I was told, "This is how you have to do it because it's a lot easier to do it this way, and everybody's doing it this way." **But as it turned out, of course, when Lehman Brothers went under, all the sudden you had this situation where you thought you weren't short.** In our example, you thought that Lehman Brothers was short, and you were just intermediating. And, obviously, the converse was true as well. If I was short into a Lehman Brothers CDO, I thought I was short, and I wasn't short because my counter-party disappeared.

*CDOs were not a significant part of my trading business:*

I think that we did 60 to 100 billion of CDS trades. And Deutsche Bank CDO was not ten. I don't know how many CDOs we did, but less than that. So, I mean, I'm estimating these numbers. So if it's important, someone will give you the facts. But I'm highly confident that it's not a quarter of our business, if it was that.

*Discussion of relative size of ABX vs. single-name ABS CDS?*

[Referred to chart in book. CDS on CDOs was a fraction of trading in ABX and ABCDS.]

We traded the AAA business of all ABS because back then, nobody really would've thought to focus just on this or what-have-you, was about, at Deutsche Bank, a 75 to \$100 billion-a-year business. That would include credit cards, auto loans and things like that, in terms of secondary trading. By volume, it [home



equities] was the largest part of the business. But until sort of the crisis came along, the margins in these products, in the AAAs were almost zero. So it was a lot of volume but not a lot of actual profits or risk or focus. I mean, **the AAA home equity securities, which now are 20 cents, 30 cents, whatever, 50 cents on the dollar, used to trade five basis points over LIBOR, four-and-a-half basis points over LIBOR market, you know, 5 billion. I think there was--you know, very, very liquid, very, very transparent, virtually no margin in them. So that was a lot of our volume, but it was never particularly a lucrative--it was really a client-service thing.**

*How did the introduction of ABX impact the market?*

**The ABX enabled there to be transparency in a way there never was before.** So, for example, the ABX was something that could be put on CNBC. You couldn't put the pricing of the Long Beach 061M9 tranche on CNBC because there was no transparency. There wasn't enough trades. **So I think that the ABX alerted people to that there was a problem with these securities earlier than people would've understood, had it not been for that.**

*Did you tell people on pitches that you were short?*

I told people I was short because they would say, "Why are you here," like--and why I never had somebody come in and say they should short a market, so I would tell people that I was short, and I thought it made sense for them to be short as well. So it was part of my pitch. But I think in terms of--I think it's your obligation to give investors the whole--to give them accurate information and give them as much information as they ask for and then allow them to make their own decisions.

*Who were the shorts?*

**I would guess that Deutsche Bank sold protection to more than 50 and less than 100 investors.**

...Obviously, Paulson, Phil Falcone, Harbinger Capital we did a lot with. There's a hedge fund in Boston called Baupost that did a lot with us and did a lot with everyone else. Elliott, which is a hedge fund in New York, we did a lot with. QVT is another New York-based hedge fund that we did a lot with. Those are some of the ones that pop to mind, and obviously, the ones in the [Michael Lewis] book, we did trades with as well. And you don't need me to tell you those numbers.

But I think that I probably pitched, in some way or--you know, plus, minus 250 funds in total over a two-year period. So a simple arithmetic would be--I guess that's 24 months, so that would be 10 a month, but it probably was concentrated in the second half of '06 through the first quarter of '07.

*Who did you then go to to provide the offsetting long position?*

**Most of our CDS purchases were from UBS, Merrill and Citibank because they were the most aggressive underwriters of CDOs.**

Because the way ... the CDO market, which again I had zero involvement with, ... was established, this, whoever was the underwriter of the CDO, they would be the sole counterparty to the CDO vehicle, and they would intermediate with the Street.

So, similarly, there were hedge funds that said I could pick the one--you know, I think that the May deal from Countrywide is much better than the June deal from Countrywide. So I'm going to try to get long the May and get short the June or what-have-you. So that was a certain amount of our business. But the majority of our business was into CDOs, be they DB or otherwise.

I mean, Deutsche Bank as an institution lost billions of dollars on this stuff because the other groups of Deutsche Bank had the opposite view of me and much bigger size than me. [Deutsche was net long as an institution.]

*Discussion of realizing gains.*

*Discussion of Morgan Stanley dispute over super-senior marks.*

So they were either synthetic CDOs, or they were synthetics on actual CDOs, whatever it was. So we get this phone call, "Hey your marks are a billion dollars apart from Morgan Stanley's marks. You can't be right. They must be right." So, well, actually, we think that--you know, look, we don't really--we have a process for which we value these, and we didn't know that they thought there were not like--we thought they thought they were 70, just like us. We didn't actively try to do anything. We just marked them where we thought it made sense. So--

So this quickly got--a billion-dollar difference got attention. People said, "Well, first of all, again, how could you be right because it's super senior, and how are they worth 70 cents? And second of all, it's a billion dollars. So what are we going to do?"

They have to mark to market. But they can mark their book wherever they see the market. We mark our book wherever we see the market. I don't see a problem with that. The problem arises when we say, "Well you owe us a lot of money, and you're not paying us." we would have this issue that Deutsche Bank would say, "Wow, these guys owe us a billion dollars. We're waiting, and we don't like being owed a billion dollars by somebody." So the decision at the time was, "Well let's try to find a way to come to an agreement with them so we don't have to wait for arbitration." So whereas the first argument was: we thought it was 70 and they thought it was 90, the second argument might've been: we thought it was 60 and they thought it was 80. And the third was we thought it was 50 and they thought it was 70 or--you know, there was more. I don't remember how many there were, but there was more than two and less than ten conversations about this. And it worked out each time because each time, we came to some sort of middle ground that both sides were somewhat comfortable with.

*Models:*

Somebody who works for me who knows a lot more about math than me would've built the model, and I don't know... even know what these words mean, but **there was talk that they use a Gaussian copula function or some other math that's way over my head.** So I don't really know.

**So the math related to how these work kind of--maybe this is one of the reasons that I was able to do what I did because I didn't understand the math as well as some other people. I just sort of understood the common sense part. the determinants of the value of these securities is the price of the securities, the recovery rate if they--there's the price is supposed to indicate the possibility of it defaulting. The recovery rate you assume if they default. And then the correlation, so meaning the likelihood that if one defaults, the other ones would default. So our differences with Morgan Stanley weren't so much in the price of the securities because we were able, as market-makers, to have reasonably similar views about what each of these securities was worth, was trading at, excuse me. So the difference had to either be in, well if it defaulted, what it would recover. Or if one of them defaulted, how plausible was it that the other ones would default?** And we didn't--I don't remember how--it was obviously--these were contentious phone calls between the parties.

Discussion implication of Lehman bankruptcy:

**...when Lehman Brothers went bankrupt, all of the derivative trades that people had with Lehman Brothers ceased to exist at that moment. So one's exposure to various markets was different than one thought or different than it was the day before...**

END OF AUDIO, PART B; BEGIN AUDIO PART C

**it was our view that, to the extent that home prices went up four percent per annum in those places, the default rate would be close to 24 percent, ... And if you look at this data, it was quadrupling ...**

And one of the reasons that the [pitch]book grew over time was an attempt to answer some of those questions. So people said, "It's about unemployment. It's not about home prices," or, "It's about migration patterns, population," and that's--because it was a pretty radical thing to say that these securities were going to default if home prices only went up four percent a year. Because it wouldn't be that crazy to say, "Hey, home prices are only going to go up four percent a year." That doesn't sound like a wildly, like "doom is coming" prophecy, right. But saying, "These bonds are going to default," was sort of like saying, "Doom is coming." And people felt that doom wasn't coming, obviously.

*Discussion that many investors believed that unemployment was an important factor in determining default rates, rather than home prices. Xu's research showed otherwise.*

*Risk layering:*

the only way to keep the housing market going was to continue to make loans that were more and more aggressive, more and more easy for a borrower to pay less money down, etcetera, higher debt-to-income ratios, but also that not only were more loans having risky factors but that they were having more than one risky factor. I think what risk-layered means was more than--so, for example, it might be okay to give somebody a high loan-to-value ratio loan as long as they had a very good credit score, because you would say, "If this person has a great credit score, I can lend them 100 cents on the dollar because they've always paid their bills on time." Whereas, another person who had a low credit score, you might say, "I can't lend them more than 70 cents for the property because they're not--they haven't demonstrated the same willingness and ability to pay as others."

*Bulls on subprime vs. his investment thesis that home prices would moderate and that is relevant:*

The bulls would have said either, A, home prices are going to keep going up at this rate forever, or B, if they don't go up, it doesn't matter because what matters is unemployment or population trends or any of these other things. So, for me sort of to be right in my investment thesis, I needed not only for home prices--my own opinion was that defaults wouldn't increase unless home prices moderated. And so my own thesis was that home prices will moderate, and that if they moderate, my theory that that moderation is relevant will be proven correct, right. So when I started this short, home prices hadn't moderated. So that part of the puzzle hadn't even come to pass. It wasn't until really September '06 that home prices started to moderate. So by September of '06, sort of, the first criteria for me to be right had happened. Home prices had started to moderate.

**The second criteria was for people to actually not be paying their mortgages, and that's beginning to happen in the fall of '07. I think New Century went bankrupt because of--**

**it was in the fall of '06 when home prices moderated, and then in the spring and the summer of '07 when the delinquencies began to happen.**

### *Ratings*

And our new-issue guys told us, "This is how they rate this." And it's very logical that this is how you would do it. The agencies had their own model that looked at quality of the loan in terms of the loan-to-value ratio, the credit score of the borrower, the geography of the loan and all of the different factors about loans. They had their own model that came up with their predicted loss amount for a given pool of loans. And I remember that some pools--they said, "Oh, we think five percent is going to be the loss rate." And another pool, they thought it would be five-and-a-half percent. And they would size the different tranches accordingly.

So, from the rating agency's perspective, they can rate--it doesn't really matter whether the loans are of--perceived to be high quality or low quality because they can adjust the credit enhancement accordingly. So a pool of low credit score, high loan-to-value ratio loans would have more credit enhancement for a given rating than one of high credit score borrowers with low loan-to-value ratios. And they would say, "A BBB is a BBB is a BBB, and it doesn't--**these loans are lower quality, but the credit enhancement is seven percent. These loans are higher quality, and the credit enhancement is three-and-a-half percent.**" So like the BBB is equivalent across that.

**To do a CDO, you would then have** to say, "What is the--" It's similar, I guess. What you would have, instead, would be **the default frequency for a given rating**. So we believe at X, Y, Z rating agency, we believe that BBBs default this frequently. You would need the **loss-severity ratio**, which would be--if a BBB defaults, how much is it going to recover? And then you would need **the correlation**, which would be what is the plausibility that if one of these defaults that more than one default.

**So what the agencies needed to do to rate a CDO, which is not discussed here at all, would be to say, "Well these BBB bonds that have been put together, how much are they going to recover if they default? And what is the likelihood of a lot of them defaulting, versus just a couple of them defaulting?"**

**Well I think they made two different mistakes. The first is the likelihood that the BBB tranches were okay, because most of them aren't okay. And then the second issue is if one of them's not okay, how many other ones are not okay. Those are two very different issues**, right. So the rating agencies believed that the default on these pools were going to be five percent. So they were wrong about that because it was much more than five percent.

But what was also--the reason that you could take a bunch of BBBs and create something that was mainly AAA was the same thing that was the main difference between Howie Hubler and Morgan Stanley and Deutsche Bank was that the belief of the rating agencies and the belief of Morgan Stanley was that if they defaulted--forget about whether that was likely or not likely, which is a separate question. But if they defaulted, very few of them would default, as opposed to that they would all sort of default, or none of them would default. **So my opinion about the agencies would be that they made two different mistakes, two different kinds of mistakes. .... I disagreed with the correlation assumptions in CDOs.**

I think there were a lot of people, as we talked about before, who believed that even if home prices didn't go up, that these bonds would be fine, right. They believed that as long as unemployment stayed low, or as long as the migration trends--so I think that one was to consider whether home prices could moderate or

not, but the second was--and I think is a very importance difference because there were a lot of people who looked at these charts and said, "You're wrong. It's not about home prices; it's about something else." So **I think there may have been people who considered the possibility of home prices going down, but what they--it wasn't that they didn't think of that; it's that they didn't think that that would be as important as it turned out to be.**

*The reason MBS prices did not drop when housing prices dropped is the demand for MBS by CDOs:*

So the point of this slide was: **the reason that home equity securities' prices are not going down is because the CDO market is so vibrant** that it is--the price of a security reflects fundamental and technical views, right. People have opinion about the securities, in terms of the likelihood of things going well or poorly for them. And then on top of that is how many people have a bullish view versus a bearish view, right.

So whereas, by the end of '06 or when this book was written, June of '07, by the end of '06, the fundamentals were siding with me, in the sense that home prices were moderating, **the technicals were not siding with me, because the CDO market was creating so much demand for these products that, even though home prices were moderating, which should have encouraged people to be more prudent about making mortgages and whatnot, the CDO market was fueling demand for a product, which enabled loans to be made that--you know.**

So the point of this slide was I'm not wrong because prices are going up; I'm wrong because there's lots of CDOs happening. That's why I'm wrong right now.

there was a lot of demand from institutional investors to buy CDOs, and there was an increasingly willing supply of CDO collateral from hedge funds willing to buy protection [I mean other?]-so you could only do a CDO, a synthetic CDO, if someone is willing to get long, and someone else is willing to get short. So before '05, there really is little-to-no derivative market, right. So this is almost entirely cash CDOs. So it's just how many asset-backed securities are there that we can put into a CDO? How many people want to buy CDOs, right. That's the market.

2005, we start to do some synthetic CDOs, so now it's a question of, in 2005, and in 2005, we could've done--and by "we," I just mean Wall Street. I don't mean Deutsche Bank or me or any of that. But **I think the reason that the number in 2005 is smaller than 2006 is because there weren't that many people willing to buy protection, not that there weren't that--I think the number of people willing to sell protection or to buy a CDO didn't change that much from 2005 to 2006. But what changed was the number of people willing to buy protection on it.**

*What impact the development of the synthetic market, in general, played in the financial crisis.*

I think, from the perspective of Main Street, the synthetic market resulted in less pain. And the reason I say that is that without people shorting sub-prime, the housing bubble would've continued a bit longer. But ultimately, I think with the benefit of hindsight, most people would agree that home prices had reached levels that were not sustainable for income and the loans that were made were not prudent loans and whatnot. **So it is my view that the synthetic market brought an end to the housing bubble sooner.** So from the perspective, a simple perspective, of home--let's just say that today's price is the appropriate price for a house, just for simplicity's sake. And that house today is trading at \$100. And at the top, it was 130. So the people that bought it at 130, they've lost \$30. Had it not been for synthetics, I think that the housing bubble

would've continued for some amount of greater time. And that very same home that, today, is \$100 would have reached \$140 or \$150. It would still be \$100 today. So from the perspective of Main Street, I believe that the synthetic market sort of ended the housing bubble earlier, so there was less direct pain for people because they--the person who bought the house at 130 had the pain, but he would've sold, or she would have sold her house at 140 to someone else who would've lost even more money.

**On the other hand, it's inarguable that synthetics resulted in Wall Street losing a lot more money than it would have otherwise. So I think, on a direct basis, Main Street lost less because of synthetics than it would have otherwise. But to the extent that the money lost on Wall Street hurt Main Street, then synthetics increased the pain. But more directly, I think without synthetics, Wall Street would've lost almost nothing, and Main Street would've lost plenty, in fact, maybe more than they lost; whereas, with synthetics, Wall Street lost a lot of money as well.**

I think that the synthetic market helped stifle more and more aggressive lending. So we would've, perhaps, seen 50 or 100-year mortgages issued, had it not been for synthetics.

*Discussion of going short through 3 methods: single-name, ABX or CDO tranches:*

The ABX was more liquid than single names, and CDOs were far, far less liquid than single names. So I would certainly say to people, "It depends on your perspective. If your perspective is that you want to do this for three weeks or three months, you should probably do the ABX. If you have a longer-term horizon, you should do one or the other. If you're willing to sort of ride it to the very end, then maybe CDOs make sense. If you want to cover this when they're trading at 50 cents or 20 cents on the dollar you probably want to do the single names."

**Well I think that the synthetic market resulted in the Wall Street investment banks losing a tremendous amount of money and a bunch of hedge funds making a tremendous amount of money. That sort of is separate and distinct from what else was happening, right. So, again, the housing bubble would have been--it's my view, the housing bubble would have been worse but for synthetics. And from that perspective, I think the synthetics were good for Main Street because it stopped the bubble before it got even more inflated.**

The ability to hedge definitely didn't lead to looser underwriting standards, in my view. I think it actually made underwriting standards be tighter, because if there was no way for somebody to short weak underwriting, the ability to make more and more weak underwriting would actually increase. So I don't think that that would be--I think it's the reverse. I think that the weak underwriting was met with shorting. So weak underwriting had to be stopped.

And then I don't think that--I think it's been sort of shown that not enough hedging was going on. So **I don't think the people that were originating these originated more because they could hedge because they actually didn't hedge, right. Pretty much everybody who was in the origination of these securities lost money in that process. So they didn't hedge.**

*Causes of the financial crisis:*

And my own view would be that the primary, the first seed of the cause is that home prices went way too up, went way too high, and the culture of "the more people who owned houses, the better" was a mistake.

I think that most people in the business wanted to see things continue to be good for a long time, so that's what they saw because that's what they wanted to see. I didn't want to see things not be good. **It was very difficult to take such a contrarian view, particularly throughout 2006**, to be sort of mocked or ridiculed. It was a difficult thing to do. But in looking at the data the way I saw it, **I saw that home prices were extremely important to this. I think other people didn't see that because they didn't want to see that. I didn't want to see it either, but I didn't let that enter into my analysis.**