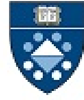

Yale SCHOOL OF MANAGEMENT
Program on Financial Stability

Lessons Learned Oral History Project Interview

Interviewee Name and Crisis Position	Brian Stoker[1] Director of ABS CDO & CLO Structuring, Citigroup (2005 - 2008) Vice President, Merrill Lynch (1998 – 2005)
Interviewer Names	Steve H. Kasoff Former Partner, Elliot Management Corp., and International Center for Finance Advisory Board Member, Yale School of Management Matt A. Lieber (Independent Contractor) Yale Program on Financial Stability
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Introduction

The Yale Program on Financial Stability (YPFS) emailed Brian Stoker to request an interview regarding his experience managing CDO structuring at Merrill Lynch and at Citigroup.[2] Stoker joined Merrill Lynch in 1998 and worked for seven years structuring and trading asset-backed securities of different types. He joined Citigroup in 2005 through 2008. After the financial crisis, he was an Analyst at Carlson Capital from 2008 to 2011, then a Managing Director at StormHarbour Securities for six years through 2018.

Presently Director of Securitization at Korth Direct Mortgage, Stoker earned his BS in Commerce from the University of Virginia and his MBA from Harvard Business School. Before his career on Wall Street, he was a financial manager for six years at Peoples Telephone Company in south Florida. In this interview, Brian discusses the CDO structuring business, including CDO ratings, marketing, trading, investing, and synthetic CDOs.

This transcript of a telephone interview has been edited for accuracy and clarity.

Transcript

YPFS (Matt Lieber): Thank you for joining us today, Brian. We'll concentrate on your experience at Merrill and Citigroup during and leading up to the financial crisis. But if you could just tell us your early career in brief, out of

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[1] The opinions expressed during this interview are those of Mr. Stoker and not those any of the institutions for which the interview subject is affiliated.
[2] A stylized summary of the key observations and insights gleamed from this interview with Mr. Stoker is available in the Yale Program on Financial Stability's Journal of Financial Crises.

Harvard Business School, with a broad training as a business analyst, how did you get into this area of CDOs?

Stoker: Well, not because I always dreamed about working in that area, that's for sure. No, I thought sales and trading would be a good place for me in general, but when you start with an investment bank, you get to go through a rotation program. Then they match you up with desks that choose you. I went through the lottery, I guess, and I was chosen to work on the emerging markets credit derivatives desk because they had just fired over half the people in that department. It was 1998, and Russia had just blown up. Russia, I think defaulted and blew up (affecting) other countries, and emerging markets were terrible.

They brought me in to help, mainly I just marked the books for about a year based on how my boss told me. But then after a year of that, my boss had a big loss because of a mistake in his model that he was using to mark one of his positions. When my boss went on vacation, his bosses interrogated me, and they figured out that one of the positions had a bad model and was off by $10 million. They fired him and they said, “Hey Brian, why don't you go work over in CLOs?” I said, "What's that?" And they said, "It doesn't matter, that's where you're going." I said, "All right, let's do it."

Actually, I guess they needed people in CLOs because Steve had just left Merrill in '99 to go to Deutsche Bank with several people. They needed some bodies and that's what I did.

YPFS (ML) Fantastic. Could you tell us once you got into CDOs, the basic process of structuring an ABS, cash and CDO from start to finish? Walk us through the different pieces of that?

YPFS (Steve Kasoff): Sorry, just before you get to that, so we can just get the history down. When did you go over to Citi?

Stoker: March 2005.

YPFS (SK): 2005, got it. OK. Basically, in the same role?

Stoker: I structured at Merrill for about three years and then I went to join the RMBS and CLO trading team. I wasn't such a good trader, and I didn't like it, so I joined Citi to get back into structuring.

Regarding the process, somehow a potential deal will come in. A portfolio manager might contact us or contact our department, or the salesperson might contact us and say that their client wanted to be a CDO manager. Or in the third case, we would reach out and contact managers and say, "Hey, we'd love to underwrite a CDO for you, what do you think? Can we agree on fees and the manager's equity investment to put together a deal.”? That was the beginnings

of it. Then we worked to agree on an engagement letter. That engagement letter often took a month to negotiate. But then once you did that, then you had to figure out whether the economics of the deal work. We started working with the asset manager to put together a sample portfolio. And we would use that portfolio and our desk's expected liability spreads to see if the deal was economical. We had to figure out if we could sell all the notes and the equity at a price where we would end up with a profit.

YPFS (SK) **When CDO managers approached you or when you were soliciting others to take that role, what were the things that made somebody most appealing to work with?**

Stoker: The bigger their name, the bigger their company, would probably make them better. I guess two things. It was always nice if the manager was reasonable to work with. But from as far as being able to sell it, usually the bigger the manager, the easier the deal was to sell. If they had a big insurance company or a big mutual fund company that investors have heard of and they have lots of analysts, then it would be easy to sell.

YPFS (SK): **OK. You referred to the potential for them to buy some of the equity from their own deal. How important was that?**

Stoker: Super important. And the more important, the smaller the manager was. Then we'd spend time on the economics, look at the portfolio that they chose relative to where we could sell the deal and see if we could make any money. It was always a big question. A big, humongous difference with CDOs versus other bonds that are underwritten by Wall Street is that our fee is not guaranteed at all. We try to make 1% or 2% on a deal, but we're really just left with the remaining cash proceeds. That depends on where we can sell it. This is unlike a corporate bond. I was always jealous of the investment grade corporate bond guys because they get paid, I don't know, half a point and they can sell a billion overnight. Maybe in an hour, they can sell a billion and get paid a huge fee, and we would spend months to just maybe make money. We were always at risk and could we make a profit or loss.

There was some back and forth usually with managers. Managing a CDO is different than managing a mutual fund or managing an insurance portfolio. To make the economics work, the whole arbitrage in the CDO is choosing assets where the yield is relatively high for a given rating. We had to work with some managers to understand that. From there we would sign up the manager. The manager would start acquiring assets. It might take several months, maybe four months or so, for them to acquire enough of the portfolio, maybe 75% of the portfolio. Then from there, we put together a PowerPoint presentation and offering memorandum for investors to describe the deal and show them the economics.

YPFS (SK): **Can you elaborate on that part of the process -- before you sold the deal to investors and assets are being acquired prospectively and how that risk is managed and who bears that risk and if there were different arrangements that you had just how that worked?**

Stoker: Sure. In those days, pretty much the bank would keep all the risk, 100% of the warehouse risk. In fact, we've talked about the manager buying an asset, but they didn't buy it. They bought it on behalf of the bank, either Merrill or Citi. The manager would buy it and say, OK, send it over to Merrill Lynch or send it over to Citibank, and they'll pay you for it and they'll hold it. It's 100% held by the bank.

As far as managing the warehouse, I wouldn't call it managing it. It was maybe adding it up. There was really no monitoring or trading of individual assets, basically just adding up the total exposure, total notional. Monthly the securities would be marked to market.

YPFS (SK): **There's no hedging.**

Stoker: Generally, no hedging, no.

YPFS (ML): **This is for three years we're talking; this was going from '04 to '07?**

Stoker: No hedging from 2000 to 2006 and then maybe in 2007 there started to be some hedging.

YPFS (ML): **The managers, when did they get started and get standardized as an outsourced key component in it?**

Stoker: Could you say that again?

YPFS (ML): **Yeah. When did the managers come in as a segment where you had choices, where you had a standard business, the CDO managers?**

Stoker: I'm not sure I'm understanding the question.

YPFS (ML): **My understanding was that this industry grew up of the CDO managers coming in about '04 and they had a run for a few years, something to do with the pay-as-you-go swap and the structuring that required their services.**

Stoker: Right.

YPFS (ML): **Steve, you might want to help me out here.**

YPFS (SK): **Yeah. I guess it was even before the synthetic version you had.**

Stoker: Yeah. ABS CDO started about year 2000.

YPFS (SK): **Yeah. I guess it's evolved as you have these multi-sector deals.**

Stoker: Yes.

YPFS (SK): **My recollection is that the multi-sector deals from 2000 and 2001 performed very poorly during that recession, because one of the things they had in them was some of the investment grade corporates that had defaulted like Enron and WorldCom, and then they also had a lot of aircraft ABS-**

Stoker: Manufactured housing, yeah.

YPFS (SK): **... which performed terribly after 9/11.**

Stoker: Right.

YPFS (SK): **It was because of that subsequent deals were concentrated into the other parts of portfolio which tended to be mortgage risk.**

Stoker: That's right, yeah. 2000, 2001 it was diversified into all those different sectors. It turned out some of those sectors were terrible, ended up being terrible. But the one sector everybody really seemed to love was RMBS.

YPFS (SK): **It performed well, right. You had interest rates dropping from whatever to hundreds of basis points.**

Stoker: Right.

YPFS (SK): **That's when housing market took off.**

Stoker: Right. I don't remember when the rating agencies changed their methodology or if they changed it for that. I think the early deals that we were trying to add diversity by adding those different sectors in 2000, 2001. I actually didn't structure an ABS CDO until much later in 2005.

I don't remember when the rating agencies changed their methodology or if they changed it. I read they changed it.

YPFS (SK): **Yeah.**

Stoker: But I don't recall that.

YPFS (SK): **Well, can we maybe talk a little bit about the rating agencies?**

Stoker: Right.

YPFS (SK): **You've probably interacted quite a bit during the structuring process with rating agencies. What were the things that you talked about and was**

it really just following a process that was well established or were there things you had to negotiate and convince them of?

Stoker: It was mostly following their rules. They had a mathematical methodology that used models for or maybe even their models to determine the tranching. It became well established. It wasn't so established early on in the early 2000s, but it became more and more established. All along there was always a little bit of wiggle room in certain areas where things weren't well defined. I think the weighted average life was not well defined in the early 2000s. But I think most of the negotiations had to do with qualitative terms like how much trading, what types of trading would be allowed, what would be considered credit risk, the definition of credit risk, the definition of covenant lite, ….

YPFS (SK): Do you think that they were more lenient or less lenient based on the reputation of the manager or-

Stoker A little bit, yes. For more established managers, they would be a little bit more lenient, yes. Allow them a little bit more flexibility in their trading, maybe a bigger CCC bucket, that type of stuff.

YPFS (SK): Then maybe let's turn to the marketing process. You must have had a lot of interaction with-

YPFS (ML): Can I just go back? Steve, excuse me interrupting, but I just want to follow up on the ratings. We've heard, Brian – and you could speak to this from the bank side - it's been written that rating agencies would not have leverage, and that if they did not give the right rating, the broker-dealer would go across the street to the other one. Did you see that kind of dynamic in the interactions with the ratings agencies? Did you feel you like you had that leverage with them?

Stoker: Well, I think both sides had veto rights on the deal. We pretty much needed Moody's and S&P on our deals and if they gave us a bad rating, we were in a world of hurt. We needed to work with them. And they wanted to work with us because they get paid a big fee.

YPFS (ML): What about playing the one off the other?

Stoker: Not so much. Not so much. Fitch was trying to get involved and start rating more deals so we could start including them as long as they were relatively easy and came up with ratings that matched up with the other rating agencies. But no, I don't think we played off Moody's versus S&P.

YPFS (SK): You didn't ever do deal that didn't have both Moody's and S&P on it, did you?

Stoker: I wouldn't be surprised if every deal had both of them. I think Standard & Poor's, we might have had maybe just this AAA tranche on some deals. And Moody's would rate all the capital structure maybe, because they might have been a little bit easier than Standard & Poor's down the capital structure. I guess that's called "playing off" - one versus the other.

YPFS (SK): In marketing the deal and talking to investors, just if we were to split investors into AAA, mezz, and equity (I know it was more complicated than that). Why did each class of a buyer find the product appealing? What are the other observations that you have as to why people bought this stuff, what they viewed as the risks?

Stoker: Yeah. I think it was all determined based on their entity type. Reinsurers were in the business of insuring low-risk stuff. They had mainly done munis before, but they were able to do big size, as insurance, on the senior tranche. Banks were very happy to hold insured AAA assets. They could invest in AAA securities. Insurers: the way their regulations work is they have NAIC ratings. They would have the same capital treatment for AAA, AA, and A securities. They would love to buy single-A securities with high yield because they hold very little capital just as if it was a AAA security. Insurance companies tended to buy mezz. Hedge funds were in the business of trying to generate higher yields and willing to take on higher risk. They would buy BBB securities and equity securities.

YPFS (SK): You mentioned banks buying AAAs. Having worked at a bank and probably observed some of this. I'm sure it was similar for other banks. How does a typical bank that was buying a AAA, what do the economics look like to them? How are they financing that? What's the impact on their balance sheet, on their regulatory capital, et cetera, how do they think about it?

Stoker: Yeah. In the early days when I worked at Merrill Lynch (a non-bank), we would sell the AAA to various banks. We split up among five or 10 banks. That would just be a regular investment yielding LIBOR plus 50. But then later on the it became a competitive advantage for the dealer to buy some of the AAA. At Citigroup, we would issue a commercial paper tranche actually. Steve, did you ever have to managing that commercial paper on your deal? Oh no, we backed out on you. Sorry about that, Steve. Do you remember? You don't even remember?

YPFS (SK): What's that?

Stoker: I think on your ESP deal, you signed us up to do commercial paper deal.

YPFS (SK) Oh yeah.

Stoker: Then our policies changed, and we weren't able to do that.

YPFS (SK): **Right.**

Stoker: What was it? On the commercial paper deals, Citigroup could issue commercial paper. Commercial paper investors would put up all the money to buy that tranche to buy the AAAs, but Citigroup essentially insured it. But that insurance did not show up on our balance sheet at all. There was no capital risk to it. It just seemed so safe. I don't know why when something becomes that safe that's not supposed to be on your balance sheet, but maybe because-

YPFS (SK): **There was no cap meaning there was no capital usage at all.**

Stoker: No capital because it was kind of an insurance.

YPFS (SK): **It didn't show up. You're saying the CP didn't show up as a liability on their balance sheet either?**

Stoker: Right. The insured CP, yeah.

YPFS (SK): **Was it even in the notes do you know?**

Stoker: I don't think it was. I think they added it late in 2007 or 2008, and said, oh, by the way, we've got $40 billion of commercial paper that's backed by subprime mortgages. I don't think they were trying to hide it. I'm sure they were following the rules, but the rules allowed them to book it that way. That made an infinite percentage return to them as percent of capital because there was no capital. In addition, on those deals, because the deal had to last at least five years. If the deal was called before that, we'd get paid in full for five years. We could book five years of profits day one. They call that PV'ing the profit. There's a huge profit booked right at the beginning for issuing the commercial paper.

YPFS (SK): **Was there any practical limit to how much they could do of that?**

Stoker: There wasn't for a long time, but then it did become finally limited. When we got to $40 billion or $35 billion, somebody at the bank finally noticed and said, hey, that's a lot. They started to impose rules. The last deal we did was the only one deal I worked on with commercial paper and that was early 2006. It was the only deal I did with commercial paper, but it had lots of rules in it as to how the commercial paper could be issued, had to be spread out well, so that if there's a problem, Citigroup wouldn't have to come up with a billion dollars real fast. It would be spread out over time. That's commercial paper. That was a big competitive advantage for us.

YPFS (SK): **Citi also had some, what did they call them back then, the separate vehicles that issued CP.**

Stoker: Yes. SIVs, right, S-I-V, SIV or ABCP Conduits.

YPFS (SK): **Yeah.**

Stoker: Yeah. They were commercial paper buyers, and Citigroup had humongous SIVs that Citigroup effectively backstopped those also.

YPFS (SK): **They would buy normal AAAs. They didn't have to buy the CP version. They could just buy regular AAAs.**

Stoker: I think they usually bought short-term stuff. They could buy CP from corporates.

YPFS (SK): **Yeah.**

Stoker: Because Citigroup was buying that. It had liquidity risk there and didn't book that as risk, I don't think. Extending into backstopping commercial paper with RMBS exposure wasn't that big a change. Anyway, commercial paper was important. Third way of doing AAAs was negative basis trade where we would get a reinsurer to insure the AAAs, usually the super-senior AAA. Then we'd find a bank to hold that insured super-senior AAA.

YPFS (SK): **What was appealing for the banks that were buying that? They were, obviously, earning less of a spread than if it was not insured. How did the economics work for that?**

Stoker: I actually don't know. I'm not sure why they like it so much.

YPFS (SK): **OK. All right, Matt, unless you have any other questions on this-**

YPFS (ML): **Real basic. Brian, the banks you're describing are money center banks, big commercial banks. You don't mean just SEC-regulated broker dealers. You mean the big banks, right? Correct?**

Stoker: Generally, yes.

YPFS (SK): **I want to turn to synthetic CDOs, because I guess it was around the time that you got to the Citi that started. You said '05 you joined Citi.**

Stoker: Yeah.

YPFS (SK): **That's right around when first you had hybrid CDOs and then you had fully synthetic.**

Stoker: Yes.

YPFS (SK): **Can you talk about how, we know how they're different in terms of being synthetic, but how did the process of structuring and executing them from your role in your seat, how was it different when those deals started to proliferate?**

Stoker: As a structurer, it took some work to figure out how they should work, because their cash flows were more complicated, and we had to get some internal approvals to do those deals. I thought synthetics made a lot of sense. If we got a buyer and a seller, someone wants to buy a bond and someone wants to short that bond at a given price, but they can't find the bond. Whoever holds the bonds wants to keep them. But we have another buyer and seller who want to trade. I started working on synthetics when I was at Merrill in 2004. I was a trader, I wanted to trade, but I couldn't get the bonds, so we started doing synthetics.

Now for the CDOs, starting to do synthetics and full synthetics. I think the biggest difference was that we could actually manage the warehouse risk finally. The management of the warehouse risk was very different, because first every synthetic trade had to be intermediated or had to be with the bank's trading desk because it was not a normal synthetic trade. Most synthetics, if a hedge fund traded, they'd have to post mark-to-market on any gains or losses, but CDOs were not set up to post mark-to-market. The underwriters' trading desk would have to be in the middle of all those trades and be willing to accept the risk that they were not receiving mark-to-market from the CDO.

The trading desks were really important there, but it also allowed the trading desk to really hedge their risk. Anything that the manager wanted to buy synthetically, they could trade with the trading desk (matching best price) and that would sit at the bank, but it was just an internal transaction. There was no other counterparty. It was between the trading desk and the CDO desk. For the bank overall, there was no risk.

YPFS (SK): If I could paraphrase, you mean that if a manager wanted to buy a bond synthetically, the normal process would be that they would solicit any dealer that was willing to short it to them and the underwriter would simply intermediate that trade.

Stoker: Yes.

YPFS (SK): But the alternative that you've pointed out is that the dealer always had I guess a last right to just be the one to short it themselves.

Stoker: They can meet that price. They can always meet the best price and be short themselves. Yeah.

YPFS (SK): Have a last look.

Stoker: Yes.

YPFS (SK): That way the dealer could establish a short position that they could use for hedging or whatever internal purposes they had in the book.

Stoker: Right.

YPFS (SK): Well, I guess in theory the dealers also, the same dealers could be trading with other dealers that are building CDOs themselves.

Stoker: Yes.

YPFS (SK): At the same time, you had the creation of the ABX index or indices.

Stoker: Right. I think there's a lot of negative press about dealers being short a deal, but I didn't see dealers really being short deals. I saw them hedging warehouse risk because they had these transactions where the trading desk was short but the CDO desk was long. I viewed that as the bank wasn't shorting it. It was just actually being careful managing their warehouse risk. The deal I got sued for that was a big topic and just seemed out of whack to me. I thought our trading desk was being careful. The deal I got sued for was a synthetic CDO squared that we were worried it wouldn't get done. We didn't want to put on a bunch of trades and then bring that out to investors and not be able to get it done. Instead they did all the trades with our trading desk, so that if the deal didn't get done, they could be ripped up with no gain or loss.

YPFS (SK): How did investors perceive these synthetic deals? Were there investors that felt differently about buying synthetic versus cash deals, or was it just a question of the underlying RMBS risk and the managers and all the things that were the same between the two?

Stoker: Yeah. I don't remember investors wanting much more spread or declining to invest in the synthetic deal because it was synthetic. There might have been occasions where they said, "Hey, some of the assets in there we don't like," and they said, well, "Hey, maybe somebody picked these assets to short them." Maybe sometimes they were suspicious about that.

YPFS (SK): Yeah. I've heard a lot of that after the fact, and I'm just wondering how much of it was in the conversation at the time, the idea that, wait a second, some smart guy presumably has decided that these are the particular bonds that they want to short.

Stoker: Right. There were instances of that, but it wasn't that much. I think most of the investors thought that they were the smartest and the people shorting were not smart. They're like, "Oh, they don't know RMBS. These hedge funds, they don't know RMBS. I've been managing RMBS for 10 years or 20 years, and I know better than they do. They're just shorting the index. They're just shorting whatever they can," but managers-

YPFS (SK): The people on the short side were perceived as not as knowledgeable of nuances of the subprime market.

Stoker: Yeah, definitely not.

YPFS (SK): They were more after a macro trade.

Stoker: Yeah, just a macro trade. Mainly, I talked to managers who were always confident about the market and they were conflicted because they got paid to work on deals. I generally relied on them. I always thought that the market seems to probably be alright.

YPFS (SK): Matt, anything else on this?

YPFS (ML): Well, that's really interesting. So, their focus was on their expertise, the guys who were long, they were confident, because they've been working the nuance of the RMBS underlying, they knew all ins and outs?

Stoker: Yeah.

YPFS (SK): What about just generally as you got further into that period '06 in particular when the housing market was just on fire? You had unprecedented HPA, home price increases, and more and more people were talking about it being unsustainable. What were you hearing from these CDO managers that were buying this stuff or were the end buyers of the product?

Stoker: I'd say almost everybody was pretty gung-ho still. I think if people were worried about something, it wasn't HPA, it wasn't home price appreciation. They were worried about resets. They were worried about floating rate, or I guess the way that some of the mortgages work, I think they were fixed for three years and became floating after that. If rates were higher, all of a sudden, a borrower would have to pay higher interest rates. I think that was a greater concern for the market at the time.

YPFS (SK): I'll tease you right now, but at the very end, I'm going to ask you what parallels you might see between '06 and the housing market and today in some other asset markets. Let's leave that for the end, but I just thought I'll throw it out there for you to think about that as we continue talking.

Stoker: Yeah, great. I've already thought about that. Right, yeah.

YPFS (SK): You allude to the CDO-squareds, but even the regular ABS CDOs tended to have small allocations, typically 5%, 10% I think that allow them to buy the tranches of other CDOs.

Stoker: Right.

YPFS (SK): **From a structuring perspective, how did you think about it? How did the rating agencies think about it? Did you try to go beyond what the rating agency is required to do to think about is it the same risk?**

Stoker: No, just another bond with a different ticker.

YPFS (SK): **Meaning a BBB CDO tranche and a BBB subprime bond were, for all intents and purposes, identical.**

Stoker: Yes, identical. Just a question of how much you could put in. I think investors really drove how many CDOs could go on different types of deals. High-grade CDOs could have up to 40% in CDOs. I think maybe just because investors were happy to get comfortable with that, somewhere between 30% and 40% but BBB rated mezz CDOs, usually had 10% or less CDO exposure. Again, I think it was mainly just an investor preference that way. I don't remember a rating agency requirement.

YPFS (SK): **You can speak generically about underwriters if you want, but I'm curious particularly later in the market when selling those BBB CDO tranches became the most difficult part of the syndication process, how dealers utilized the fact that these CDOs had these allocations to be able to buy that stuff.**

Stoker: Right. Well, we definitely wanted deals we were working on, managers we were working with to buy our deals, no doubt about that, and push them to invest just like our sales people pushed every investor to invest in our deals. But particularly the managers we were working with. I remember when we got nervous about selling BBBs that we pushed extra hard. I guess in the warehouse risk, we started worrying about warehouse risk and buying other dealers' BBBs. We didn't want to have big warehouse full of other people's BBBs. We didn't mind taking our own risk, deals we worked on, if we're going to help our deals and put our deals in our warehouse as opposed to somebody else's deals.

YPFS (SK): **Meaning that if the manager wanted to buy somebody else's, you wanted that to happen after the deal closed, when you didn't have the warehouse risk.**

Stoker: Yes.

YPFS (SK): **What about synthetic versions? Did you find that there was a desire from the trading desk to be to short the BBB CDOs?**

Stoker: No. Well, maybe a little bit towards the end. I think in 2006, 2007 I think our trading desk might have said, hey, I see the manager wants to buy a deal from Merrill Lynch that is priced at LIBOR plus 300. Why don't we do it synthetically at LIBOR plus 300 and our trading desk would be short that. Again, I'm not

sure. I think our trading desk went back and forth every day wondering should they be short or not. A lot of times when they were short, they really weren't short. Our bank was like neutral because the trade was between our trading desk and our CDO desk.

YPFS (SK): **Did you have the impression that other dealers, because you probably talked to managers that were also working with other underwriters on deals. Did you get the impression that other dealers were being more aggressive in either pressuring or forcing or having quid pro quo type agreements about that sort of thing?**

Stoker: I wouldn't say quid pro quo. They can negotiate a price. There were no requirements to buy a bond. If they didn't like a bond price at par, they could buy it at 99 or 98. Or not buy it at all.

YPFS (SK): **Yeah.**

Stoker: I think there weren't many quid pro quos.

YPFS (SK): **OK. It was more just the regular pressure that salesmen are known for exerting every day.**

Stoker: Yeah. Just like if you're selling a bond, you put pressure on your clients. If you're selling a shirt, "You say, 'Hey, you should buy that shirt.' " Whatever you're selling, sales desks or salespeople do. I think the two biggest desks were Merrill Lynch and Citigroup, and I knew a lot of people at Merrill Lynch, and it seemed to me that they're pretty careful with their warehouse risk.

YPFS (SK): **I'm not going to say who it is, but we're interviewing somebody that was in a role similar to yours at Merrill, including after you left there.**

Stoker: OK.

YPFS (SK): **Are there any specific questions that you think we should ask that person beyond what we've asked you?**

Stoker: No, I don't know, not particularly.

YPFS (ML): **I want to go back, if I could, to transformation of risk, Brian, which again is basic, and I think interesting. Your answers provide some challenging nuance to a lot of the stories we're hearing. You were right there on the front lines. But when they made the CDOs and made that BBB subprime RMBS into a AAA on the basis of correlation, diversification, what was the origin of that transformation? Who came up with that? What was the thinking?**

Stoker: That makes a lot of sense then and now. It's just subordination. There's fancy terms, correlation and diversification, but mainly subordination. If you ever bought a house, you got a mortgage, well, what's the subordination on that? They give you a mortgage for 80% to make it safer for the bank. But securitizations with subordination started I think in the early '90s maybe the '80s. But they started securitizing credit cards, auto loans, auto leases, manufactured housing, every sector.

You can turn anything into AAA depending on if you add enough subordination. If you make it senior enough, you can make it AAA. Yeah, press loves to say, oh, how could that be AAA. Well-

YPFS (ML): What's the magic though? Explain that in a simple narrative: What is it that does that? Is it the numbers, that they're going to flush out the bad ones and most of them are going to be good, or is it something else?

Stoker: No, you have $100 million of subprime mortgages. You might think subprime mortgage is trash. You think it's terrible and you might lose money on it. Well, how much money are you going to lose? You tell me, what's the probability you're going to lose half your money? I don't know, that's pretty unlikely to lose half your money on subprime mortgages. But if you think that's a 5% chance, OK, well, 5% is not good enough to be AAA. Maybe what's the probability that you're going to lose 60% of your money. Maybe that's 1%. Maybe that's AAA. Then you could say, all right, the first $40 million of exposure is AAA because whoever gives the first 40 million is the safest and going to get their money back first, and based on your best guess, and that's all anybody can do is guess at it, that feels like a AAA risk.

YPFS (ML): OK. Subordination is taking the components and basically putting the risk into the different tranches and the different tiers. But it's presented as, and I think Steve might be able to say this more elegantly, but in the popular version, it's presented as here's the BBB stuff and then through the magic of something-

Stoker: Well, the press says it's turning trash into gold, turning trash subprime mortgages into gold AAA. That's ridiculous, but that's maybe a headline.

YPFS (SK): I guess when you look at, and some people were even talking about this even at the time that the reason why that process worked well in, say, the corporate space like CLOs, where you could take BB rated loans and create a significant amount of AAA was because of the diversification of the underlying portfolio. The argument went that when you're taking things like subprime, you don't have that level of diversification. The amount of AAA that you could create was vastly different than what the rating models were permitting. it's the diversity or the lack of correlation

between the assets in the portfolio. If you try to do a CLO, we only have one loan in it, we wouldn't get a whole lot of AAA. You might get 10%.

Stoker: Right.

YPFS (SK): The argument which you could agree or disagree or it could be somewhere in between, the argument is that a portfolio of 100 ABS bonds, all backed by subprime loans, is really not a whole lot different than one bond.

Stoker: I guess people thought that later on, yeah. In a CLO backed by corporate loans, diversity score might be 50, whereas in CDO backed by all RMBS, it might be 100 RMBS bonds, but the diversity score was maybe only 15, much lower, because rating agencies viewed the diversity to be less, so they required more subordination. Now they never said, "Hey, diversity is one." They never got to that point. You did, but they didn't.

YPFS (SK): Yeah. Well, just interesting because one of the interesting phenomenon during that period, which if you have any observations, I'd be curious certainly not the only person doing this but the most well-known company doing this particular type of trade was Magnetar where they were very publicly buying equity from these CDOs and shorting the BBB tranches.

Stoker: Right.

YPFS (SK): That was well known in the market as it was happening as opposed to just afterwards. I'd be curious what you or people that you talk to, what you thought of what they were doing and what impact it was having on the market.

Stoker: Yeah. That started making the BBBs hard to sell because they were shorting BBBs. I guess there was some debate about whether or not that was a good trade or not.

YPFS (SK): It was certainly interesting that you had the equity tranche of an ABS CDO paid high teens or low 20s-type upfront cash and then immediately adjacent tranche above it paid L plus 3, 3.25. Such a huge difference.

Stoker: Right. I can't remember people thinking it was a great trade or not. Yes, I think people started to copy it a little bit after.

I remember Magnetar, at Citigroup we talked to them. I think they were going to underwrite the deal. They'd agreed to buy all the equity in a deal if they could short all the BBBs. We kept going around and around. My boss was negotiating the engagement letter with him. They kept going around and

around. I think my boss just didn't like dealing with a hedge fund compared to an old school money manager and we never worked with them.

YPFS (SK): Yeah. My understanding is that they were very upfront about what they wanted to do, and an underwriter had to agree to those terms.

Stoker: Yeah. I don't remember. In general, Wall Street has a bad name, but I thought everybody was really classy and upfront. There was no stealing. I didn't see fraud or stealing going on. Everybody was first class and trying their best and banks spending billions to comply with every rule. Yeah, Magnetar was upfront and investors that were short were happy to tell you they were short. There were no tricks, and nothing hidden. Actually, that's something I find interesting about the securitization world compared to the corporate world. There are so many rules in securitization. There are so many rules. The transparency is amazing. Every month you get a report to show you every single bond in that portfolio and show you every trade and the prices they traded. Whereas if you invest in a company, they have almost no covenants. They can do whatever they want. You could invest in a corporate bond and all of a sudden they get bought by a private equity firm and your bonds are worth half as much what you thought they were because they got levered up. I thought the securitization market was really transparent and in a first-class place actually.

YPFS (SK): Yeah. I have a lot of those same observations and recollections myself. You triggered a thought, which just thinking about that time call it '06, '05, early '07 even when you really did have, almost like politics today, there was nobody in the middle. Everybody was either fully on board on the long side or fully on board on the short side. But unlike politics today, the two sides could have a polite conversation and debate.

Stoker: Yeah, for sure.

YPFS (SK): I remember going to some of those conferences in Vegas and other places, and I think that you were at some of those with me. The two of us and 6,000 of our closest friends. But I remember having those debates with people, whether they were CDO managers or insurance company investors or whatever and listen to other people at those debates. I'd be curious what your recollections or observations about that time period was.

Stoker: Yeah. I think it was all friendly and happy everybody was happy to debate it. I didn't have to debate it because I was not buying or selling anything. I was just processing spreadsheets and papers.

YPFS (SK): What was interesting is you had people from both sides exposed to the other side's argument. Also, given what we all did, we all had a financial incentive to really think long and hard about, "Hey, a lot of people think

the opposite of what I think. I better really evaluate their argument and make sure that I'm not missing something." Either it didn't happen, or people were just unable to be convinced.

Stoker: Yeah. Well, everybody's got a different opinion. Everybody has a different opinion. But I don't remember anybody saying the world was going to blow up. I don't remember anybody saying housing prices were going to drop by whatever they dropped, 20% nationally. I don't remember anybody saying that. If you were shorting bonds, you hope to make a few percent probably. Someone might think a bond was worth par and if you didn't like RMBS, you might say, yeah, that's worth 95. I didn't hear people going around saying that bond's worth 50 or zero.

YPFS (SK): Yeah. Except that because of the magic of the leverage in these structures, you're right. I was on the short side, and I did not see this level of price decline in the housing market. If I did, I could have done a lot better just shorting more senior securities. Right. The flip side, though, is when you're shorting the BBB tranche of a subprime bond, you didn't need 20% price declines. You needed a fraction of that in order to make those bonds worthless.

Stoker: Yeah. That was shocking. That was really eye-opening when people started to see problems in the market and be like, "Whoa, if housing prices are dropping and going to drop 5%, that'll wipe out all BBBs, which wipes out the AAA on that CDO," and be like "What, holy cow!" But people prior to that just didn't expect housing prices to drop like they did, and now the housing prices are back.

YPFS (SK): That's the part of all this that still confuses me is how people could be sure that home prices were not going to drop at all even after they had just gone up 20% over two years.

Stoker: Yeah. I think that sector is viewed differently than other securities. Housing is just like some first-class gold sector that's like a special asset where they're like, "Oh, over 100 years ..." And managers would bring out some statistics to show how housing prices have changed over the last 100 years and they've never had a down year or something that, they might say, never went down more than 2% or never down nationally at all.

YPFS (SK): Yeah. I think that was it. It was the "Never on a national basis had it been down since the Great Depression."

Stoker: Yeah, right. Everybody just believed that. They were like, "OK, what's the probability that nationally it would go down?" And that's maybe some low percentage, but what's the probability it goes down 5% or 10%? Very low. That was everybody's view.

YPFS (SK): **Yeah. Although I'm not sure that some of those BBBs would have survived even if you would've applied this sort of regional shocks that you actually could have looked at, like the early '90s shock in California home prices or the late '80s in New England. California homes were enough of these subprime pools that even a regional shock in the wrong place would have done some real damage.**

Stoker: Yeah, maybe. I almost never paid attention to states or regional analysis like that. I believe you, but it's not something I've looked at.

YPFS (ML): **Before Steve's question on the current context, I just had one summary takeaway question from your interview, Brian. You've put a doubt on several of the "culprit"-type stories we've heard - the ratings agency issuer-pay model, the media criticism of shorts, the magic of the transformation, even on some of the risk management practices. You've described nuances in the securitization processes that speak against these explanations. As you look at this big event, in your view, what was the weak link in the system? Is there a weak link other than this wrong assumption about housing?**

Stoker: Yeah. One of the questions was going to be what we could have done to prevent this. I don't know, I think markets go up and down and there's no way to prevent it. I don't like regulation in general and I don't see how regulation would have stopped it. Markets go up and down, stocks go up and down, housing prices are up right now, way past where they were 13 years ago. Prices go up and down. Bitcoin's up. What are you going to do about that? Tesla stock is way up.

YPFS (SK): **Buy it.**

Stoker: Buy it. There you go. Buy and if it goes down, sue somebody. Buy and if it goes down, sue somebody. That's what you can do. Just don't sue me. Prices go up and down, and that's capitalism and that's life. Some people make money, and some people lose money.

YPFS (SK): **Meaning that cycles and booms and busts are just a part of the market, that there's only a limited ability of regulators or whoever to try to dial it down those ups and downs?**

Stoker: Yes. Yes. Regulators have no choice. They're way behind. They're years behind. They can only help you in retrospect with 20/20 hindsight.

YPFS (ML): **To your point about a Wall Street and the quality of people there, which I saw when I worked just a little bit on Wall Street. But the thing I think we have to recognize is these banks massively screwed up. In this whole equation, it's hard to get away from that fact. In a functioning market -- all the points you just made about regulation, totally accepted – there**

ought to be the shorts and longs and all this information like hedging, and it shouldn't be a huge collapse, like the tidal wave. The market's going to go down, it's going to go up.

Stoker: Sometimes.

YPFS (SK): At the risk of asking a provocative question and you can decline to answer it I won't take any offense. But you were a Citi when we're talking about the booms and busts and human nature and you were at Citi when Chuck Prince made the famous comment.

Stoker: Yeah. Dancing.

YPFS (SK): When the music's still playing, we got to dance.

Stoker: Right.

YPFS (SK): That's gotten so much press after the fact. Did people even notice that comment at the time, or what did people think about it within Citi when he made that comment?

Stoker: What year did he say that? 2006, 2007?

I think my reaction was "I need to slip a note under his door and say, you got to pay attention, dude." This is a big freaking problem. 2007 came and our mark to market losses on one warehouse, we were down $100 million, and we were complaining-

YPFS (SK): July 2007.

Stoker: July 2007, right. It was massive. I came into the office after New Year's in January 2007, and I got sat down with the head of our trading desk and his boss, and they said, all right, get all these deals done tomorrow, all of them. We pushed really hard to get them done as fast as we could. We tried to do the riskiest ones first, but the losses were piling up fast.

I remember I think, end of March, we marked one warehouse down $100 million, and we hadn't even marked the whole portfolio. We were like, how could that be right? We were complaining to our trading desk, and they were like, "No, that's right," and kind of fighting with them. "Are you trying to make up some low marks?" What's going on here? But it got really bad. In June you said, Chuck Prince was dancing.

YPFS (SK): July 2007.

Stoker: In July he was still dancing? And I was thinking, "Man, this is bad. We got 40 billion of the stuff with a commercial paper exposure." We had figured out by

that time that these BBBs and As and AAs could really get blown up and wipe out or really hurt the super seniors.

What's interesting, these banks are so big. That's one thing I was disappointed in that the information didn't travel up to the senior executives very well, nor was it connected. I've read about banks were giving out the mortgages to people and then just before they securitize them in RMBS, there would be first payment defaults, and the banks would say, "OK, we'll put that back to the originator and collect a fee." But nobody told the CDO desk or told Chuck Prince that, "Hey, by the way, these things are starting to go bad. You're retaining a lot of the super-senior. You have a lot of exposure there and you have humongous warehouses." The banks were just so big that the information was too spread out and didn't get around properly.

YPFS (SK): **That's interesting. I guess we've gone past our hour and very much appreciate you taking the time. But I'd like to close with the question I teased before of what parallels, if any, you see in today's market. You already mentioned Bitcoin as well as the housing market today being quite fully priced.**

Stoker: Yeah. You see markets go up and down, prices go up and down. Housing prices that you say, oh wow, that was a bubble in 2007, but housing prices are higher now. Internet was a bubble in 2001 and blew up, but it's way higher now. I don't know if it's double or what Nasdaq was back then, but way higher. These drops actually seem like teeny when you start to look at a historical graph, you can hardly even see the drops on the graph. Parallels today? Yeah, housing prices are way up. If you go buy a house and if you lose money, you're going to sue somebody and say, hey, why did my house price go down? No man, that's how life works. That's how prices work, up and down.

I think one of my favorite words I learned from my lawsuit, the jury foreman gave an interview afterward. He used the term "cognitive dissonance," which I never heard that before. I Googled it. I looked it up. Cognitive dissonance, you hear something so many times in the press about how terrible Wall Street is and how they shorted securities and they turned garbage into gold, how did they do all this stuff. You've got all these stories out there that make people think that there was terrible stuff going on, but I think it was not true. I don't think it was true at all.

YPFS (ML): **Well, we could go on with you on that point.**

Stoker: What do you think, Matt? Go ahead.

YPFS (ML): **Yeah. I think the story stuck. Everybody wants to point finger at something because it's so mad.**

YPFS (SK): Yeah. You lose money, you got to blame somebody.

YPFS (ML): **Everybody's hurt by this recession. It hit a generation. It was massive. But there's the story. It was the story of Michael Lewis in the *Big Short,* "They pumped a lot of crap, they made all this stuff." I've been asking that with different people across the spectrum, Federal Reserve Governors. There are these dissident views, but they don't have as good a story as the liar loan, the hustler originator, just slice and dice and send it to Wall Street, you guys do your magic, send it out to willing banks all around the world, sell the garbage, make money, and walk away. That's the thing.**

Stoker: Yeah.

YPFS (SK): **I guess it's no surprise if booms and busts are part of human nature, then I think scapegoating is also clearly a part of human nature. When bad things happen, there's got to be a clean story of whose fault it is. Nobody wants to hear that it was just diffuse, lots of people acting on their self-interest, and nobody really doing anything wrong. That just doesn't satisfy people to hear even if it might be the truth.**

YPFS (ML): **The way in is to show them that their understanding is wrong. The Big Short, the whole Wall Street "Doomsday machine" that forced the Feds' firefighting. "You got that wrong. Look, I bought it, many of us bought the common narrative. But it's wrong and this is important. Let us tell you what really drove the collapse and the response." You will get their attention for a moment. But I agree with your point, Steve. To dislodge the simplistic image of Wall Street villains, your better explanation needs to have human agency in pretty concrete terms.**

YPFS (SK): **Wall Street has done a very poor job of explaining the value that it creates for society and you combine that with the amount of money that lots of people make ostentatiously and it just makes for an easy target. Then you get comments from people like Lloyd Blankfein about doing God's work, which I think are not well received.**

Stoker: Yeah, it was a mistake.

YPFS (SK): **I understand what he was trying to say and I agree with the underlying sentiment, but wow, that certainly wasn't a comment that made it through the Goldman Sachs's PR department.**

Stoker: No. Matt, I wouldn't mind going through with you a little story that you were just saying about all the steps. Going through each one of those if you want.

YPFS (ML): **But, Brian, I think what we want to do is find the takedowns to the common received wisdom and then from there you add, then people are like, "Oh, well, then what was it?" and "What was the biggest thing that we get wrong" The ratings agency, to me, from this interview, is the big**

takeaway because that's what we hear. The ratings agency was playing one off the other, and then you said they weren't really.

Stoker: No.

YPFS (ML): We've got to interview and find out, is that true, is that widespread.

Stoker: No. I think actually if there was fraud going on, I would say it was on Main Street. It was the realtors and the appraisers out there wheeling and dealing, but I don't even want to blame. That's the market. I think that's OK.

YPFS (SK): Well, there's no question that was happening.

Stoker: Yeah. They were all laughing.

YPFS (SK): But that also is only part of the story.

Stoker: Yeah, just the part. I don't think it's a cause of it. I don't think it's the cause of it.

YPFS (SK): It may be that you had a confluence of multiple things. You had some things that might have been fraudulent or illegal, like with some of the mortgage brokers were doing, combined with people acting in their self-interest, combined with poor regulatory frameworks, and combined with just bad luck.

Stoker: Right.

YPFS (SK): When you mix it all together, it's like when you take like chemicals and they're all stable on their own and when you mix them together, they explode.

Stoker: Yeah.

YPFS (SK): It may be that it's a complex story because it doesn't follow the Hollywood framework of one bad guy that can be clearly defined, but that I think is unfortunately the reality.

Stoker: Yeah.

YPFS (ML): Yeah. That's interesting. I want to know what you think about this take, Brian, that can go two ways.

One way, Rick Mishkin, he was on the Federal Reserve Board and a financial economist, he called it a "rogue wave theory." Just like Steve was saying, when that big tsunami comes, there's like seven different things that come in at once. It's a one-time thing. It's not likely to happen again.

On the other hand, we get stories from insiders, from people at the top of the financial system of dangerous stuff, of scary stuff of basically Fed fueled easy money, reckless reallocation, and the simple idea they're doing it all over again. They're just doing the same thing.

"It's never going to happen again," versus "We're actually doing it again." Which do you think?

Stoker: Well, it'll happen again. Maybe a different sector. We have a crisis every 10 years. They say it only happens every 100 years, but it happens every 10 years, whether it be a tech bubble or before that you had commercial real estate in 1989 or so. Those are markets. They go up and down. Unfortunately, it's not like a nice pension that's stable. A lot of people out there invest, and those prices go up and down. They don't go up in a straight line.

YPFS (SK): In some ways it's very simple. Markets go up, people behave in a certain way, they take just a little more risk than they did before, they get a little bit more relaxed in evaluating risk the way that mortgage originators started becoming a little bit more comfortable with higher LTVs, and then no-doc loans and step-by-step subtle, it's like the lobster in the pot boiling as you turn up the heat slowly.

Stoker: Right.

YPFS (SK): Along the way the market's rewarding that behavior.

Stoker: Yeah.

YPFS (SK): It reinforces it and so you do a little more and it's human nature. By the time you get to a breaking point, it's often not because people wake up and say, the emperor has no clothes. It's often that you just run out of buyers.

Stoker: Could be. That's the market.

YPFS (SK): Then once it turns, people re-evaluate the risk because they can't ignore it and it unravels very quickly.

Stoker: Yeah. I always noticed managers we worked with would have rules of the types of stuff they want to buy. They look for certain states, certain FICO scores. Maybe stock investors, they only want to buy stocks that are up this year, but their P/E ratio is below 10. Well, you can't buy any stock like that. There's zero. What do you do? You change your investment criteria, because if you're buying stocks that's what you do. You can only buy what's available. It's very hard for anybody to sit there and just say, "Oh, it doesn't meet my criteria. I'm not going to buy it." Especially if you're a professional manager. If you're paid to invest, you have to invest.

YPFS (SK): **Well, that's what Chuck Prince was saying effectively.**

Stoker: Yeah.

YPFS (SK): **If he were smart, he would have tried to tell people after the fact that he meant the comment as a warning.**

Stoker: Yeah. What a mess that turned out.

YPFS (SK): **Well, let's hope that we're not in for a bigger version of that in the next couple years.**

Stoker: Yeah.

YPFS (SK): **But we might be.**

Stoker: You think so?

YPFS (SK): **It'll be different. The build-up of risk today is in different places than it was 12 years ago.**

Stoker: That was a mess 12 years ago, and the bankruptcies of Bear Stearns. Well, Bear Stearns got bought. Lehman went bankrupt. Just all the legal contracts, the synthetics was just such a mess.

YPFS (SK): **What frightens me today is that the risk is building up on public sector balance sheets, and what that means to me is that last time the system was safe because you had governments that could step in and backstop everything. But if it's governments themselves that are the source of the problem, who's going to step in and save us?**

Stoker: You think it's like federal government taking on much debt or-

YPFS (SK): **Not just in the US but globally, yeah.**

Stoker: Yeah. It's just shocking how our debts doubled I think since the last 10 years, US debt. One of these days, it's just going to get to be too much.

YPFS (SK): **It might double again in the next three weeks.**

Stoker: It might. January 20 is coming, here comes some free money.

YPFS (SK): **Joking aside, they're going to do another $3 billion. That's more than a 10% increase in total debt.**

Stoker: Yeah. It's wild.

YPFS (ML): **Did you get your checks?**

YPFS (SK): **I'm sorry?**

YPFS (ML): **Did you get your checks, you guys?**

YPFS (SK): **I did not.**

Stoker: I didn't get a check.

YPFS (SK): **I don't think I'm getting one.**

YPFS (ML): **Not everyone got one.**

Stoker: Yeah. This stimulus, I'm a conservative. I like smaller government and less taxes and less spending. I think government debt is going to destroy the US someday. I'm surprised it hasn't happened yet really. We have so much debt.

YPFS (SK): **Yeah. Well, it's not a path that's sustainable. It is a concern.**

Stoker: Yeah.

YPFS (SK): **All right. Well, that'll be an interview that we can do in five or 10 years.**

Stoker: Yeah.

YPFS (ML): **Well, we appreciate your opening up for a discussion, Brian, and leading us in these interesting places. On behalf of the Yale Program, your participation is really valued.**

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