Securities and Exchange Commission Historical Society
Interview with Erik Sirri
Conducted on April 29, 2015 by Will Thomas

WT: This is an interview with Erik Sirri for the SEC Historical Society's virtual museum and archive of the history of financial regulation. My name is William Thomas and the date is April 29th, 2015, and we're at Babson College. So, thanks very much for agreeing to speak with us today. We usually start with a little bit of biographical background, and I see you did a degree in astronomy at Caltech.

ES: I did.

WT: Maybe you'd like to start with that. Are you originally from California, and how did you get into that line originally?

ES: I'm a native Californian. I grew up out there, and my father worked for NASA so I grew up with space, I grew up with science, so I suppose it was natural that I went and did science, and so I went to Caltech and studied astronomy. The trouble with astronomy, while it's a wonderful field, it is a virtually unemployable field. It makes the field of history look replete with jobs.

WT: I don't know about that, but we'll take the point.

ES: So I did that, and then after I got through with that I worked for three years in the aerospace industry. For a little while, in summer, I worked for NASA, things like that, but I worked in the aerospace industry for three years after that in Southern California. There's lots of aerospace in California.

WT: And so then I guess you did an MBA after that?

ES: I did. I went to UC Irvine, got my MBA, that's where I learned about finance. I thought that was a pretty interesting field. Then I went to UCLA, got my PhD in finance, and finished that up in '89.

WT: How did you decide to do a PhD? I know, of course, that finance was becoming increasingly dominated by economic-type models, so was that kind of your wheelhouse from having been in astronomy?

ES: No. You know, it's funny how the world is. I was bound and determined to get my PhD because I saw economics and I thought it was a great job. And I went out and got a beer one night with a guy who was getting his PhD in finance, and he asked what was I going to do as a PhD student. I said I was going to get my PhD in IT, because I was very comfortable with computers. He said, "Why are you going to do that?" And I said, "Well, quantitative background, I like computers, I understand this stuff." He goes, "Don't do that. Finance is better. More jobs." I said, "Really?" He said, "Yeah." I said, "Okay." And that was as sophisticated as my decision was. It was maybe a little more than that, but really it just seemed like I was almost indifferent between the two and that's how I did it. And then it was a good choice, because I enjoyed it.

WT: So then were you were looking to kind of do a research career from that basis?

ES: Yeah. It's like all things. I don't know if you ever get a PhD if you think you're not going to have a good shot at doing research, so my only purpose was research. So, in my case, it took about five years to get my PhD at UCLA. You come out and you look for the best research job you can get. You look at colleges and universities across the country, and that's exactly what I did. I ended up going to Harvard.

WT: Business School?

ES: Yes, Harvard Business School. Absolutely, Harvard Business School, in finance, and it was a fine place to learn about finance.

WT: So what kind of research were you doing then?

ES: My PhD thesis was on markets and, in this example, how the New York Stock Exchange worked, the actual mechanics of trading on the New York Stock Exchange. Today, it's a big issue. People talk about market structure a lot. Now today, words like high frequency trading are common, but the mechanics of how the stocks traded at a very granular level was not really much of an academic pursuit at the time, so I happened to just be interested in that. It was very quantitative, very analytical. So I pursued that for my PhD thesis.

WT: Formal models and that sort of thing?

ES: Formal models, analytical models, but mostly empirical work. And so there were just data sets coming out that had information that would be every trade that went off on every exchange in the country, time stamped to the second, which for us was phenomenal. The idea that you could know second by second what happened was almost beyond belief. Now, as you know, we're down into microseconds. But at the time, that was pretty fine and granular data.

WT: And so you stayed there for how long?

ES: I stayed there until 1995.

WT: And then you came to Babson College before you ended up at the SEC.

ES: That's right. I came to Babson College in '96, was here for I think just six months, and then I went down to the SEC as the chief economist for about three years, from mid '96 to mid '99, roughly.

WT: How did that opportunity come up?

ES: I was giving a talk for the New York Stock Exchange at a conference in Florida, and it was held at a hotel down there, and one of the commissioners, Steve Wallman, was in the room. And I gave a talk on something related to trading for the New York Stock Exchange at one of their conferences, and afterwards he said, "Do you want to have a drink?" We had a drink, we chatted. He said, "Would you be interested in being a chief economist?" I said, "No." And I went home that night and I told my wife that—I called her and told her that—and she said, "Why did you say no?" I said, "Well, we're living in Boston. They're in DC." She said, "Well, you should talk to him." So I called him back the next day and said, "You know, on second thought, maybe I would like to learn more about it." And so the process began.

WT: So now tell me a little bit about, basically, what were you doing at the Office of Economic Analysis in general? How big was the office and what was its main function within the Commission?

ES: The SEC is consummately a lawyers' agency. At the time, it was 3,000-plus people, and the modal job was an attorney. There were a few scattered non-attorneys. They might be in OC; you would obviously have accountants in the Office of the Chief Accountant in CorpFin. This office held exclusively people with backgrounds in finance and economics. You would have, at the time, ballpark, low thirties. Thirty-three, thirty-five people, something like that, total. I was the chief economist.

We would have within that a group of programmers, say six programmers. We would have a very small number of people who were permanently on the staff who—I don't know if any of them were classically research-type trained—but we made use of a program the government had called the IPA program, the Intergovernmental Personnel Act, that allowed us to attach or hire people either from other agencies, which we never did, or academics. So we would reach out to universities and bring people in that had degrees in finance and that had an interest in regulation. They would come visit us for a year, two years, what it was, and so we probably had six or eight of those folk. There were some other just regular staff folk. So, I would say, in total, about low thirties, thirty-three, thirty-five people.

WT: And had you intended to just stay for a few years and then come back here?

ES: Yes. I was always an academic, so I liked being a professor, and I didn't know whether I'd stay one year, two years, three years. I ended up staying three. The remit of that office, its job was to provide economic support to the Commission in its policy functions and to provide input to the chairman, to the extent he needed it, for things he was doing. So, for example, a lot of the rules the SEC crafts, a lot of the policy decisions they make, have genuine economic consequences.

If you're going to craft a rule about how equity markets work, about how bonds trade, about the kind of information you need to release for a corporation, that affects the price, that affects who owns the securities, that affects the allocation of capital in the economy.

Those are all very economic decisions. In many ways, I think it was surprising that there were only thirty people who had an economic background in an agency of 3,000, but I think that reflects the history of the SEC and how it began.

But, that said, that this group was good at providing that kind of analysis, we provided it to the rulemaking divisions. We would provide it to Enforcement, so Enforcement would from time to time have issues that had economic consequence in them. They caught someone doing the wrong thing they thought, insider trading, bad disclosure in a mutual fund, whatever it was, and we might help them make the case that, in fact, what they thought was true was true, or we might calculate disgorgement or damages for them, help them say this is how many million dollars you should be going after because this is the harm.

WT: Would the questions come to you well formulated, and would they generally be from division directors or from Arthur Levitt, or how would that come in?

ES: Well, it's a funny thing. I think for the most part—and these were different times—the division directors would just as soon not have had input on economics, because they had their own programs, they knew how they wanted to administer the securities laws, they were smart people, they understood the laws, they had their frameworks. And there wasn't a big push to have economics become a part of the decision making process. Most often, the economic analysis came after the fact, by which I mean it came—and remember, we're talking about 1996 now—at what people call the back end of the release. So if you're crafting a release to change the rules associated with, say, corporate disclosure or mutual fund disclosure, as a part of that rulemaking you'll have the substantive portion. "We've changed the rule from A to B."

You'll also have some what are known as backend portions, the Regulatory Flexibility Act, what people call major-minor, the Paperwork Reduction Act. These were requirements the SEC had to go through, the statutory requirements that they had to live up to. They were usually addressed after the key policy decisions were made, and often after the rule was written. So the rule would sometimes come to us and say, "Do the Reg Flex, do the Paperwork, do the major-minor, do whatever this is."

The SEC, as an independent executive agency, has no mandate to do cost-benefit analysis. It didn't then and it doesn't now. It doesn't have a mandate. It's not like the EPA. So, cost-benefit analysis was done to the extent it had to be done, and in some cases there was almost nothing done, in other cases there might be something.

WT: What kind of methodologies would you use for cost-benefit analysis?

ES: You know, I'm not sure we ever really did it the way it's done now. The world has changed a bit now, and I'm sure you'll get to that. But at the time, it was very ad hoc. Like I say, I think most of the analysis that was done at the time was aimed at those core statutory requirements. There was very little that was done that you would call true cost-benefit analysis, where, for example, you might analyze the market failure, like, what's broken, why are we doing this? Quantify that, and then say well, what are the alternatives? I could solve that by method A, method B, method C. What are the costs and benefits of method A, method B, method C, and who bears those costs, or who receives those benefits? Lay that out formally, and then come to a decision. That, I don't think we ever, ever did. Occasionally, we would try and quantify some benefits or some costs, but often it was a very difficult exercise. And for the most part, at that time it just wasn't required, or folks weren't really interested in it at the time.

WT: I know that later on—and you'd have been in Trading and Markets I guess when it became more of an issue—but with the Chamber of Commerce and Business Roundtable challenges to some of the rules of the mid 2000s, those were directed at these cost-benefit analyses. Was it, in a sense, a vulnerable area because it wasn't required to be done in a certain way?

ES: I think it was. So my view would have been, I always thought it was interesting it took so long for people to realize the shortcomings there on some of the work. Now, I think the D.C. Circuit saw that and thought the SEC was not paying appropriate attention, and you got those decisions. I think also things that weighed in to that were the times were different, Congress was different. A lot of pressure from Congress over that period of time, especially the Senate, Senate Banking, pressed to get more economic content into the regulation, I think, and more economic analysis, meaningful economic analysis.

I think there was also, at times, the fear within the agency that when the administration or when Congress was interested in this, and particularly when Congress was interested, if you didn't do it, even though you didn't have to, that was a really good way for someone to give you the requirement to do an EPA style cost-benefit. That never came to pass, and I think partly because people saw it defensively, maybe we better start toeing the line a little more. Of course, today it's much different. Good stuff's been done.

WT: Did you have much interaction with the chairman? I guess it was Levitt at that time.

ES: You know, yes. I think some of it would be formal, senior staff meetings every week. Some of it would be informal. There would be an issue that comes up, so you have a meeting with them. It would just come up on a matter of substance, sometime a matter of process. Chairman Levitt had certain things he was very interested in and extremely effective at. There were other things he was somewhat less interested in. But if it was one of the ones upon which he was engaged that he thought was particularly important, then, I think the answer would be yes.

WT: I'm wondering about the relationship with Market Regulation. Richard Lindsey would have been the director there at the time, and he was your predecessor, I think, in that office.

ES: He was.

WT: And of course, when you came back, you were at Market Reg, Trading and Markets.

ES: That's right, when I came back.

WT: So was there kind of a special relationship there between those two areas, especially given the more economic aspects of the exchanges and such?

ES: That's an interesting question. The person who ran the Office of Economic Analysis, the chief economist, as you would guess, always had an economic or finance background. The person who ran the Division of Trading and Markets had, up until Rich Lindsey, as far as I know, had always been an attorney and has always been an attorney since, I think with exception of when I did it in 2006.

So I think the answer to your question is it's not a coincidence that in both instances, that if you were going to put someone who was a non-attorney running a major office, that was a sensible one to put them in because a lot of things that that division does has economic content to it. Not that the others don't, but it's a relatively straightforward thing to see, especially in the area of market structure. Market structure, a few times in there, was an important issue, especially in the time Rich became the head of that division.

Rich, when he did it, moved directly from Office of the Chief Economist to running that division, which at the time was called Market Regulation, so he just transitioned from one to the other. When I did it, I left in between for six, seven years and came back. But I think your point is right, that if you're going to put someone who doesn't have a law degree, or a non-attorney in, there's easier and harder divisions for them to run, and that one probably lends itself perhaps a little more. One that wouldn't lend itself at all, we'd say the Office of General Counsel, right? You had to be a lawyer to do that.

WT: So were there any areas of particular development or particular issues that occupied more of your time than others? A notion that I had to ask about was it's at this time that Long Term Capital Management collapses—so were the more novel forms of risk represented by an event like that something that was particularly significant.

ES: Yeah, I think in that timeframe, big things that we were doing, one of them would be the redoing of market structure. If you recall, back in the mid-'90s you had the situation where the problem on NASDAQ with odd-eighth quotes came in. You only had quotes that were uneven eighths. So there were what amounted to missing quotes, and when people probed further, they realized that the markets weren't fully integrated.

There was the public market that you would see, and there were so-called inside markets, or markets that were really only accessible to professionals. So our markets weren't as integrated as they could be. As a result, the public wasn't getting the best prices for their securities. The inside market would be tighter, dealers could trade at tighter spreads than the public, the public would end up paying more for securities or receiving less if they sold them.

So, ’95, ’96, and later ’98, there were some changes made to the markets that brought the markets together, and this was probably the first important step in integrating them. They were known as the Order Handling rules, but I think their formal name was Order Execution Obligations. They integrated in things called ECNs, electronic communications networks, to the exchange markets, they provided for somewhat better communication. Also, a couple years later, a rule was done related to ATSs, alternate trading systems, that defined them as non-exchanges, as brokers, set the terms by which they could grow and exist and foster. It really, in a way, was the first of two rules that set the core framework that sets up the U.S.’s money market structure today, I think.

So that was a big task. At the time, there was a lot of work done around that. You pointed to Long Term Capital—obviously a big event in the capital markets. From the SEC’s point of view, of course, while it was a disruption to the market, it wasn’t a registered entity so it didn’t represent the failure of one of our firms or something like that. But it was one of the most recent, and at the time, raised a shocking instance of where you had an unregulated entity that could pose a serious shock to the financial system, one that required coordinated aid from senior financial regulators, the Fed in particular. So that was quite a time.

WT: Going back to the odd-eighths thing, I ran into a reference and I didn’t follow up on it. There was concern about odd-sixteenths after they went to that, and I was wondering if anything came of that.

ES: You know, I don't recall that at the time, an odd-sixteenth. I have a vague recollection of that topic, but I can't recall what came of it.

WT: They went to decimalization very shortly thereafter.

ES: Right. See, so this is where this came up. That's where I was going with this. So yes, you're right. So, once you start trading, you're now trading on sixteenths, and there's always been, and there remains today, a question of what's this finest increment on which you can quote a stock? An eighth is about twelve cents, sixteenth's about six cents, a penny is a penny. And there was a push, both within the Commission and outside the Commission, to bring the quoting increment down from a sixteenth to a penny, the idea being that if they're quoting increments of sixteenths, six cents is the minimum spread, and that's a cost that people pay. If you brought it down to a penny, it's possible stocks traded at a penny. And so something that traded at six cents could now trade at a penny; the public would save money.

And so there was pressure that way. There were acts introduced in Congress. Some commissioners, I think Steve Wallman in particular, pushed on this. But, you know, some of the exchanges pushed back. So my recollection of what happened, but I can't say for sure, I think it was Bernie Madoff who really broke the sixteenth, as I remember, because I seem to recall that, you know, the New York Stock Exchange always held itself out as the best market in the country, and so if you came to New York you got the best price.

Bernie Madoff started auto-tracking the New York Stock Exchange inside, and I think what he did was he started quoting inside New York and tracking them, and so he just made sure they weren't the best price. He was what was known as third market maker at the time, and that business was quite apart from why he later became notorious; this was his market making business. And I think when that happened and New York was no longer the best price, I think that kind of put an end to some of those larger increments and hurried the onset of the penny increment.

WT: Oh, very interesting. I didn't read all of your various publications, of course.

ES: And that's probably a good thing.

WT: But I did glance through some of them, and one of the things that kind of jumped out at me was some analysis of kind of tiered regulation between very large, sophisticated organizations, and then less large organizations, and the economic consequences of that. Could you tell me a little about that, if you think it's significant?

ES: Well, tiering can happen in regulation in a number of ways. There could be tiering of the institution that could come about, so a very, very large firm could face different regulation than a small firm. You could also get tiering by who their counterparty is, the investor. So the idea being that a large, sophisticated investor—Harvard's pension fund—might not need the same protections as my parents when they went to buy and sell a stock or a bond. And so there can be tiering that way.

I think most people thought about tiering in that latter way, so even to this day, there are protections that retail investors are afforded, and in fact are required to get, that in the markets, if you're a sophisticated professional, there are various designations that can exist. You can be a QIB, a qualified institutional buyer; you can be, in the municipal markets, a sophisticated municipal market professional. Whatever they are, certain protections are waived, and from your perspective as the institutional investor, you may get better terms of trade or more efficient trade. Of course, you're treated as a big boy, and some of that hand holding goes away. I think that's efficient regulation in a lot of ways.

There's always the question of, well, if you're rich, that doesn't mean you're smart. That's always a concern. It's a concern for individual investors, but it's also a concern in some instances for institutional investors. You may have very large state pension funds or municipal organizations that have less than sophisticated entities running them. They're not someone who spent twenty years at a Wall Street investment bank. They're someone who, perhaps, came out of some kind of municipal job and just switched over to run this thing. There could be a lack of sophistication there, even though they may control a pot of money that's in hundreds of millions of dollars. So that's always a concern. I think other countries deal with this as well. The UK has always tiered, as I recall, their investor protection regime, and we do to an extent.

WT: On the subject of municipal securities, did you get into that quite a bit at the time? Of course, I mentioned we're doing this gallery on it, and so I'm kind of curious about your own history with the subject.

ES: I would have to say that in, let's see, the '96 to '99 timeframe, I have no recollection of ever dealing with municipal securities at all. It may have come up, but when I was chief economist, I just don't remember dealing with them at the time. In 2006 to 2009, I ran the Division of Trading and Markets. So there, when I came to the division, you know, you sort of take stock and look at what the groups are and what they do, the number one issue I identified as a concern was municipal securities.

Now, it turns out nothing bad happened there particularly. But I looked at it and I identified it for myself that way because it's an over-the-counter market; it's got individual investors, by and large because of the tax advantage; there's virtually no pre- or post-trade transparency associated with that market. EMMA came in so, at the time, you started getting some good post-trade transparency but it wasn't really very effectively used. And the primary market disclosure is horrific because of the Tower Amendment.

So EDGAR gives you 8-Ks, Qs, 10-Ks, all sorts of stuff, proxies, about a corporate entity. You can get all sorts of primary information in the corporation's reliability for that. Municipal entities don't have anywhere to really file those documents, nor are there any requirements to really file those documents, because the Tower Amendment stops the SEC from saying you can't issue securities unless you file a prospectus. There is no requirement like that. The SEC does something different when it tries to get a hold of it, which we can talk about if you want.

So when I saw those things together and then I saw there were only two people in the municipal securities group, two, two and a half people, I thought, "How is this not a bad thing?" Retail investors, bad information, bad trading systems, and no federal oversight. If that thing ever went south and people said, "You mean you have two people regulating that market?" that was just going to be a bad day that you could never, ever explain.

And, as it turns out, nothing happened. In fact, some improvements were made, some good incremental improvements were made by the MSRB over this time that it's better. I think a lot of work remains, but it's a good example of where you look, you think you see where the trouble is, and nothing happened.

WT: Well, we may come back to that, because we skipped ahead a little bit. Should we talk about anything else with the Office of Economic Analysis?

ES: You know, I'm trying to think of what else we could talk about. I think it's interesting because that time, if it has interest at all, it's because it's so different then than how it's become now, and so I think it sort of serves as a good anchor point. One of the past commissioners was remembered in the Office of Economic Analysis for his statement that the SEC having thirty economists is like the FDA having thirty chemists. He just thought that just was not a good idea, and kind of indicated that you probably weren't watching the way you should. But, like you said, I think it reflects the history of the Commission, and I think the senior staff says we're administering the securities laws as they were given to us, as opposed to looking at it from a market perspective.

I will say, at the time—and I did remember this—there was an interesting lack of market intelligence in the Commission. That is, it was really no one's job in the building to know the answer to the following question: What's going on in the IPO market today? How are bonds trading? Are there any serious problems in the options markets with regard to, you know, what are they telling you about volatility?

WT: Just at a pure economics level rather than surveillance levels.

ES: On a pure economics level, saying how is the market functioning in carrying out its basic capital allocation duties. Lots of knowledge about securities laws and securities law violations and where the laws weren't measuring up, but not the kind of knowledge where someone could come up and give a briefing to the chairman on the spur of the moment about sort of what's the state of the muni market, or what's the state of the equity market.

And the reason I mention that is it's in contrast to something like the Fed, where the chairman and the board of governors do have a group of people that have that knowledge. And it has, every so often, come to the fore more recently I think in issues like credit rating agencies, money market mutual funds more recently, where really I think one of the things we saw was the Fed had a lot of knowledge in the area, knowledge that went beyond what the SEC had in terms of the actual functioning. It's just what they were looking for was different than what we were looking for.

WT: So let's talk a little about the changes in the office. Of course, you don't come back to that office, so this is probably a good time to handle it. When did those take place, what were the key ones, was it a larger office, that sort of thing, and what were the primary motivations behind that?

ES: Sure. I didn't run that office, so this is all sort of from memory and other things I know, but I think what I'd say is it was a gradual evolution. As I said, Congress changed, things happened in the courts, the SEC lost a few important cases related to funds and other things that I think showed the need for economic analysis. Structurally, the office grew, staffing increased, and then it eventually became a division, and I think that's all for the good. The process changed as well, where more recently, sort of the last few years, a more formal process is put in to codify how the kind of analysis that office is capable of doing comes to be included in rules.

In addition, a document was produced that set up the guidelines for codifying how cost-benefit analysis is to be done. So all those things happened. Most of them happened, I'd say, in the last three or four years, but it was a gradual evolution. The office got slowly bigger and I think became more important. The Commission saw the need for that. Could it change? Sure. I mean, it may fade over time, I don't know. But I think the longer it stays a tradition and gets ingrained in the process, and the more the Commission learns to use what it gives you, you'll just have a better product. You'll have better regulation, you'll have better oversight, you'll have better policy.

WT: So then you came back to the professorial life for several years.

ES: I did. Yeah, in 1999 to 2006, I led the quiet life. I was a professor. It was a good time.

WT: And it was here at Babson College, which, I guess it's an entrepreneurial focused institution?

ES: It's a private New England business school, and it's got undergraduates, MBA students, I think it teaches all subjects. It positions itself most strongly along the line of entrepreneurship. Business schools compete just like everyone else, and the school's chosen to pick entrepreneurship as its tagline and where it positions itself, and for the most part it's worked.

WT: Okay. So, unless you want to talk about anything in particular about your research, what brought you back to the SEC?

ES: Well, I guess it was a little like the first time. I got a call. In that timeframe I stayed in touch with individuals in the agency. I think there's a history of SEC alums trying to be helpful to the agency when they can, consistent with what their position is. So periodically, someone would call and say, "Hey, what do you think of X?" or, "What are you hearing about Y?" without telling us what the context was, but we all understood that they were trying to just get a read. Or someone might ask from the one of the offices, "What does the academic literature say about this policy question?" just to get a read.

So, I had gotten a call at one point from someone saying, "What do you think about the agenda of this division? What do you think about the agenda of that division?" And so I offered my opinion. I wasn't sure why, but someone from the chairman's office had called about that. And then I got another call, and it just led to a process where eventually they said, "Yeah, we're looking for someone." I went down, visited with some of the commissioners, and then I started in September of 2006.

WT: Okay. So first, just kind of at an atmospheric level, was the SEC a different place? Of course there was a different chairman, naturally, Chris Cox now, was it?

ES: Yes, it was Chris Cox.

WT: Yes. It's in the aftermath of the problems in the early 2000s, that sort of thing. If you can encapsulate that somehow.

ES: Well, yes. So, I can think about what the issues were at the end of '99 when I was leaving, and then in 2006 when I came. I remember at the end when I was leaving, the concern was that we had this big bull market and tech stocks were going. And remember, things were going strong in 1999, which is when I left. And Arthur Levitt, I remember him saying in staff meetings, he would say, "Aren't you guys worried? This is just crazy stuff. People are saying it's the new economy and who worries about cash flow and whether you make money or not? It's all something different." And sure, but from the SEC's perspective, you're administrating the securities law so you're looking at, are they disclosing things, are you doing this and that?

The Commission was being pushed in interesting ways. The Commission actually got to the point where you always reviewed IPOs, but the IPOs were coming so hard and fast that some IPOs were going off almost without staff review, I think literally without some staff review, and that was just unheard of. The rate of explosion of the capital markets, the staff couldn't keep up with it. That was '99, and you were really riding this bull market. 2006 was very different.

So in 2006 the concern was competitiveness. And the concern was that, at the time, and you say it's the atmospherics, that the United States was losing its grip in the capital markets. I can't remember if it was 2005 or 2006 when the lead stories was about the ten biggest IPOs done in the world, none of them were in the States. So it was the idea was that the United States was choking off its capital markets by excessive regulation. That was part of the atmospherics. Harvard had the competitiveness study, the Bloomberg competitiveness study, and there was a third one. It might have been the Chamber that did it, I can't remember. But there were three of these that were out there saying, look, you got to have principles-based regulation. Too much of these rules. You've got to foster more economic growth. And they had data they were pointing to. It was not pie in the sky. So there were real concerns that way, and I think the tone of regulation reflected that in part, not just in the SEC but across regulatory agencies.

WT: So would it be sort of a smoothing out—of course, when you were there, even with a Democratic administration, there was a deregulatory tone with Gramm-Leach-Bliley, Commodity Futures Modernization Act.

ES: Right.

WT: You don't have that so much in the wake of Enron, per se, at least that macro level, but what was the tenor of these conversations? How were they trying to make changes?

ES: One that comes to mind was, for example, hedge funds. So, the SEC's a member of something called the President's Working Group, at the time. There was no FSOC then. So the entity that dealt with financial markets across agencies that would meet to consider issues that might be interagency regulation was known as the President's Working

Group. It would be composed of the heads of Treasury, Fed, Comptroller, SEC, CFTC—I know I'm forgetting some others—Housing, Council of Economic Advisors, so those folks would be on it. And the meetings would typically be held in Treasury. They would be principal plus one or two, so we would have these meetings every couple, few months, and the issues would vary.

But at the time Hank Paulson was the chairman, and hedge funds would be a topic that came up. And the question was what to do about the regulation of hedge funds. Now, hedge funds, as you know, well, the name hedge fund may not be that meaningful, it's an investment company that's not a '40 Act company; it's not registered as such. It goes through some steps so it makes sure it's not regulated, mostly having to do with who invests in it. And overseas, especially in Germany, there was some concern that hedge funds were doing the wrong thing, that they were bad for the markets. In fact, the German word for hedge funds that I remember was the German word for locust.

And Germany was pressing the United States in some of the meetings, some of the global meetings, G7 and the like, saying, "Look, you've got to do something about these hedge funds." I think the U.S.—remember, this is the competitiveness situation—the U.S. was thinking, and I think as a matter of policy were thinking, "Well, there's a lot of capital formation that goes on from hedge funds, people are investing in them, they were growing, they were investing in some of the newer riskier ventures. That's good, that's how you get capital channeled." They were sophisticated people, so there wasn't a big worry.

And so we opted for a regime that you might call indirect regulation. That is, you could try and just grab a hold of the hedge fund directly, get rid of some of the exemptions in the securities laws and say, "You, Mr. Hedge Fund, you're regulated the same way this mutual fund is regulated." I mean, not identically, but just grab a hold of them directly. The SEC thought that was in the public's interest.

The idea instead was to go with something that people referred to as indirect regulation, saying, well, let's not so much clamp onto the hedge funds directly, but we do regulate some other entities like investment banks, their counterparties. Let's use investment banks, commercial banks, lenders, things that clear for them, let's use some of them to try and get more information about what the hedge funds are doing to gauge the risk of hedge funds and such.

So that was an example of where, in this case, Europe was pushing at grabbing hold of hedge funds more tightly, directly regulating them. The SEC, for competitiveness and other reasons, was trying to find mechanisms not to do that, but still pay heed to the potential concern.

WT: So, before we get into the big questions of market structure, market risk, I want to ask a very trivial question, which is the name change at this time, Market Reg to Trading and Markets.

ES: Yeah.

WT: Well, I read the press release, but I'm wondering what the particular impetus was.

ES: That's an interesting question. The name change I think had been talked about before I came, and as someone pointed out, we were the only division that had the name "regulation" in the title. I think the Division of Investment Management was Investment Management Regulation way back in the day. And so the idea—but it's a good point because it reflects the times—was there's a sense that it's not reflective of how the division looks at its work.

Obviously, we're regulators, but it lacked a certain enabling character that might be more aptly put in it, and you didn't want to be seen at that time as guys who were running around with a regulatory hammer looking for any nail. And so the idea was to change it to Trading and Markets. By the way, Trading and Markets was an old name. That name was a historical name. You can look in Seligman's book about when that name was in place, but I think in the '30s and '40s it was Trading and Markets.

WT: Yeah, I think it actually was until '72 or something like that.

ES: Was it? You might be right. So it had been that a long time. So while you're quite right it was a name change, and I would say the name change was reflective of the tone at the time, it was also a step back into a more historical name. But that's entirely consistent.

WT: Okay, so let's talk about just these broad changes in market structure, and we were talking about ECNs, ATS, and so forth before, but that's really kind of coming into its own now.

ES: It is. So what you had was, the rules in the mid-'90s, ATS and the Order Handling Rules, set up a world where you had a lot of trading venues now, and they're really—I'll simply it, there are three kinds, they're: registered exchanges, New York, Boston, Cinci, those sorts of things; it's NASDAQ. Actually, NASDAQ wasn't an exchange at the time, but you had registered exchanges. Then you had non-exchange entities that were like exchanges, ECNs and ATSs—Posit, Instinet, Archipelago, these sorts of things.

And then the third group of things you had as a market center were what you might call broker-dealer internalizers. These are people who have a business who hold themselves out as saying, "Send me your order flow and I will execute it for you." Names that would be in this space might be Knight, Citadel, UBS, these guys were in the business of executing almost exclusively retail order flow that could have been sent to an exchange but wasn't, it was sent to these markets.

So you have exchanges, you have off-exchange entities like ATSs, ECNs, some of them might be dark pools, and then you have internalizers. They're all operating differently and in a not horribly integrated manner.

And there were other issues that were coming up, but how they communicated with each other, the way signals went from each other, information, was through something known as ITS. Well, ITS was one of the things, which is a very slow, very ineffective communications network. And better systems were arising, kind of spontaneously, but in a non-very integrated way.

There was this question of quote sizes, which was always an issue. Can you quote in pennies? Can you quote in half-pennies? And the economic issue there was, of course, if you let people quote in different increments, it was not clear where this was actually going to stop, and then particularly, you could break something that's known as time priority. If I could just trade a little tiny bit better than you, an economically meaningless amount, then I could always jump in front of you.

There is a sense in our markets of, at least at a given price, first come, first serve. If you're the first person to bid twenty, someone wants to sell stock at twenty, you get it. Well, if I see you're at 20 and someone wants to sell stock and I quote 20.000001, well, I've quoted a better price, haven't I? So, I jump in front of you. Well, if that happens on an exchange market or one of these markets, there's no incentive for you to quote the price of twenty, because someone's going to always jump in front of you and offer a de minimis amount. So people wanted to pretty much do something about that. And the last thing that came up –

WT: If I can interrupt, that balances with the whole problem of the rapidity of order execution as well. So if you have a certain set amount, then it's who gets there first.

ES: Yes.

WT: So again, the microsecond issue.

ES: That's right. So we haven't even gotten to the microsecond, but absolutely, that microsecond issue obviously absolutely surfaces, mostly because of what are known as private linkages. But yeah, this will come up.

WT: Okay.

ES: It was fast then, but as you know, it got faster. And I think the last thing that was an issue at the time, and it still is an issue, is this idea of rebates and fees that are charged on an exchange. So usually, you think of an exchange as saying if I quote a price of twenty, you can sell stock, you can sell it at twenty. But it turns out, because there are various competing models for getting business in this world, one of them was this idea when I talked about broker-dealers internalizing order flow, there's a model known as payment for order flow.

If you were a broker and you got customer orders, you're a retail broker and, say—let's call you an introducing broker for sake of argument—you didn't clear. So you have retail orders. You could just send them to the New York Stock Exchange or send them to NASDAQ. But in the alternate model where you might send them to one of these internalizers, they would pay you money to send them the order flow. So you would ship all your orders off to one of these internalizers, and they might pay you some amount of money, half a cent a share. And that's your money as the broker-dealer. That's your money to do with as you will. Yes, you have to be sure those orders are treated well, but it was a way for brokers to monetize their relationship.

The other economic model was for these exchanges to charge fees or to pay rebates for orders that were placed on the exchanges. You would charge a fee, generally speaking, if someone traded on the exchange and took an order off the exchange. It's known as a take fee. But you would pay someone, someone who put an order on an exchange, a limit order, and made a market. That's what's known as a make fee. And the idea was that you'd receive more as an exchange from the take fees than you paid out on the make fees, and the exchanges would make a bit of a spread on that. It was a way to get interest onto the exchanges.

So you had simultaneously payment for order flow, you have these maker/taker markets, and it was not clear what the limits were to the pricing on these maker/taker markets. Can I charge five cents? Can I charge ten cents? And of course, it's not reflected in the price, or we had to decide it was going to be reflected in the price. So someone's quoting $20, but you really have to pay a fee. It's really $20.03 or $20.05. That means the price actually isn't firm. It means you don't know the price of the market, which is not really acceptable. All those things came together in something called Reg NMS.

Reg NMS was a sequence, it was a series of rules that tried to put order into that market, and we won't want to go through all of it, but let's just say it tried to come up with a coherent framework. It's the framework we have today for how to deal with that market, and it resolved things like quote size, it resolved issues like maker/taker fees. It set up and it provided for communication among market centers at very high speeds, things like that.

WT: Can you clarify for me, when would it come to pass originally that you could buy and sell, say, a New York Stock Exchange stock somewhere else besides New York?

ES: Oh, heavens.

WT: That's very, very old?

ES: Oh, yeah, yeah. That would go way, way back. A regional exchange would do it. The Boston Stock Exchange would have done that. And, you know, Bernie Madoff's operation would have done it. Anyone who is what's known as a third market maker would have done that. So, off-exchange trading of New York Stock Exchange stock could be done even by New York Stock Exchange members under certain conditions.

There was an old rule, 390, that allowed that. So yeah, that's been going on for a long time.

When NMS came into force, though, markets really changed in a lot of ways. It wasn't just NMS, though NMS was, I would say, a factor and the technology changed, the economic models changed in response to this and you have the markets we have today, tremendous speed, you have people writing books about it. And a lot of the core issues that were addressed in NMS are, in fact, back up in front of the Commission today, quoting, ideas about are our markets equitable, are they fair, payment forward or flow issues, maker/taker fees. All these are in some sense back on the table, and we'll see if the Commission deals with them now or next year when they do, but a lot of these issues are back.

WT: So was there kind of peace for a time after Reg NMS, or did it seem like this was going to lead to its own problems initially?

ES: Yeah, look, one of the things that I—this is my own feeling of what is true—is the wonderful thing about brokers is they're just consummately economic entities. If you change a rule, they should adhere to the rule, and for the most part, they do, and they'll work around it in every way that they can, while still adhering to it, to maximize their profits and to do what they want to do originally. So that leads to all sorts of consequences that I think you just can't always guess. So the Order Handling Rules and Reg ATS led to some. Reg NMS led to others. I think it's almost always the case, but it's especially the case when it comes to trading because things move and trade so quickly. They're so fluid.

So today, for example, there's a constant battle of how these guys, how all the various competitors, price their services, their make fees, their take fees, their payment for order flow fees, all the arrangements they have, the plethora of order types exchanges now offer, in a way to tilt their offerings or cater to particular constituencies. I'm not sure all of that could have been foreseen by anyone drafting Reg NMS at the time.

There were a number of commissioners—if you go back and read the rule and you read what happened at the time, two commissioners dissented from Reg NMS at the time. Three did not, that's why it passed. And I think, look, some of those issues, if you go back and read their dissents, they're interesting. Some of those concerns persist to this day. Other things, you know, worked well. Other things worked well. Speed I think is one of the things. I'm not sure anyone ever anticipated the kind of speeds and the kind of efforts to gain speed that you have today. I would have to say that was, I'm going to guess, a surprise to some people.

WT: How about the issue of market fragmentation? The stock exchanges have reduced from above 50 percent to—well, I don't even know what the numbers.

ES: Market fragmentation, look, this is nothing new. The SEC specifically, but the U.S. generally, they decided I think quite successfully that they want a model of a market that's let a thousand flowers bloom. They want something that says, let's let there be a lot of markets and there'll be a lot of competition between those markets. You'll offer whizz-bang feature A, this other market's going to offer something else, and these markets will compete.

Now, the trouble with that, of course, is that your trading volume is spread over, in the case of a New York Stock Exchange stock, eighty venues, more. Between the broker-dealer internalizers, the ECNs, the ACSs, the exchanges, there's literally eighty places you could trade as a market center a particular NYC stock. That's the consequence of the competitive model.

The counterpoint to that, though, is, one, linkages, so the idea that these exchanges and these market centers talk to each other, can move order flows, is one thing that balances that off. The second things that balances it off are the obligations of brokers. Brokers are agents for customers who give them orders. So while it's true that a particular stock is trading in twenty different places, and sure, wouldn't it be wonderful if all the trading was in one place, the broker has the duty to monitor that, oversee it, make sure it has a handle on what's going on, and still route that customer order and treat that customer order in an appropriate way, as an agent for the customer order. So they have this duty that they've got to adhere to. And I think between linkages, communication, and broker duties, these are things that the laws rely on to cause the markets, although they're fragmented physically, still to retain an important degree of integration.

But it is a continual question. There are some people who say, "Let's just have one big fat old exchange and it all is there so you always know where to buy your IBM, or you always know where to buy your Intel." Sure, but you won't have much innovation that way. And, by the way, one of the things that's true is that back in the day, when the New York Stock Exchange had an 85-percent-plus share of its own stock, a lot of people would say that's a monopoly.

Well, then you've got to regulate a monopoly. Regulating a monopoly is not for the fainthearted. It's a tough business. Monopolists overcharge, they underproduce. It's a tough thing. That's just a trait of monopolists. When you have a lot of venues, competition does a lot of the lifting that the regulator might like to do in terms of delivering services for their customers, for investors. That said, you are left with the kind of issues that we have at NMS.

WT: I was reading, I think it was one of your speeches on dark liquidity, particularly on the move from trading inside of brokerages to dark pools and how that, at least initially, was kind of a one-for-one thing in terms of the overall share of trading.

ES: Yeah. You know, people make the distinction between what's lit and what's dark. And so a dark pool is usually understood as some kind of a venue in the ATS where it doesn't broadcast its prices at the quotes at which it's willing to trade. A venue, one of these venues off-exchange, a broker-dealer internalizer, wouldn't do that either. I think one of the things that folks sometimes forget is that the exchanges themselves were not perfectly lit places, by which I mean they weren't notoriously transparent in and of themselves. Yes, it is true that they would put up quotes at all times, so they would display the highest bid and the lowest offer, but they had their own systems for dark or hidden orders that usually had to do with the floors. So the floors, I mean, why would you want to become a member of the New York Stock Exchange? One of the reasons you wanted membership is you had access to the floor and to get your order handled.

The floors—and this goes back a bit in time because it's a slow process—but the floors were a place where orders could be negotiated, shopped around, shopped around to a discrete set of people. Not everyone got to participate in every order. That's something that floor brokers and the specialists did. It was, in fact, dark. It was dark to you and me, as investors sitting out here. It was lit if you were in the club. The club wasn't even all, you know, 1,300 members. It was, on any one order, a subset of those people. The floor brokers and specialists provided services that were important to people at the time that kept order flow hidden from certain other people and let them shop it around. So we've always had a somewhat complex hybrid order structure.

WT: As far as the computerization of markets goes, I think it was in a Fireside Chat that you mentioned an Automation Group at Trading and Markets, which I had not heard of before. I'm wondering if you could talk about that. That seemed interesting.

ES: Sure. So that group, I'm sure it's much different today, but there was the program called ARP, and what it was trying to get at was the idea that these exchanges had really become very technological, very sophisticated. A lot of handling of orders and information was done strictly via computers that the SEC really had no grip on in any meaningful way, by which I mean a lot of the rules were crafted and the frameworks were set up in a way that it was verbal and it was paper tickets. Well, this is a long time ago since we got paper tickets.

And so there was no real framework or systems for regulating these markets as such in terms of their robustness, in terms of us understanding how secure their information was, on how they protected information, on how they would withstand outages, none of that. Well, it seems obvious that you would want to do that, and I think it is obvious, and the SEC's made great strides. At the time I was there, that group was nascent, and the division was competing to get the attention of the commissioners, saying, "You really ought to pay attention to this." Remember, this was before anything like a flash crash.

WT: I was going to ask, yes.

ES: Yes, this is before that. This is a system that's always worked. I mean, I will exaggerate, because obviously there have been outages, but a system that for the most part had always worked, and it's a group within the Commission that's saying, "We really ought to pay attention. You ought to give us resources. We ought to be doing these things." Well, nothing had ever broken, so it's hard to get resources in that world.

Nonetheless, the division did do a good job before I got there at getting resources. It put together a group. It actually had a hardware. It could literally do studies of sort of hardware scenarios. It had the ability to go into the exchanges and monitor their hardware systems and their software systems. It was just stepping up the game of the SEC. It's somewhere they needed to be, and I can only presume that continues to this day. Issues about system robustness have only, of course, grown. Flash crash is an example but, you know, you just have to read the paper to see that people remain concerned about this.

WT: What would be the relationship with, say, I guess it was FINRA already by the time—well no, that was in 2007 [that NASD became FINRA]—how did that work?

ES: I would say there's always a good relationship between the SEC and NASD, then FINRA. I think that relationship, for the most part, centered in the Division of Trading and Markets because they were the SRO for broker-dealers. And FINRA rules would have to be approved by the Commission, which meant they flowed through to the Division of Trading and Markets, and we would approve those rules.

They ran, of course, the gamut. There were rules related to sort of customer-facing broker conduct. There were rules about clearing. There were a host of rules. I think the big thing that was going on at the time when I first came was the integration of the—the NYSE and NASD came together, and that regulatory framework came together and you have an integration of their rulebooks, and that was a big and ongoing project. I think, by and large, it worked very well. I always thought FINRA was a good organization to work with. I can't remember any real issues that we had with them. We may not agree on every single issue.

WT: Do they tend to be more in-depth with some of these technological issues of the market? That's been my general impression, but I might be mistaken.

ES: I think they're closer than the SEC is. So if you want to envision a kind of proximity structure, Congress is farthest away, the SEC's closer, FINRA's closer still. Their ability to examine—their boots-on-the ground approach, much more so even than the OCIE has, they're pretty close to the markets, and I think there's reasonable information flow between them. But they have their own agendas that they're following. But Mary Schapiro ran it, Rick Ketchum ran it, they're both people who knew the Commission inside and out, so they knew very well how to work with, I think, the staff, and we had pretty good knowledge of what their programs were and why they were doing it.

WT: You were talking, when we were back in atmospherics, about some of the pressures of globalization. I'm wondering if you can go into it, maybe a little bit more detail about the different standards of different global markets and how that would impinge upon how the American markets should function and what the regulations and rules should be.

ES: Any large integrated financial firm is a global operator. I remember a conversation I had with a general counsel of a very large firm, and I did a panel discussion or something with him or they were in the audience. They came up, they said, "You're making me laugh here," because, he says, "If there's business we want to do, we're going to do the business. You, the SEC, may craft some rules. You may set some regulations. That may affect where we do the business or where we book the position, but for the most part it's not going to change whether or not I do a trade or I do some business I want to do. You'll just change my efficiency, where I book it, how I carry it." He said, "It's like you guys sometimes, I think, don't get that. You don't understand that that is, in fact, the case," that we, the SEC, didn't understand that. I think we did understand that, but I think it was always a limiting factor to us.

It's very hard to say, when the SEC is charged with investor protection—"No, we don't want to do that rule because they're going to just do it anyway somewhere else," it's not much of a defense. You still at times craft the rules, even though you understand that all you're really doing is raising the cost for the intermediaries to do the business. They're going to do it somewhere else. Maybe you'll curtail some of it or change the way it's done. But these guys are global, they'll book the position, they'll do the trade, and you might cause them to bear more transactions costs, or pay a little higher taxes, but you're not going to stop a lot of these guys from doing that. And so that was something we understood.

I think the credit crisis, when it came, highlighted that in certain times where protections to the U.S., some of them were very useful, and people who stepped outside of them got caught. But yet, I think we were cognizant of the international nature of the markets. We were trying to coordinate with the regulators where we could, so for instance, Chairman Cox regularly would have meetings with, say, UK regulators. We'd go over there to meet them. They'd come over to meet with us. We'd try to stay integrated on things.

We had some common approaches, especially because some of the big banks, big securities firms, had huge offices in London, and so we tried to at least understand the frameworks. But the UK is very different than us in how they approach some of these issues. They were driven often by market failure at the time. If there wasn't a market failure, they would leave it alone. That was not our approach.

WT: And you have these consolidated supervised entities in the United States and the inter-regulator—the attempt to integrate the different rules, I guess, was that pretty much in place by the time that you'd arrived or was it still being worked out?

ES: No, the CSE program was put forward in 2004, 2005. The program was put in place. It was up and running when I was there. So it's important to understand what that program was and how it came about. The rules changed in the EU, where they decided that if you're going to do business in an EU country, you needed a supervisor who supervised the consolidated entity.

So Gramm-Leach-Bliley did not deal with the big securities firms as consolidated entities**.** Bear, Lehman, Merrill, Morgan, Goldman, those five in particular, they are consummately securities firms, and they do a bunch of their business in broker-dealers. The broker-dealers are regulated comprehensively by the SEC, but there's a lot more to those firms than their broker-dealers. There is, as you know, post-bankruptcy with Lehman, hundreds of legal entities that are within these firms, both domestically and outside the United States.

As a result, there was no supervisor at the holding company level for the most part, so at Goldman, for example, there was no one who said, "Yeah, I supervised the holding company of Goldman Sachs." There was no one who did that. Because of that, and the requirement within the EU that you have it, then there was a problem. They would either have to engage in a process known as ring fencing in the EU, which means they'd have to create a separately capitalized entity to do business in the EU—very inefficient. That could have happened. Or the United States had to provide a consolidated supervisor for these firms.

Now, Gramm-Leach-Bliley didn't do that, it didn't set it up, so how are you going to do it? And the answer was the CSE program, Consolidated Supervised Entity program. I would say the SEC attempted to do by rule what Congress didn't do by statute. The SEC essentially said that if you allow us certain powers at the holding company, if you give us certain powers, you the firms voluntarily give us certain powers, then, we will afford you different treatment of capital within the broker-dealer. By doing that, the firms then have a claim to have a consolidated supervisor and the EU would give them a pass.

You might ask why the SEC would do this, since it's really an EU issue, and the answer is that the SEC understood, at least certainly the Division of Trading and Markets understood, that their grasp on these firms was not as strong as they would like them to be. They did regulate the broker-dealer, but that wasn't enough to preserve the broker-dealer or to preserve, necessarily, accounts in the broker-dealer. I think what brought that home most to the SEC staff was Drexel. See, here you can have a broker-dealer, that's fine, but that doesn't preserve the holding company, and when the holding company goes down, that takes the broker-dealer down.

And so you realize that if you want to make sure that a broker-dealer's doing fine, it's nested within this larger entity that if it has issues, first, you don't see them, second, it takes you down. So that's not a very satisfactory regulatory regime. Congress didn't help. And so one of the points of the consolidated supervised program was the SEC got insight into, got a look into and the ability to exercise some control over risk and liquidity at the holding company level in exchange for different treatment of capital in the broker-dealer. That advanced the SEC's goal of having a better handle on what was going on in these firms. Of course, 2008 happens and we are where we are. I think a lot that's inaccurate has been said about that program. I've given speeches about it.

WT: I've read you on the net capital rule, yes.

ES: Yes. So I think we've tried to set that straight, but when you really step back and think about that program, no one really, in the credit crisis, sat back and said, "Why is it there's no supervision of the holding companies of these firms?" And that is question number one. Why was it not provided by statute? You'd have to go back to Gramm-Leach-Bliley. But then it follows down. Look, it's an interesting question whether the SEC should have run the CSE program or not. I think in a lot of ways it made sense to do so. Well, given what happened in 2008, it's a remarkable thing.

WT: So let's talk about the overleveraging that did occur. What are the mechanisms that brought that into place? Of course, we mentioned that it's not the net capital rule, as you've argued against some popular opinion. First let me ask, what was the role of the Fed in this? Is it a division between the Fed and the SEC in terms of overseeing that, or how does that work?

ES: The Fed would have oversight of these firms. So here, if these firms had a bank in them, then they would fall into the Bank Holding Company Act and the Fed would have oversight over the holding company. These firms understood that, which is why they didn't own a commercial bank. So the Fed was not part of this picture at all for these firms. There was no Fed.

Now, some of these firms had thrifts, and so the Office of Thrift Supervision, which is no longer with us, it was done away with in Dodd-Frank, the Office of Thrift Supervision had, technically, some ability to oversee the holding company. But as a practical matter they never exercised their ability to oversee the holding company. They weren't thrift regulators; these were securities firms. They didn't step up and try to comprehensively oversee its holding companies. They just didn't. That was not part of their mandate.

So the result was, whatever was going on at the holding companies and in the unregulated subsidiaries, non-thrift, non-broker-dealer, that wasn't under anyone's regulatory purview. There was no one who had authority over that. The broker-dealer was always comprehensively regulated, and those stayed within the net capital rule, those did what they should have done, the U.S. broker-dealers. But again, that wasn't the issue. The things that caused issues were not the broker-dealers. The U.S. broker-dealers paid off the U.S. clients. It was activities that went on outside the broker-dealer where there wasn't a rule that would stop these firms from doing this. That was just our framework.

WT: One of the things, I was reading that even though the net capital rule doesn't change as far as the brokerage is concerned, the ratio, that in adopting—and correct me if I get this wrong—the standards of Basel II, there was a sort of incentive in there to overinvest in mortgage-backed securities. Is that the case?

ES: I'd better be careful here. So, what things like Basel do is they risk-weight assets. And so I think what you're asking is, how much risk gets assigned to each asset?

WT: Right, right.

ES: It's risk weighting. If something has a low risk weighting, then you can carry a lot of it with little or no capital implications; a treasury bond, sovereign debt. Now, that makes some sense until you realize that some of the crises we've had in Europe were sovereign debt, and so even sovereign debt is not riskless. Certain kinds of securities, securitizations, would also receive relatively low risk weightings, and so compared to other things, just a straight high yield bond, they would receive more favorable capital treatment.

Now, this is sort of one of these issues I had another person, a securities senior person at a financial firm, point out to me. They said, "Look, we will decide as a firm how much risk we want to bear. That's a business judgment we're going to make. You guys, as regulators, might decide something about the form of the risk, but in the end we're going to kind of pick our risk envelope and the most efficient way to bear it."

And the example that he gave was an interesting one. He said, "Let's suppose you try and regulate our leverage. You tell me what's more risky. You can tell me that I can hold no more than three-to-one leverage, you can max me out at that. What's more risky, three-to-one leverage on first-lien home mortgages, or an unlevered position in a bunch of sub-primes?" He said, "That's unlevered."

Now, there may be no money down in those mortgages, but they may be very, very levered as underlying mortgages themselves, much more risky versus three-to-one at primes. So you want to regulate my leverage? Fine. I'll do it that way, or I'll do it synthetically with some kind of a swap. And for that reason, even though we couldn't regulate the leverage of the holding company, that was a decision they made, I think we were always—look, this is just the facts of these global firms. You didn't have the tool kit you needed, even if you wanted to do this. They were going to have the ability to set their risk and their leverage the same way that they wanted. I think some of that continues to this day. That's part of the battle that regulators fight.

WT: You've had some interesting speeches, possibly papers, on the ability to assess risk and how certain risks are fairly easy to assess. And then, of course, there's liquidity risk, you've talked about correlated risks and so forth, and the ability of regulations to push into those murkier areas of risk. Could you talk about that a little bit?

ES: What's risky and what's not sometimes can be hard to judge. So when the credit crisis happened, after the dust cleared and people caught their breath, people in our division would sit down and say, "Okay, what could we have done differently? What would have been better? What would have been worse?" And one of the things I thought was interesting out of that discussion was that even if you would have seen the future, if you would have come back to the Commission, if you had the ability to see the future and then go back to 2006, say, and go, "You know, we need to get these. We need to do—whatever powers we have, I don't know that we can do it, but we need to beat them over the head and get them out of these positions they have, and super senior mortgages, these pieces that they're carrying or some of these leverage loan positions or whatever they are," I think you would have had a very hard time convincing people that was so.

So think about the mortgage market. So you've got these securitizations where the banks are retaining not the very risky pieces, a lot of them; they're retaining the most senior pieces because they're not very interesting, big chunks of those. And the U.S. mortgage market had never had a prolonged national drop in it. So there wasn't much precedent for saying—if you would have told people this, I think they would have thought you were out of your mind. If you would have told people that the repo markets would fail to work for certain kinds of government securities, that money market funds would stop investing repo for certain investment banks, I think people would have looked at you like you were insane. Taking government securities as collateral is the safest thing ever, and the investment banking model as such had been around for an awful long time. Did all of those things happen? Yeah, they all happened. It was very hard for people, I think, to see, and it goes to your question about risk. Those were risks that were very hard for people to get a handle on.

You mentioned correlation. Correlation is another one. It can be very complicated to talk about correlation, but basically, if you think things don't move completely together, you can hold a big bucket of them, and if they're diversified, that provides a measure of risk control. But if there's a chance they all move the same way, especially if they all go down at once when you didn't think that could really happen, then that aggregate position is much more risky than you thought it was.

People's estimates for correlations were off. Certain positions were more correlated than people thought they were, regulators thought they were, investors thought they were. And so it wasn't just "Did the regulators miss it?" Yeah, of course. Absolutely. No question. Investors did too. People just missed that. We all know the names today of people who got it right and then made their bets, but there are always people who are taking the opposite side of positions.

I think for that reason, it's very, very hard to judge these kind of risks, especially in a world where the intermediaries are in the business of paying attention to the risks you say you should manage, but trying to take risk exposure on ones that you're not looking at, and that's what they try to do. I think there's one risk I talked about, and it's a classic thing in this space.

Writing out-of-the-money options is one of the ways you take risk; the hurricane business. So what's a great way to make a lot of money? Writing hurricane insurance. They make a lot of money right up until there's a hurricane, right? I mean, your profits are going to be every year, it's all coming to the bottom line. You're just going to make money, make money, make money. But there's a hurricane once every twenty years. Make money, make money—bang, it's over. That's writing out-of-the-money options.

And although it's not as simple as hurricanes, that's the intuition that a lot of times, there's an incentive in the financial services industry for people to take positions for which they're getting paid to take risk, where the risk doesn't materialize every day as a concrete amount. You know, you pay a dollar a day, you pay out a little bit all the time. No, some of these risks are chunky. They materialize infrequently, and when they do they can be large.

So you can look like a genius for years and years and years, and your response to a regulator is, "What risk?" Well, that's great, right up until the risk materializes, and that's the time when the risk is so large that the intermediaries will throw up their hands and say, "We need help from the government." It's a terrible situation.

WT: And as far as the ability of an organization like the SEC to detect these things, ordinarily they're involved in the things like disclosure and setting rules about governance and that sort of—and it comes back to the lawyers and the economists.

ES: Yes.

WT: I mean, that's not a simple order, shall we say.

ES: Well, no. It would be a fair question to ask attorneys, what in your background, in your training as an attorney, has trained you to monitor for risk? It would be probably about the same training I've had to draft legislation. The last thing you want to ever do is give me a pen like that. I mean, I have no ability to do that. I'm not criticizing the background, I'm just saying it's not the typical training you have. It's a different kind of training.

The SEC is in the business of dealing with risk. It hadn't traditionally formulated its business that way, but we talked about exchanges where risk has become more of an issue, the ARP group. Clearing, always an issue, and even the risk framework has come in more strongly there; the CSE firms, of course. Even more recently with things like money market funds, where the SEC's had to confront risk frameworks much more strongly than they had before in that quasi prudential way, and before, it was strictly investor protection. See, SEC's had to confront, I think, the risk question in different ways, and it's retooled around it.

WT: So when we talk about the degree to which derivatives are not regulated—we're talking more about the CFTC here than the SEC, I would suppose.

ES: Well, I guess we've got to be careful. So, options are derivatives, and if they're struck on securities regulated by the SEC—I think you're probably thinking a lot about swaps. So, whether it's a securities-based swap or not would divide a lot of it, the idea being if the swap itself is focused on one or a very small number of securities, then it's a securities-based swap and the SEC picks it up at least—now, so we'll be going back pre-Dodd-Frank—they would pick it up under at least its anti-fraud rules, but they wouldn't have comprehensive authority like securities. Other kinds of things, commodities, say, other non-security-based swaps, no, the SEC would have nothing to do with that.

WT: So as to the ability, even if you have the ability to regulate on these types of complex products, to what degree would there be an ability to avoid some of these risk-based difficulties, dangers?

ES: I want to be sure I understand your question.

WT: Well, let's go back. So there would be a lot of criticism around, say, the Commodity Futures Modernization Act and the inability to regulate these things. But even if that weren't there, to what extent would there be the ability to regulate them in such a way that you could mitigate the risks that we have seen with those types of products?

ES: I see. Well, look, I think certain kinds of derivatives allow you to do things that you simply can't do, at least efficiently or at scaled cash instruments. So, for example, I can very much change the risk exposures of my firm very, very quickly with derivatives. I might be long exposure—let's say I've got a long euro exposure—I might have that in my firm. It just ends up being long euros.

Through the swaps market, I can flatten that out, end up being long U.S. dollar. I can do that in a matter of minutes or hours, very quickly. That might be very, very hard to do by selling a bunch of euro-dominated bonds, corporate high yield bonds, and then buying up a bunch of U.S. high yield bonds. You can't drive that much traffic through that market.

So, one of the things it allows you to do is it allows you to change your risk footings very, very quickly. It also allows you to manage them very efficiently. I think derivatives are efficient tools of risk management, but you're correct that they can pose certain issues for risk monitoring. I think some of the changes made in Dodd-Frank will help. You've got now clearing, you've got some more information about those things that might change things a little bit. But I think your points you raise about risk management are valid ones. From the point of view of a supervisor, they raise different concerns in the cash markets.

WT: I also wanted to ask about the credit rating agencies. Of course, you'd come in right on the heels of the Reform Act. Tell me a little bit about that.

ES: The credit rating agencies I found a fascinating, fascinating problem, and not because people blame them for the credit crisis. That wasn't what was interesting. I mean, they did blame them, but whether or not they're responsible is a long discussion. I don't tend to agree with that. But I think what's interesting about them is that, to the extent there's a problem there, even today no one's posed a solution, no one's created a solution. So credit rating agencies—start at the beginning—offer opinions about the creditworthiness of a security, kind of blending them together. For the most part, what they offer is a rating that says what's the probability this bond defaults? Moody's is a little different; it says probably it defaults in the loss-given default. But generally, it's what's the probability of bond defaults? AAA: very, very low probability. As you go down to C, D: much higher.

That's what it is. The entire process about it, used to be paid by investors, now paid by issuers for the most part. That market, those entities, were largely unregulated. The SEC in the early 2000s, they registered as advisors, so there was some very limited oversight, but it didn't really fit, in a way. There were just some books and records. They were for the most part not regulated.

One of the things that's interesting here is this is an instance where Congress acted before the crisis. So usually it's crisis, then act. Here, the Reform Act was in 2006, September, so now you've got Congress acting. Fine. So they provide a couple things that are key. They say none of this SEC euro credit rating actions. And indeed, by the no-action process—that was something that came up in the Division of Trading and Markets, it came up through a no-action process that had its start a long time before, that fundamentally said, "You, a broker-dealer, we won't recommend an enforcement action against you if you use a credit rating for determining the net capital of your firm." That goes on and on. The next thing you know, you're certifying credit rating agencies. So Congress says, "None of that. You've got to apply, register, formal process." Great.

The second thing that they did—and there are many things in the act, though the act's very short, it's eighteen pages—is it says the SEC (I'm not going to get the wording right), but you can't regulate the process or the substance of the rating. They basically said keep your nose out of the actual mechanics of how they do the rating. And I think the reason for that was Congress was concerned about the oligopolistic nature of the credit rating agency. The S&P and Moody's, to a lesser extent, fit, but S&P and Moody's, big, big, big share of the business, and they had a way of doing credit ratings: traditional knock on the door, talk to management, read the financials.

There were other ways of doing ratings that were computer-driven. Three guys in a broom closet with a smart computer, you know, you could do some credit ratings. Congress didn't want to inhibit one from growing. They wanted to see some competition in this market. So you get the Credit Rating Agency Reform Act.

That pushes for SEC to do something about conflicts of interest, transparencies, fixing that up. SEC, the division does a battery of rules, a sequence of these rules, to get it done and says, "Yeah, you know, you should disclose more information, processes should be better, analysts shouldn't be owning the securities." It's a bunch of kind of common sense things. But when you really step back, you have the circumstance where you've got to ask—so today, for instance, credit rating are still very much used, yet, they were so heavily critiqued.

And I could ask you, why are people using credit ratings today? If people so much thought these things were awful, if it was the case that these things have no value, then why are you even paying attention to these? Mutual funds have them in their prospectuses, investors look them up when they want to gauge the riskiness of a bond, governments use them in judging the investments that can be held in government funds and pools. Even TARP, when TARP was in place, assets that could be purchased were restricted to those assets that had high credit quality by the largest credit rating agencies—not even NRSROs, but the largest NRSROs. So even in the worst of times, the government relied on it. And I think that's an interesting question.

The core issue, it seems to me here, is why do people rely on credit rating so much? They do. We could have a long discussion about it, and that would be my take in a nutshell, what went on in this period. SEC fulfilled the requirements. I think they moved the dial there somewhat. But a lot of the core issues that people were concerned about, I'm not sure have been addressed.

WT: So, notionally you're supposed to have increased competition among the credit rating agencies.

ES: You are.

WT: But where does the impetus come from to use an alternative credit rating mechanism?

ES: That's a great question. Usually, someone with a better product wins. So if you've got a better tasting peanut butter, or you've got better marshmallows or whatever they are, you're going to sell more peanut butter or marshmallows. It's not clear that dynamic works as well with credit rating agencies, because you would have to say, "What would a perfect credit rating agency look like?" Well, I guess they'd issue two ratings, AAA or F. This bond either isn't going to default, and anything that's not going to default is AAA.

If you saw the future and this bond is going to default, because I saw the future, and it gets an F, and that's what a perfect credit rating agency would look like because, you know, there's only two states in the world, you either default or you don't. I mean, this is obviously facetious, but this is what it would look like.

Well, in that world, if you were one of the guys who people were pegging as someone who's more likely to default, giving the lower rating, you wouldn't want to be rated by that guy. You would, in fact, not want to give them your business. You would give your business to the person who has the less accurate credit rating, and that's, of course, who's doing the paying. So there is a tendency for not the most accurate rating to get the most business. That's just the dynamics of the market. But the really interesting question is, investors, of course, should understand this, and institutional investors do understand this.

WT: Do they have a certain power to demand a certain method of credit rating?

ES: It's the market. I mean, if institutional investors thought credit rating agency X in their process was bad, their ratings were meaningless, they were throwing their ratings, why would they pay attention to them? No one's making them. They choose to use them. And so, I think this remains an interesting question today, why people continue to use them when they understand the shortcomings.

And I do want to point out, these shortcomings that people have talked about, for the most part existed in a small subset, a lot of dollars, but a subset of these credit rating agencies. So they rate corporates, they rate commercial paper, they rate all sorts of stuff. Certain kinds of structured products had issues. A lot of money was flowing at the time, I completely understand that. But the core issue with credit ratings, which to me was, what explains the reliance at the time, the reliance during the crisis, and the reliance after the crisis if people think there's no value. I think there are answers to those questions, but those answers are ones that the Credit Rating Agency Reform Act did not confront.

WT: So the last thing that I kind of want to get at is the experience of the financial crisis within the SEC. So it wasn't something that completely blindsided you, the problems with the CDOs were something that was gaining momentum in 2007 before Bear Stearns and Lehman dissolved. So what were the discussions that were happening in that period?

ES: I think different firms had different issues, so it's probably best to keep the discussion somewhat general. There was a funding model for these firms. They funded themselves from the capital markets, by which I mean they raised debt and equity, and they used the repo markets, they used the commercial paper markets, these large investment banks, to conduct their business. And they were consummately trading firms. They're not lending firms, they're trading firms, so their life's blood is trading. And that was a viable business model for a long, long, long time.

The thing that's notable that they didn't have is access to the lender of last resort. They were not banks, they didn't have access to the discount window, they weren't generally financed by the Fed, so, if push came to shove, they just stood on their own two feet. If you were supplying capital down in the capital structure to one of these firms, there's no one going to bail you out. And so, in that sense, it didn't rely on government guarantees the way a bank does. A bank has the ability to borrow from the Fed to get liquidity, pledge securities back there to get financing, and they pay a deposit premium for that. They pay insurance, and deposits are risk-free. That doesn't happen in a securities firm.

As the credit crisis progressed, I think you saw the funding model of these firms come into question. That is, people started worrying, "I'm becoming concerned about funding these positions," and the ability of these firms to survive on purely capital markets-based funding over the stretch of time got compromised.

Now, not every firm was the same. Some were more issues about the ability to fund. Others more were reflections about the nature of the risk of positions they had, leverage loans, mortgage-backed securities, things like that, where they had very chunky, risky positions. They each had their own situation. But I would say—especially toward the end when you had some firms that were forced to exit the markets that were either bought or bankrupt or whatever it was, dissolved—some of the firms that remained had very strong balance sheets, very strong positions, but that wasn't enough.

This was a time when people were afraid that without a safety net, without support, there was nothing that was going to stop the challenge to their funding, because there was no absolute there. And it was, in that sense, what can you say? I mean, I'll acknowledge there was something else I thought was always very interesting. I don't know if you remember Northern Rock, the UK bank that got in trouble. So this bank, you could look on TV at night and you would see lines around the block of people looking to get their money out. And you literally could see pictures of bank officials driving trucks up to them with cash, running it inside and making sure that everyone got their money back. And eventually, the UK government stood up and said, "We, the UK government"—the UK had a very interesting deposit insurance scheme, it wasn't like ours, but it had some bumps along the way in it—stood up and said, "We guarantee the deposits of all. Every depositor, you're guaranteed full faith and credit of the UK government against Northern Rock deposit. You have nothing to worry about."

The thing I always thought was so interesting is the runs increased the next day. Go figure. Now, one side says, "Well, that's silly." The other side says, "Well, if it's that bad that the government has to guarantee it, I just don't want my money in there. I'm not being paid any premium to keep my money in that bank." I always thought that was an interesting thing. The markets are like that, in other words, if that's the kind of pressure people feel, then you can see why a funding model, when people are sensing the need for more secure, stable funding, is challenged at a time like this, when these investment banks don't have access to that kind of funding. And even though they'll try and increase their transparency, they'll try and tell their story, folks are like, "Yeah, I don't need to earn the extra basis points for a month or two. I'll just step back." And I think that was a challenge.

The positions that were held, a lot of them couldn't be sold in a liquid market. A lot of these markets were illiquid. They weren't anything like exchanges. The prices were uncertain, you couldn't value these positions accurately, and one of the things that's true, if you can't value a position, you don't know what something's worth, it's very hard to risk manage the position. So all of a sudden, for some of these firms, the basic risk management position, operations would break down because you really couldn't tell what something was worth. You couldn't sell it, couldn't get a good mark, you couldn't tell the difference between a real and fire sale valuation.

So it was a tough time, and you didn't have the lender of last resort where you could put the collateral back to them and get funding. So that was something I think a lot of us—I would say I didn't think that much money could move that quickly out of one of these firms. I thought it was a lot in March of 2008. I thought it was even more in September of 2008.

WT: In terms of the SEC's ability to do anything in this period, there were a number of ad hoc measures that were taken, of which you've been critical. I'm wondering if you could tell me a little bit about that.

ES: You need to give me more specifics.

WT: The restriction on short selling, for example.

ES: Okay. So, short selling was an interesting issue. If you look at what the academic literature says about short selling, it pretty much is unambiguous. Short selling increases market efficiency, it adds to liquidity, bad stuff does not happen in short selling. You come into the credit crisis and you have senior folks, both within the administration and within the private sector, the big banks, screaming, saying that short sellers are killing their firms, that they're doing things that are unconscionable, they're ganging up on them, they're acting in concert in such a way to manipulate.

It's not clear whether that happened or not. I mean, there's certainly people who were afraid of this. And so the SEC puts in place a series of measures to constrain and then eventually to cause to cease short selling in a set of firms. Analysis: that was a tough thing to decide. The SEC had a very limited toolkit for what it could do. That's one of the things it couldn't do. It couldn't lend.

WT: It wasn't the Treasury, right?

ES: No, it isn't the Treasury, it's not the Fed, it doesn't have money. The issues weren't in the broker-dealers; the issues were out of the broker-dealers. So there's a funny way in which it's like what can you do? This is one of the things it could do, and I think the thought was, well, it might help, and it's not clear how much it will hurt. If you read Chairman Cox's interview that he gave on his way out of the Commission, I think one of the things he says is it's one of the decisions that was made that he most regrets, that this happened.

But I will tell you that there were a lot of people in the administration who wanted this to happen. The SEC was pressured on this, was pushed. And no one made them do it. The SEC took its own vote and they made their own decision. But I don't think after the fact that there's been much to support that it helped. Maybe some to suggest that it wasn't helpful. I don't think it caused anything bad to happen. But the toolkit was very limited.

WT: So this is a case where you, as the director of Trading and Markets, have a very limited ability. When you have pressures coming, especially from the administration like that to the Commission, I mean, is that basically the level that the decision is made at?

ES: Rules are always by the Commission. We've talked about some rules, Credit Rating Agency Reform Act, the rules around that, the CSE program. All those rules are rules by the Commission, so the five commissioners actually do the rule. So yes, it's true that the staff put pen to paper and do all of what you call the heavy legwork. The written rule goes up to the tenth floor, and they critique and either sign it, change it, say, "Well, I want these modifications." But at the end of the day, the rules are the Commission's rules, but the staff has a lot of input in them. We would always provide thoughts, make changes if the chairman or the commissioners wanted those changes. But they are the Commission's rules.

WT: This particular interview is being done as part of a series that's loosely affiliated with a gallery that somebody else is putting together on relations with the Executive Branch.

And so I'm curious if you can comment just on that, very in general—and particularly during the crisis, but even maybe more so as a general thing. Of course, it's an independent agency, and in difficult times such as those there's a lot more discussions going on, of course, at the highest levels.

ES: To be honest, I'm not sure I can add too much to that. During the moment, we would go in and we'd have, periodically we'd have a handful of meetings with the president and those kinds of people because of the unusual nature of the moment. I think before that, the interactions with the Executive were just some things in the President's Working Group and things like that. I would say it was pretty limited.

During the credit crisis, it was a different game. You had the Treasury and the Fed hand in hand. All the agencies were spending a lot of time talking about things in ways they didn't normally interact. So I think I'd have to say in the times that I spent there, setting those core months around the credit crisis aside, I would have to say I didn't sense very much pressure that came from the Executive, generally speaking. I think there always, of course, was—and certainly all you have to do is read some of the commissioner's statements these days and some things to realize that there's some sense that, from time to time, some of the Commission's authority is being used to accomplish political rather than securities regulatory ends.

And that may be, but I think throughout, for the most part of its history, it hasn't had too much interference there. I once asked one of the people who had been around the SEC a long, long time, thirty years, about that. I asked them exactly the question you're asking me, and this is before the crisis, I said, "What do you think?" And this person thought about it, and they cited one instance of something with respect to small businesses, '70s or'80s, and so really, setting that aside, there really hasn't been much. So, setting the crisis aside, I really hadn't seen much.

Now, I left in 2009, and I think since then there have been some things that have cropped up. People will cite to things like Conflict Minerals, executive pay, some of these things that I'm sure you're familiar with. Critics of those things have cited political agendas as opposed to information that investors needed coming to a decision about the quality of the security. But I think that was outside my time.

WT: So you do leave in 2009. Dodd-Frank is in 2010.

ES: Right.

WT: To what extent was there contributions to the discussions, or had that started when you left, in full force?

ES: I think the framework, yeah, I think, yeah. Congress, for sure, people were thinking okay, something's changed. So getting back to something we talked about earlier, remember I said that the tone in 2006 was all about competitiveness, and then one day it just changed. It just changed in August of 2007, when certain events hit the market, and the discussion turned on a dime and people became concerned about the health of the financial system.

I think issues, in particular about certain derivatives, about credit rating agencies, about risk retention, it's still those kind of things that people perceived to be issues, especially about derivative swaps and clearing and things like that, focused, and people were talking about them. There's nothing like a crisis to give you the force to get something done, and so Dodd-Frank was the result, for better or for worse.

WT: Was there communication between the division and, say, the Banking Committee over these things already at that point?

ES: You mean would we have dialogue with the Hill on these issues?

WT: Yeah, basically.

ES: Yeah. I think those happened. You can look at the committee hearings that happened in the wake of the crisis. There was a dialogue. Some of it was issues that had been talked about for years and years and years. There were, of course, continued calls for putting the SEC and CFTC together, questions over how to split the authority between them on certain kinds of derivatives. Yeah, I think that all continued. It continues to this day.

I think the most obvious thing now that people talk about, once you get the money market fund bit done, is asset management. That's obviously huge now. People are talking about what's the concern, if any, outside of the SEC. Should there be anything that met systemic risk in asset management, the SEC's pretty much been on the side of saying we think about mutual funds and asset managers generally, it's a different framework. It's nothing like a bank. FSOCs and bank regulators were saying these things are shadow banks, and we need to have a say-so in this space and we need to regulate them with an eye towards systemic risk, and that argument's still far from resolved.

And there are other things where the SEC, I think someone could raise those issues: exchanges, clearing, all these things that have—it wouldn't surprise me if over the next some number of years that those same questions asked of asset managers start to get asked of some of the other things that the SEC regulates.

WT: So you leave in 2009. Is this kind of the same deal as before, you'd come for a few years, and then the call of the professorial life would not be something to be resisted?

ES: At some level. I mean, the first time I moved down there—on a personal note, this time I commuted so my family and kids, they stayed in Boston. So I'd go down there for five days a week and come back. And of course once the crisis got going, I didn't come back so much. And I think you got through the crisis, you got into 2009, a new administration, Mary Schapiro came in, you know, I had done my time and it was just time to move on.

It's a tremendous organization. I really enjoyed my time there. But it was a good time to move on and let someone else do it, and Robert Cook came next and he was terrific.

WT: Okay, very good. I want to return then, briefly, to the municipal securities issue, which we left some time ago. And of course, you've just authored this report for the MSRB last year. I'm wondering if you can tell me a little bit more about that issue and the question of the secondary markets.

ES: I think part of my interest in this goes back to what I told you about, when I looked at the muni stuff, and I said, "Geez, we haven't got enough people watching this market." So, municipal markets are interesting for the reasons I said: retail, over-the-counter, limited information. And so I had done some work with some other academic colleagues, understanding the effect of transparency on the corporate bond markets. A system called TRACE was put into the corporate bond markets, and we did some work for NASD, helping them figure out the effect of TRACE in transparency on corporate bonds, and wrote a paper on the study for that.

MSRB approached me and asked me to do something kind of similar here, and so I analyzed some of their data and produced a report, and it characterized the municipal market, studied it asked, some questions about the effect of transparency on municipal bonds, liquidity, dealers, and so it went through and quantitatively analyzed that data.

I continue working on some of those questions today. I think they're interesting questions for the reason I've talked about: who's in the market and why. It remains a market—we have the kind of benefits we have in the equity markets now, where people talk about trading in milliseconds and microseconds and pricing securities to fractions of a penny, yet you have bonds that trade with spreads of 4 percent, 5 percent. The median bond only trades two or three times a year, whereas you've got repeated trading fifty times a second in some of these stocks. So it's total opposite ends of the spectrum.

I don't think bonds will ever trade like equities, that's not the point, but some of the benefits that market structure brought to equity markets I think have the potential to come to the bond markets, not to turn them into the equity markets, but to bring transparency and to lower cost, and to make them more broadly accessible. Some of the commissioners have been talking very aggressively about that recently—Commissioner Gallagher, Commissioner Piwowar, have been talking about that aggressively. I think Chairman White has mentioned that this is something she's concerned with. So I continue to find it an interesting question. That's just the secondary market side of that. The primary market has its own issues as to its disclosure, so I think there's a lot of potential reform that can come to our municipal markets.

WT: There is disclosure, of course, on the primary market there. What is it, 15c2-12?

ES: That's right. Very good.

WT: But not on the secondary market, so I'm wondering about the economic consequences of that, if any, that you've detected.

ES: What 15c2-12 does is it's a way of doing indirectly what the Commission can't do directly. It basically puts an obligation on the broker that isn't on the municipality in terms of what kind of information has to be out there. And that encourages the production of primary market information. There continues to be pressure in that area. The MSRB is pressuring to get certain other kinds of improvements in primary market disclosure. I think the Commission may do as well. I think they operate independently. You've got to improve primary market, you've got to improve secondary market, they both work separately, and I think both have a ways to go.

WT: So, is there anything glaring that we've missed, do you think?

ES: No. I think it's been pretty comprehensive.

WT: Very good.

ES: It's made me remember a few things over those years.

WT: Terrific. That's always a big goal of ours, to try and evoke some of those things. All right, well, thanks very much, once again, for your time.

ES: My pleasure. Very good.

WT: All right.

[End of Interview]