Federal Reserve Board Oral History Project

Interview with

Edward C. Ettin

Former Deputy Director, Division of Research and Statistics

Date: March 10, 2006

Location: Washington, D.C.

Interviewers: Myron L. Kwast and David H. Small

Federal Reserve Board Oral History Project

In connection with the centennial anniversary of the Federal Reserve in 2013, the Board undertook an oral history project to collect personal recollections of a range of former Governors and senior staff members, including their background and education before working at the Board; important economic, monetary policy, and regulatory developments during their careers; and impressions of the institution's culture.

Following the interview, each participant was given the opportunity to edit and revise the transcript. In some cases, the Board staff also removed confidential FOMC and Board material in accordance with records retention and disposition schedules covering FOMC and Board records that were approved by the National Archives and Records Administration.

Note that the views of the participants and interviewers are their own and are not in any way approved or endorsed by the Board of Governors of the Federal Reserve System. Because the conversations are based on personal recollections, they may include misstatements and errors.

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MR. SMALL. Today is Friday, March 10, 2006. This interview is being conducted by Myron L. Kwast and myself, David H. Small. We are interviewing Edward C. Ettin, a recent retiree from the Federal Reserve Board. Mr. Ettin worked at the Board from 1964 to 2005.

Positions Held at the Board and Education and Professional Background

MR. SMALL. Ed, before we start at the beginning of your tenure at the Board, could you explain briefly your position and responsibilities at the Board when you retired?

MR. ETTIN. I was deputy director in the Division of Research and Statistics. I was responsible for the division's research dealing with microeconomics, regulation, and the economics of regulation and supervision. These areas included things like mergers and acquisitions, the industrial organization issues involved in banking, the structure of banking, deposit insurance, and matters dealing with bank capital and with bank supervision as it impinged on the stability and strength of the banking system.

This makes it sound like I was doing a lot, but I was managing. The work was being done by my two colleagues, Myron Kwast and Patrick M. "Pat" Parkinson.

MR. SMALL. Let's start at the beginning—your early educational career, where you grew up, your college, and how you got to be at the Board.

MR. ETTIN. I did my undergraduate work at the University of Cincinnati, which was in my hometown. My family was unable to send me away to school. My undergraduate work was in finance. My faculty was able to get me fellowships to go to the University of Michigan, where I did a Masters of Business Administration to get the finance side and then a joint Ph.D. in economics and finance at Michigan.

I left Michigan to teach at Duke University, where I taught money and banking, principles of economics, corporate finance, and finance theory. I was there about two and a half years when I was giving a speech at the Federal Reserve Bank of Richmond. I told a joke, and the only person that laughed in the audience came up to see me afterwards. His name was Daniel H. "Dan" Brill. He was director of research at the Federal Reserve Board at the time. He asked me on the spot to join the staff. I answered in the most distasteful way, looking back, that I was an academic and not a bureaucrat.

Some weeks later Dan called me, and I said I would be uncomfortable leaving academics. I had just started off my career teaching for a couple of years. He offered me the opportunity to come to the Board as a visiting professor for six months and do anything I wanted to do. After living in the little town of Durham, North Carolina, the idea of coming to Washington, D.C., for six months sounded attractive. I stayed for 41 years rather than 6 months. I fell in love with the place.

Early Years at the Board under Chairmen Martin (1951–70), Burns (1970–78), and Miller (1978–79)

MR. SMALL. Let's try to capture your image of the Board when you first arrived.

MR. KWAST. Remind me—what year was that?

MR. ETTIN. 1964.

MR. SMALL. What was the work culture, the research, or operations like?

MR. ETTIN. I can't clearly recall what my image was of coming to the Federal Reserve. It was certainly one that the typical smart-ass youngster, full of himself—after getting a Ph.D. and being an assistant professor at a good university—would have of any entity that wasn't academic: I'll get over there and straighten them out. I think we hire lots of people like that. It's human psychology. What I found at the Federal Reserve was a culture that is an astounding contrast to the one we have now. Most of the professional staff, which was much smaller than the current professional staff, was not terribly well trained, were by and large institutionalists, and they didn't publish much in the literature. The pace of work was light. I can't remember staying past 5:00 in the early year or two, and there was not a lot of pressure.

MR. KWAST. You didn't have to work in the evenings?

MR. ETTIN. No. I remember two-hour Ping-Pong games in the afternoon sometimes. That's the kind of pace it was. This was under William McChesney Martin. This was before Arthur F. Burns came. There was dramatic change when Burns came.

The cultural change for the Fed was started by the guy that hired me, someone who most people at the Federal Reserve probably can't remember, a guy named Dan Brill. He had been a long-term employee of the Fed and was its director of research. Dan was committed to making the Federal Reserve a first-class place in research, in policymaking, and as advisors to policymakers in the most helpful way he could. He brought in Lyle E. Gramley from the Kansas City Fed to help him. He also brought in Robert "Bob" Solomon, who later ended up being the director of the Division of International Finance. He looked to those two people to help him build a first-class research operation.

I had a hand in that, even though—no matter what my self-perception was—research was not my strong suit. I was assigned to the Banking Section. The Banking Section then did everything on the financial side. It was made up of James B. "Jim" Eckert, who was the section chief—he had been at the Fed a long time and was essentially an institutionalist—Edward R. "Ed" Fry, and, later, Darwin Beck, who did the statistics, and me. That was it, the whole operation. We did everything. There was a Government Finance Section. There was a Capital Market[s] Section that did institutional stuff. But it was an unimpressive operation.

Dan Brill and Lyle then brought in, the second year I was here, three people to create a Special Studies Section and begin to create a serious research operation. They were James L.

"Jim" Pierce, Robert T. "Bob" Parry, who later became the president of the San Francisco Fed, and Thomas D. "Tom" Thomson, who later ended up working at the San Francisco Fed for Bob.

Both Bob and Tom had an interregnum career in the private sector in banking. Jim, after some time here, worked on the Hill and then became a professor at Berkeley. These guys created the Special Studies Section. They created the first formal model to be used in monetary policy, which was a money market model designed to predict short-term interest rates. And, in consultation with Franco Modigliani and Albert K. Ando, they began the work on the FRB–MIT–Penn Model, which is the basis of our current large econometric model. There was also another guy that worked on that whose name I'm blanking on. He worked for about 10 years and ended up being the head of the model group. These guys brought in Peter Tinsley and others, and that became the basis of the Special Studies section. At the same time, Lyle and Dan and I began. Jared J. "Jerry" Enzler was an early worker on this who made major contributions, but he's not the name I'm blanking on who helped design the model.

Outside the model, we began hiring more professional economists, giving them real time to do research. It took 25 years to build up a culture. It was hard to do, to build up a culture where people were seriously interested in economics and were respected for what they were able to do on the economic side.

A person who entered the staff during this 25-year period had three ways to get ahead. Each of the ways was treated with respect, and each of the three ways could cause reward in both title and whatever pay the Federal Reserve could give. One was to do pure research and get published. You were less likely to become a senior officer and you wouldn't be involved in the policymaking process, but that research was respected and helpful and fit into the policy work of the Federal Reserve through others.

Another way you could get ahead was to be a good economist. Do some research, but also involve yourself in the ad hoc policy work of the Fed and evolve into briefing the Board, advising individual Board members, and making presentations to the Board, but with that combination of research. That was the ideal employee, and that was the one who ended up being most successful in the culture that would be developed.

There was also a third way you could get ahead, and that was to be adept at statistics and applying economics without doing initial research or not doing the research yourself—understanding other people's research, applying that, and using it with the Board. That was also a road to success at the Fed.

In these early years, the Board did not have a tremendous respect for its economists. This was particularly under McChesney Martin. It's not that the Board disliked them, pooh-poohed them, or laughed at them. It was rather that economics didn't play a significant role in the Board's decisionmaking. McChesney Martin respected Dan Brill and was willing to allocate the resources necessary for Dan to build this operation. I think Martin understood that would enhance the power and prestige of the Federal Reserve. He respected Dan and was willing to back Dan in going in that direction.

When Arthur Burns came, the world changed dramatically. He came in 1970 while a lot of the initial work was being done building the economics/research culture in the Division of Research and Statistics. Arthur Burns and Dan Brill weren't going to be compatible. Dan was an aggressive liberal who would want to use monetary policy aggressively for full employment reasons. That wasn't going to be compatible with what he thought Arthur Burns, coming out of the Nixon Administration, would want to do. Dan was replaced by the Board with J. Charles "Chuck" Partee, who had been a member of the staff under Dan for several years. Dan had brought him from the Chicago Fed where he was a senior person, but not terribly senior. Chuck did a marvelous job here, and Arthur Burns liked him as the director of research after a rocky start. I mentioned how the staff had a pretty easy life. Arthur Burns told me later that he was frightened about being Chairman of the Federal Reserve and about how he would get along with people. He decided that the best way to proceed was to come on strong, to be aggressive, to ask for a lot, to demonstrate he was in charge.

That first week, he asked for things and papers that had the staff working night and day for a week. I remember at the end of that first week, Burns asked Chuck for something on a Friday afternoon that he wanted by Monday. Chuck said, "Well the staff's been working pretty hard, and they're pretty tired. Could we wait until next week to start on this?" To me, Burns always sounded like W.C. Fields. He said, in that W.C. Fields way, "Well, Mr. Partee, I know five people in New York that would like your job." We worked that weekend, and the Chairman had what he requested that Monday morning. Because of the kind of work that Burns asked for, the excess time that we used to have on our hands began to disappear, and the benefits of the staff that Dan had started to build up served Burns well.

Burns was a crotchety, smart, self-centered person who was good in theatrics. He planned his presentations to congressional committees with great precision. They were almost scripted. In my opinion, he was less than a successful policymaker in his eight-year period because he was always frightened to push interest rates enough to really put an end to inflation—probably because of the heritage of his life during the Depression. And, in many ways, I think, his policies contributed to the current and subsequent inflation.

Burns was also a person who could not take much difference of opinion and required great loyalty. You should interview Jim Pierce, who helped build a lot and became very senior in the division. Jim finally left to go work on the Hill. He left because of disappointment at the Fed, at a time when Congressman Henry S. Reuss was doing a critical evaluation of the Fed. The Chairman was convinced that he was telling secrets to Reuss, which I believe was not the case. Pierce became officially persona non grata around here, which was distasteful, and this all had to do with Burns.

During this time, a lot of restraint was put on budgets. There came a time during the Burns chairmanship where there was some doubt whether we could continue the quality of the research operation, to spend money on the costly model, and to continue to increase the size of the staff. There were serious questions about whether it was going to last or not. It took a lot of effort by a lot of staff to convince the Board to keep this together. There was a time when growth stopped. There was a question about whether we were going to lose people and not be able to hire new people. For a while, salaries were held up. That was a difficult time, but one got through it.

Burns was the first person who decided that he would like to create a senior staff person through which many things could flow. He created the Office of Staff Director. Chuck Partee became the first staff director. Lyle Gramley replaced Chuck Partee as director of research. This centralization was a convenience for Burns, who liked Chuck and thought he could go to one person who could coordinate things. In the process, however, Arthur Burns also became fond of Lyle Gramley, who gave a lot of counseling and policy advice to Burns during that period.

Burns played a significant role in persuading the President to appoint to the Board two staffers, ultimately three, that he liked. Robert C. "Bob" Holland, a name that I'm going to go back and talk about, and Chuck Partee were both made members of the Board when vacancies were created. Later, Lyle Gramley was appointed to the Board. I think these three appointments were the first ever of staffers to the Board. I'll get back to that in a moment, but let me just talk about Bob Holland.

Bob Holland had been here for some time. He was the father of the Bluebook kind of vehicle. His chief assignment was the day-to-day operation of monetary policy. He ran the call between Board staff and the staff of the Trading Desk at the Federal Reserve Bank of New York. He drafted what became the Bluebook. He was the go-to guy on monetary policy and, in many ways, acted as the staff director. My history is getting a little fuzzy here. Bob may have been the first staff director, not Chuck. Bob then may have been promoted to the Board, and then Chuck made the staff director. Somebody will have to check the record.[1]

Both of them played this role, and Burns rewarded both of them by moving them up to staff director. Then there was the question of who was going to succeed Chuck as staff director. There was, at the senior staff level, quite a bit of competition. Stephen H. "Steve" Axilrod had grown up on the Government Finance Section and evolved into the monetary area. This competition was at first among Chuck, Steve, and Lyle, and then, as Chuck was elevated at the Board, between Gramley and Axilrod. Axilrod, late in Burns's term, became the staff director. He had the name of it changed so that it was the staff director for monetary and financial policy, to make it clear that his office was in charge of everything to do with research on both the

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[1] Robert "Bob" C. Holland joined the Board staff in 1961. In the research division, he was an adviser (1961–64) and an associate director (1964–65). From 1965 to 1967, he was an adviser to the Board. From 1968 to 1971, he was the Secretary to the Board. He served as the Executive Director to the Board from 1971 until his 1973 appointment to the Board of Governors. He was the first staff member to serve on the Board; he was a Governor from 1973 to 1976.

Charles Partee joined the Board staff in 1962. In the research division, he served as chief of the Capital Markets Section (1962–63), adviser in charge of the Financial Section (1964–65), associate director (1966–69), and director (1969–74). In 1973, he became managing director for research and economic policy, an office he held until he became a member of the Board in 1976; he served until 1986. He was the second member of the Board's staff to be appointed to the Board.

international side and on the domestic side, something that previous staff directors hadn't insisted on. Lyle became director of Research and Statistics.

When Lyle Gramley was asked to join the Council of Economic Advisers, James "Jim" Kichline then became the director of Research. All during this time the staff was evolving, growing. This culture of cooperation—of doing good economics, of doing what was necessary for the Board, of working whatever hours it took—began to grow and evolve and spread its roots. The old-style economists, as they retired, were being replaced by well-schooled, well-educated professional people who were contributing to monetary and economic policy. When Lyle returned under Arthur Burns, he too ended up on the Board.[2]

When Burns's term was up after eight years, I have no doubt that he wanted to be reappointed, but he was replaced by G. William Miller. I remember being summoned to the Board Room by Burns to meet Miller on behalf of R&S; the director of research, Jim Kichline, was out of town the day that Miller's name was announced. Burns called all the directors to introduce themselves to Miller. I went down in Jim's place. Burns was trying hard not to cry. He kept saying, "The President has chosen well," but it was clear he was upset. He would have liked to stay.

Miller was Chairman for a short time. He was the only Chairman I served who was, I think, incompetent—did not know how to do his job and did not know how to manage the staff. To Steve Axilrod's credit, he called a meeting of the senior staff of all the research divisions and said, in effect, "It is up to us to make sure that the quality of the work does not decline. This man can't tell good stuff from bad stuff, and we have to police ourselves to make sure that what

[2] Editor's note: Lyle Gramley returned to the Board as a Governor in 1980, when Paul Volcker was the Chairman, and served until 1985.

we're producing is good stuff." Axilrod did this on his own. His action was clearly indicative of his desire to keep the quality of the work up.

Miller ultimately joined the Carter Administration as Secretary of the Treasury, to the relief of the staff of the Federal Reserve Board. He was replaced by then-president of the Federal Reserve Bank of New York, Paul A. Volcker.

MR. KWAST. During this period, did the other Governors participate in creating the demand to build the staff and to value economic research? When Chuck Partee and Lyle Gramley were on the Board, did they support this culture?

MR. ETTIN. I think, in general, other Board members were not impressive in the contributions they made to policymaking. Most were not professional economists, some were. When Holland, Partee, and Gramley were on the Board, these were all professionally trained economists who would put high standards on research, and did. But they needed to demonstrate that they weren't just staffers anymore and had a special relationship with the staff. They had to demonstrate their independence, and that's an understandable human response. But, yes, they contributed to increasing the emphasis on a quality staff.

By the end of the Burns chairmanship, the tradition had started of significant trust between the staff and the Board, with staff—the senior staff, at least—being permitted to listen to critical discussions at the Board level of what was being done. Before a big decision was made, Burns would like to see a paper about it with options from the staff. I think that tradition started then, and that's a tradition that, as far as I can tell, has never gone away.

Many of these memos were interdivisional, where they tried to integrate things and not just have the research division section here, the international finance (IF) section here, and the Legal Division section here. There wasn't a Monetary Affairs Division then. The effort to integrate things disintegrated over later years. Often there would be separate memos or the same piece of paper, but it would say here are the research division's views and here are IF's views. That doesn't serve the Board. I have no explanation for why that happened. It could well be that it happened because, on important issues, the staff director for monetary and financial policy would slap a cover memo on a divisional staff document prepared for the Board that would do the integration in three or four pages so that he could have the separate memos follow. That might have been the cause of it.

MR. SMALL. We've covered the period from 1964, when you came to the Board, to the point when we have Paul Volcker as Chairman, which is basically the period of the large rise in inflation. I have two questions. What are your thoughts on what the factors or reasons for that increase were? The other involves the young members of the staff who were here at the time, cutting their teeth on economic issues, who later moved up into policymaking positions. How do you think those formative years and their perceptions of the policy mistakes influenced them later on when they were making policy during the Volcker/Greenspan era?

MR. ETTIN. I'm not sure I'm going to be able to answer it totally accurately, but let me try. When I came to the Board, the Board forbade the staff from making a formal economic forecast. Either it wasn't going to be any good, or it would put the Fed in a box or whatever.

Dan Brill used to have meetings at his home on weekends before the FOMC meetings to make what was referred to as a "projection." It is, I think, the reason why today our forecasts are called projections, not forecasts, because he told the Board that we were following their directions and not making forecasts. We were simply extending trends. We were moving forward. We know how things might change, but we're just looking ahead a little bit. The projections weren't far ahead, maybe a year or two. Early on, they were trying to do projections for policy alternatives.

By the way, Dan Brill first started doing forecasts behind the Board's back, and then he told the Board. He then started doing these forecasts jointly with the Treasury and the Council of Economic Advisers. This group was called the Triad. When he brought in the Office of Management and Budget to be part of that forecast, it was called the Quadriad. I don't know the date it ceased. It was probably in for five or six years, where there was a serious effort by the important economic policy agencies to agree to a fundamental projection, forecast, or whatever to which they would try to adhere. It might have ended in Johnson's time, but I don't know that for sure.

All those forecasts suffered early on. Since the projection was relatively short, the alternatives always suggested that you could have a little bit more output at the cost of very little additional inflation. They weren't long term enough. In that sense, I think the projection and the Board decisionmaking contributed to the inflationary process. When you give a forecast that's just a year or two ahead—for example, with high interest rates causing output to fall relatively soon, but prices still growing or slowing only a bit over the forecast horizon—these short horizons sort of bias the decisionmaking. The staff understood that property of the forecasts, but the way the forecasts were working and the way the decisionmaking processes were working, the forecasts were inadvertently inflationary biased because the time horizon was too short.

I also think that the political cultural environment at the time thought that some inflation was an acceptable price for more output and employment. I think that significantly affected Arthur Burns in part because, according to Nixon's memoirs, as he told Nixon, "You lost the election, because interest rates started to rise" in 1960. So that affected his outlook.

Burns always talked about how bad inflation was and we ought to do something about it, but I don't think he ever let interest rates go much above 7 percent. Long term, maybe they approached 8 percent, but I don't think so. He wasn't willing to take those kinds of risks.

I cannot remember anything about monetary policy during Miller's time. It's just a vast void. That's the way it was around here. I don't think he understood. He was wrapped up in structural issues, not monetary policy issues.

The Chairmanship of Paul Volcker (1979–87)

MR. ETTIN. It was Paul Volcker who made all the world of difference. People looking back at Paul Volcker try to make him a monetarist or whatever. He was a good economist, but mainly he was a pragmatist by the time he took over in 1978 or 1979.

MR. KWAST. It was 1979, because I came in June 1978, and Miller had just been appointed.

MR. ETTIN. Right. What he saw, in my opinion, was an economy evolving into a banana republic: inflation rates, double digit and rising; nominal interest rates rising; bad wage–price spiral; expectations of continuing rises in prices; a sort of economic malaise, with the economy going sidewise at a high level. By the way, Dan Brill at the time was an assistant secretary of the Treasury in the Clinton Administration.[3] At weekly lunches that the Treasury and the Federal Reserve staffs had, phrases like "banana republic" and "something has to be done" were continually used by Dan. Paul Volcker had been at the Treasury as a deputy secretary, I think, during the Kennedy Administration and then president of the Federal Reserve Bank of New York before he was appointed Chairman of the Fed. He looked at the matter over

[3] Editor's note: Dan Brill was assistant secretary of the Treasury from 1977 to 1979 during the Carter Administration.

several months as Chairman and made a decision that Steve Axilrod told me he counseled Volcker not to make, because it was too much of a break. Volcker decided that he was going to lead the Fed in breaking the back of this inflation or else our economy was going to be in serious trouble. Hence, he had the historic October 6, 1979, meeting of the FOMC on a Saturday.

By that time, I had left the research division to become Steve Axilrod's deputy in the Office of Staff Director for Monetary and Financial Policy. I was at the FOMC meeting where members came in secretly from around the country and met that Saturday. I can't remember if it was Friday and Saturday or just Saturday. I think it was just a Saturday FOMC meeting in which the case was made that interest rates had to rise significantly. What I'm going to be saying for the next two minutes is only my opinion—other people may disagree.

I think Paul Volcker made the decision that he couldn't get the Committee to vote for the level of interest rates that would be required to do this job. If we vote for the interest rates, too many people will be against us. Instead, the FOMC would adopt a money target and have the technicians tell us what interest rates we would need to move from the very rapid inflation-induced growth of money to whatever our money target rates would be. We would set a money target and let interest rates just "fall out." This was brilliant.

It wasn't long after October 6 that the federal funds rate was trading at 22 percent. It is inconceivable that a Committee would have voted for a 22 percent funds rate. It's inconceivable that the Hill would have let us vote for a 22 percent federal funds rate. What we were trying to do is get the money supply growth down to 6 percent, which itself was maybe too rapid. So in response to criticism of high interest rates, it was as if the Fed might say, "What can I tell you? Interest rates—it just happened. We voted for the quantity of money here." That is the only way the decrease in inflation could be done. Anybody that says he was a monetarist doesn't understand Paul Volcker.

MR. SMALL. There's a story—presumably, you've heard one version or another of this—that prior to that meeting, Volcker was in Europe at an international conference.

MR. ETTIN. Yes.

MR. SMALL. The popular version of that story, which may be accurate, is that he got intellectually bludgeoned there, beat up, and decided that, as a result, he had to do something. He came back early.

MR. ETTIN. That's a 95 percent true story. He had already had Steve Axilrod, who was doing this on his own. I was not brought in until the last minute; it was a supersecret. Steve was working out how you could implement a money target after earlier discussions with Paul.

MR. SMALL. Before that, though?

MR. ETTIN. Before. He was working on a money-targeting procedure, but it wasn't set that the implementation was going to happen the next time. It might be two or three months from now, but, yes, he came back and he said, "Steve, we're going to do it now." That meeting of the FOMC was called on short notice. Steve and Paul and whoever else was working on it—including me, but not in an important role—were making it up as they went along. We were going to have to translate the FOMC's money targets into a consistent daily reserve pattern, given all the technical factors, and no one had ever done that before.

We were winging it at first. They were going on a money target that we had never done before. We had to create a reserve target, and we had to distribute the reserves between nonborrowed and borrowed reserves, all the while keeping in mind that you wanted those interest rates to do something out there. Interest rates would truly "just fall out," but there had to be some market-compatible process. Those became very technical operations.

It was learning-by-doing. It was enough to make Milton Friedman happy, because we were apparently doing what monetarism was all about. You were laying out exactly what you had to do to meet a money target, but I believe that wasn't it. What they wanted to do was get interest rates up, and it wasn't long before interest rates were high indeed.

During this period, the congressional leadership on the banking side would have communications with Volcker. They would say, "We're going to say critical things, but don't you pay any attention to them. You're doing exactly the right thing. Keep it up." That was helpful.

But after a short period of time, the public outcry was gigantic, because we were, in my words, "nuking the economy." That was a required prerequisite to break the back of inflation and create the right expectations and strengthen the credibility of the central bank for future success. The real economy slowed down, and we went into a relatively sharp recession. Construction fell out of bed. Housing sales fell out of bed. Real estate agents were starving to death. Construction workers were starving to death. Contractors were being put out of business left and right. One of the methods of indicating their dislike was to send Chairman Volcker 2x4s in the mail to indicate that they didn't have any use for these 2x4s to build houses. You could take them and stuff them someplace, as far as they were concerned. Some of them had nails in them. It was a terrible thing. Volcker had a big pile of 2x4s in his office.

He once asked me how long did I think it would take before he could get prices down to reasonable levels. I said it was going to take five or six years. I was wrong, because within three years you could see inflation dropping down from these double-digit numbers, approaching 6 and 5 and 4. The economy was badly hit for an extended period of time into the early 1980s.

MR. KWAST. You mentioned the Congress. Do you have any recollections of any interactions with the White House at that time?

MR. ETTIN. I must have known, but I don't remember. My guess is there was not terrible opposition, or there wasn't opposition that was heavily verbalized. I can't remember a White House–Federal Reserve confrontation on the issue.

I think you will recall that they had tried price controls and consumer credit controls before, and that wasn't getting us anyplace. Some of that may have even lasted into the post-October 1979 period. It wasn't getting anywhere. Something had to be done. The judgment at the Fed was that, in a republic, we were the only ones who could bring inflation down. The cost in output and employment was terrible, but there seemed no other way.

When there were reports at Board meetings on how high interest rates were, there were nervous giggles. We were all moving into an environment we had no experience with—interest rate levels we had no experience with. We didn't know what kind of damages we were causing. I said at the time, "We don't know what causes inflation. What we know is, once it gets started, it's very difficult to stop." It was a painful process from which much was learned, which we'll get to momentarily.

Some banks were hurting badly. There were lots of losses, because not long after this move against inflation, there were problems in international lending. There were problems in the Eurodollar market. Oil prices were going up and down. At the end of the Volcker era, when Alan Greenspan came in, we had a sick banking system, but we had inflation by and large licked and a lot of the excesses worked out. Greenspan inherited an economy where he had some financial fragility, but he had an economy that was set to take off, and an economy with inflation pretty much squeezed out.

I'm proud of having worked under Volcker. I admire him tremendously. There ought to be statues of him in every park in America, because, in many ways, he saved the economy and saved us from what would have been significant problems. It was a terrible gamble that no politician could take. It worked out—at great cost—but if nothing had been done, there would have been, in my view, a terrible crash.

Paul Volcker, however, was opposed to innovation in financial systems and structures. He was opposed to paying interest on deposits. He was concerned about new competition from thrift institutions. He was opposed to combining banking and investment banking. He was a traditionalist on maintaining the kind of banking structure that had been created in the 1930s and 1940s even though he had been so innovative in conducting monetary policy. That was part of his makeup. He opposed any change. He once told me that no banking system in the world could survive paying interest on deposits.

MR. SMALL. The Monetary Control Act of 1980 became law within a year of Volcker arriving as Chairman. Was he the impetus behind that? If not, what was? That was a huge structural change.

MR. ETTIN. I don't know the answer to that. He may have not had a choice. The Monetary Control Act also included money targeting in some sense, because you had to report on the monetary aggregates. It included the view that we'll do away with the concept of membership, as far as the Federal Reserve is concerned. We'll have all financial institutions under your control. I think he must have played a role in that. It played a role in him moving towards contemporaneous reserve accounting so that the Fed would have the ability to better control monetary aggregates. So, yes, he must have played a role.

By the way, when Gramley was a Governor, he and I had a 15-minute conversation, at the end of which—we were old friends—we almost came to blows, because we were discussing CRA, except I was discussing the Community Reinvestment Act and he was discussing contemporaneous reserve accounting. As you might imagine, it was a confused conversation. I was convinced he was an idiot, and he was certain I was an idiot.

MR. KWAST. It must have been shortly after that—I think it was Governor Edward M. Kelly who suggested that instead of calling it "contemporaneous reserve account," they call it "contemporaneous reserve requirements" so [as] not to be confused with the Community Reinvestment Act.

MR. ETTIN. Right. Now, somewhere in Volcker's period, I don't remember the date, Paul Volcker became less than enamored with the skills I was bringing to the table on monetary policy, in large part because I frequently disagreed with what he wanted to do and the approach. He decided it would be best if I withdrew from being the deputy director for Monetary and Financial Studies and move back to the research division and stay out of monetary policy for a while. I came back into the research division as deputy director under Jim Kichline. Michael J. "Mike" Prell was the other deputy director. My assignment was then to be on the micro side—which, at the time, I knew nothing about and had to learn.

Let's see, if Volcker came in 1979 and stayed eight years, he must have left about 1986 or 1987, when Greenspan came. The last two or three years of Volcker's time, I wasn't working directly on monetary policy and was working on things like payment system risk. Volcker liked the kind of stuff we did for him then and became enamored with the microeconomics of regulation. Then Greenspan came.

As I said, Greenspan inherited a fragile financial economy but an economy ready to start growing again, and inflation had been squeezed out. In some sense he was lucky, although worried about the financial fragility. It's the reason why, I think, he moved interest rates so low early on and why he cut reserve requirements to help bank profits and to keep an environment where banks—after having huge real estate losses on their real estate credits in part because of monetary policy, but also in part because of the inflationary overbuilding—could rebuild their capital and resume their traditional role in lending. When you squeeze the inflation out, some of those assets that they thought would be good investments, as rents and real estate values continued to rise with inflation, didn't turn out that way. And then, with the things happening in international markets or in the Eurodollar market, there were still other losses. Lots of large banks failed, and lots of large banks were technically insolvent.

We kept larger banks afloat, and Greenspan created an environment where, with lower interest rates, the cut in reserve requirements were designed to enhance their profitability.

MR. KWAST. The Section 20 relaxation of the separation between commercial and investment banking in the Glass-Steagall Act—those got started under Volcker. That's when I started working in this area, too. My recollection is—correct me if I'm wrong—that while Volcker wanted to go slowly in this area, we started moving to make some changes.

MR. ETTIN. Yes. I think that the pressure on Volcker from his own Board and from the Hill to increase bank powers for competitive reasons was strong. He faced the risk of being outvoted by his Board. He and the new general counsel he had pulled in designed this method of going slowly by creating these entities that were mainly doing government securities—the

Section 20 affiliates. They would initially underwrite things that were short term, high quality as a kind of pilot to see what would happen.

Volcker and I never discussed this, but my guess is that, in his heart of hearts, he knew he was going to lose down the road, and that the Section 20s would finally die and be replaced by wider underwriting powers for banks. But remember, there wasn't any legal authority to do something. What was going on had to be tested in the courts first so that you were predominantly limiting these new affiliates to government securities that banks on their own could already underwrite. At one of these Board meetings, I remember a whole set of dictionaries on the table: What did "predominantly" mean? Because under the law, these affiliates had to be doing underwriting predominately in government securities. Did it mean just "a majority"? Did it mean "most"?

MR. KWAST. I remember that—going back to dictionaries in 1932.

MR. ETTIN. Right. But Volcker had no real desire to free things up. He had statutory change, and I think if he had his druthers, he'd rather not have the Section 20s. But as the Republican Administration was supporting the other Governors more and more, he was reaching the stage where he had to be careful where the line was. He was outvoted once on a discount rate, which was embarrassing. After the vote was cast, some of the Governors were happy that they had chastised him. Some of them that had voted to raise the rate were shocked that they had done it.[4] They didn't mean to, but that was an embarrassing event. Volcker knew that his power was waning vis-à-vis the Board. In particular, Wayne Angell, Manley Johnson, and Martha Seger were making life difficult.

[4] Editor's note: On February 24, 1986, Governors Angell, Johnson, and Seger and Vice Chairman Martin outvoted Chairman Volcker and two other Governors 4–3 over the discount rate—the four were in favor of cutting the discount rate. That action was reversed on the same day with an agreement that a discount rate cut would be postponed while Volcker negotiated with the West German and Japanese central banks to enact similar cuts.

MR. KWAST. Do you think Volcker was happy to leave as Chairman then, that he didn't want to be reappointed?

MR. ETTIN. I don't know the answer to that. Paul Volcker's people skills were virtually nonexistent. From the very first, he treated the other members of the Board not so well. And as his own power, influence, and prestige increased, he treated them with less and less respect. He was less interested in their opinions and made it clear.

I remember one Treasury lunch where Beryl Sprinkel, the monetarist that was chairman of the Council of Economic Advisers, was at the lunch. Paul Volcker turned his back to him and kept his back turned throughout lunch. As I said, he did not have people skills.

The chairman of the FDIC (Federal Deposit Insurance Corporation), William Isaacs, wanted to be his buddy. He would come to meetings, and Volcker would pretend he wasn't there—turning the FDIC under Isaacs into an anti-Fed institution simply because Volcker didn't treat Issacs respectfully.

Volcker was sarcastic towards other members of the Board. He couldn't stand Martha Seger. He didn't get along well with Vice Chairman Preston Martin. He didn't get along well with Manley Johnson when Manley was Paul's Vice Chairman of the Board. He didn't get along with Wayne Angell. He didn't treat them respectfully, and they wanted, I think, to pull him down a peg or two.

As a result, did he want to leave? I think it was hard to stop being Chairman of the Federal Reserve. I think he would have liked to stay, but not with that group. I think he knew that it was time to move on. I was at the meeting when Greenspan was introduced to the staff. Volcker was the most gentlemanly, the most charming, and the most sensitive in introducing Greenspan that I had ever seen him be, and with apparent sincerity. I don't know whether this was legal, but Volcker had Greenspan at a couple of Board meetings sitting next to him, I think, before he was confirmed. Is that right?

MR. SMALL. I remember at least one Monday economic briefing.

The Transition from Chairman Volcker to Chairman Greenspan

MR. ETTIN. Greenspan was shy and sensitive, and Volcker could not have been nicer to Greenspan, even though they had fundamental disagreements on policy and which way policy should go.

During the Volcker period, there were a lot more professional economists on the Board than there had been. During the heyday of Greenspan, we essentially reached the stage where they were all professional economists, and I think that's going to stay forever. I think it's going to be hard to change—to the great benefit of the organization and, more important, the country.

I know I'm jumping all over, but under Volcker, it would have been impossible to have an economic briefing where you had equations and complicated graphs and real economics. Under Greenspan, that was required. Early in Greenspan's chairmanship, he asked me a question, and I sent him a paper. He sent me a note—which, my God, I wish I still had—a handwritten note that said he'd like to see the model that underlay[s] that.

MR. KWAST. I remember that.

MR. ETTIN. I said to him the next time I saw him, "To my knowledge, no one who has ever sat in that chair has ever written a note like that to anyone." Vis-à-vis the Board, Greenspan knew that one of his assignments was to develop collegiality. For the first year, he went out of his way to manage and—I use this word advisedly—manipulate individual Governors so that they would feel as if this was a collegial group; they were making collective decisions, and the Chairman was just one of many. He was great at it.

Over time, as he began to believe his own press, which is hard not to do if you're in that chair, he began paying less and less attention to them. But for the first couple of years, he went out of his way to have and insist on collegiality and to make sure nothing was done that they didn't know about and agree to it. He was very adept at manipulating.

Impressions of Chairmen Martin, Burns, and Miller

MR. SMALL. It certainly seems that Fed Chairmen Martin, Burns, and G. William Miller had different personalities. Does anything come to mind that reveals their personalities and their quirks or their human nature more than their managerial side?

MR. ETTIN. I'm not sure how much it illuminates their personalities, although some of the stories that come to mind were funny.

Once, just before Martin retired, he and I were returning from the White House Executive Office Building in his car. During the trip, I had my one and only conversation with him on nonbusiness matters. I said, "It's my understanding, Mr. Chairman, that the only thing you invest in is Broadway, because it's the only thing that you think is unaffected by the Federal Reserve." He said, "Yes, I love the theater. My first job was as a drama critic in one of the old New York newspapers. I saw every play, and I loved everything I saw, whether it was good or bad." He said he remembered once when a play was full on opening night, but by the third act there were 17 people in the theater; he went back to the newspaper and wrote a glowing review. I said, "Mr. Chairman, I understand that you like musicals in particular." He said, "I love musicals"—and there, in the back of the car, he began to sing *The Impossible Dream,* which is one of my warmest memories of him and, I think, of being at the Federal Reserve.

Martin's skill as an economic analyst was not high, I am told—this is secondhand from Dan Brill. No matter what the staff might prepare in the way of an analysis and a briefing, he would say things like, “That’s all well and good, but I was in the basement of Macy’s yesterday, and the store was busy, so I don’t care what you say about retail sales.” Dan told me that Martin had once said to him that he depended on his staff the same way a drunk depends on a light post: for support, not for illumination.

Arthur Burns did not have the world’s greatest sense of humor. He was pretty much always working and pretty much always working on his more serious mode and aura. Early in his tenure, I was chief of the Capital Market Section. Since so many securities firms were failing, there was an effort to insure brokers’ accounts. Ultimately, insuring brokers’ accounts became law as part of SIPC (Securities Investor Protection Corporation), but at the time, there were several proposals before Burns on which that he had to make a judgment. One of the proposals was from the Securities and Exchange Commission (SEC); it would do the insuring, and if the SEC ran out of money, it would borrow from the Treasury at a zero rate of interest.

I had been in Burns’s office for about three hours. He was going over the various legislative proposals line by line, with me sitting next to him answering his questions. He looked up in the most thoughtful way, really thinking, clearly thinking, and saying, “Mr. Ettin, what could be the economic rationale for a zero rate of interest?” And I said, “It’s a good price, Mr. Chairman,” at which point he exploded. He came out of his chair and said in no uncertain terms, in a loud voice, that he was a busy person, and he didn’t have time for this tomfoolery. I found myself seated in this chair next to this elderly gentleman having a temper tantrum, saying, “I’m sorry, Mr. Chairman. I’m sorry, Mr. Chairman,” thinking to myself, “But why am I apologizing because he’s having a temper tantrum?”

The next day in the Board room he asked me a question, and I said, “Mr. Chairman, would you like the short answer or the long answer?” And he said, “I’ll take the short answer.”

I said, "I don't know." He said, "What would have been the long answer?" I said, "It would have taken more time, but it would have had the same effect." He looked at me, I like to think, with a thought that said, "Okay, we're even, guy, but watch it."

For the remaining eight years of his term, whenever I was alone with him, I was fearful. I rubbed my toe in the dust. I pulled my forelock and was deferential, sure that he was going to eat me up at any moment. But if anybody else was present, I had to demonstrate that I wasn't afraid of him. He was just another guy, and I'd be flippant. That continued for eight years.

After his retirement and after he returned from being ambassador to Germany and was an older man, Burns called me two or three times, and we had lunch. It was a nice conversation. I had to support him as he walked down the stairs. He was an old man, but his mind was active, as far as I could tell, to the end.

I had mentioned that Burns worked on his persona full time, and often it was like preparing for the theater. There was one time when he was preparing to give testimony on NOW accounts—a topic about which he knew nothing—before a congressional committee. He didn't like to testify unless he felt himself to be an expert and able to answer all questions. For about a month after I had prepared his testimony, he would go over it and over it and ask questions. It was my 25th high school reunion, and he would not let me leave town to go to it. I had to stay there. We worked weekends and nights on it. He had permission to call me until 11:30 every night, which he exercised. He would call, and it was clear he was working on a script, because he would say to himself, "Well, if they ask this, I'll say that," et cetera.

It reminded me about the story of Douglas MacArthur and Dwight David Eisenhower, where Eisenhower, who was MacArthur's chief of staff, was once asked if he had worked for MacArthur. And he said, "Worked for him? Hell, I studied theater under him." That was a little bit like working for Burns. Image was absolutely critical to him, not to suggest that he didn't have a fine mind and good ideas.

As far as Miller, I couldn't find the button that has anything to do with his personality or mind other than his nickname here was the "Electric Butterfly," which maybe tells it all.

Impressions of Chairman Volcker

MR. ETTIN. Paul Volcker was probably the best writer I ever knew as Chairman of the Federal Reserve. He could take testimony or a speech and improve it significantly. He was interested in practical ideas. He was more respectful of practitioners than he was of economists and certainly of theorists.

He distrusted anything that came from a model. Literally, if it was something that you had on a computer printout, I would either type it or copy it over in longhand and give it to him, because if it came from a computer printout, he would think it was model based and would not pay any attention to it. The more practice based and practical your recommendations were, the more attractive he found it.

Not to say he wasn't a person of ideas, because he was. He was the most courageous of the Governors that I worked for, October of 1979 being the case in point. He had more sheer intellectual force than any Governor I ever worked for. Of all the Governors I worked for, I have the most admiration and respect for him. I preferred to work for Greenspan, because he delegated and really listened to your ideas. Don't get me wrong: I respected Greenspan a lot; he too had convictions and courage. But Paul Volcker was the most courageous leader I ever had the pleasure to work with; he could take the skin off your back with his tongue—"I like to have an economist for breakfast every morning"—but the republic badly needs men and women like him: smart and gutsy public servants.

Impressions of Chairman Greenspan

MR. ETTIN. I enjoyed working for Alan Greenspan more than any other Governor I ever worked for, because you were an equal with him. You were a participant, and he was interested in ideas and concepts and economics. He loved economics, and, alone or with other colleagues available in the room, you could argue with him and you could win. You could sometimes change his mind. He once had the patience to let me argue with him for six months over the position he was going to take vis-à-vis the Congress on certain proposals to restructure the Federal Reserve. I thought what he was doing was the wrong strategy. I kept coming up with arguments for why, and he would patiently listen. And, literally, at the end of a six-month period, he said, "I've listened to all your arguments. Now, this is the way we're going to do it." I lined up behind it and helped him as best I could. And by the way, he was right. He was absolutely right, and I was wrong.

The point I'm trying to make is that you could argue with him, and I think other colleagues found the same thing. He would delegate to you to do things if he thought you were okay. If he didn't think you were okay, he didn't want you in his office.

I think, enough with stories.

The Chairmanship of Alan Greenspan (1987–2006)

MR. SMALL. Earlier we started to talk about Chairman Greenspan, how he inherited low inflation but a fragile economy, and about your switch over to the micro side.

MR. ETTIN. This meshed with what his interests were on the fragility of the economy. There were a lot of efforts to deregulate and to change the regulatory structure. Greenspan was, as you might suspect, a supporter of any form of deregulation, being the believer in the market process and unfettered competition.

So my colleagues and I spent considerable time, particularly in the early years of his tenure, working on things like a repeal of Glass-Steagall, reform of deposit insurance, trying to modify merger rules to make them more permissive, and trying to reduce interstate banking issues—for many of which the time had come. It wasn't just his efforts. Many of those would probably have occurred anyway, but he was certainly instrumental in making them happen more rapidly. Also, he was responsible for more flexibility in the kinds of activities banking organizations could engage in. Greenspan showed himself to be not only a skilled analyst of competitive events, but a good politician and a good persuader of his colleagues. It was an interesting time to be working on regulatory structure issues and microeconomics, because they were important in the kinds of things that Greenspan wanted to address during his tenure.

On the macroeconomic side, I think he showed great skill and subtlety, particularly in being the first to understand what was happening on the productivity side and what was happening with the implications for rising home equity and stock values as wealth on consumption.

I think it would be a mistake to ignore the fact that Greenspan was also lucky to have been Chairman during that time, because the heavy lifting of breaking the back of inflation had been done by his predecessor. The financial crises just before he came and in the early part of his career cleaned out all the overhead so that he inherited an economy ready to expand if the right policies were followed, and he helped follow those policies.

MR. SMALL. So, of the crises, there was the 1987 stock market crash and, in the late 1980s and early 1990s, there was the savings and loan (S&L) crisis.

The 1987 Stock Market Crash

MR. ETTIN. Let's stick with the stock market crisis for just a moment. Greenspan did an absolutely brilliant thing that has been copied ever since. He arrived at an American Bankers Association conference to give a speech. Not only did he immediately come back to Washington after this huge stock market break, which unsettled everyone, he put out a one sentence announcement—namely, that the Federal Reserve discount window is available for anybody that needs it—and that was it. There was one sentence. No other commentary. No big speeches about "Don't worry." What he was saying is, we're here, we're in business, and we're going to provide any liquidity you need. Now, of course, the FOMC in its conference calls lowered interest rates through open market operations.

That was exactly duplicated on 9/11 when the Vice Chairman, Roger W. Ferguson, Jr., who was the only one in town, absolutely duplicated that by simply adding a phrase: "The Federal Reserve is open, and the discount window is available for anyone who needs it." The indication that the central bank is available in a crisis and moving interest rates in the right direction during crises was cleverly done—not only in the stock market break, but when lots of banks and thrifts were failing in the early 1990s as a residue of getting rid of the inflation as well as some international issues. We're now in March 2006, as captured quite well in Chairman Ben Bernanke's most recent speech about inflation and monetary policy.

The credibility that the central bank received as a result of the combination of the Volcker–Greenspan policies of breaking the back of inflation and of adopting monetary policies when needed that constrained, and at other times fostered, growth has communicated to the financial markets and the public generally that the Federal Reserve won't let another inflation happen. It is the reason why, if there is any indication of inflationary pressures, there's a rapid adjustment in interest rates in anticipation that the Fed is going to do the right thing.

That kind of credibility is important for the Federal Reserve. It was the kind of credibility that the Federal Reserve did not have during the Martin period, during the Burns period, and during the Miller period. In my opinion, it's critical that future Federal Reserves maintain that same kind of credibility. Before, we always erred on the side of trying to get short-term growth and not worry about the price implications. This is not a political statement. I think it's a technical economic statement, with the results that we engendered exactly the wrong kind of expectations. The market place had too much instability and high inflation. As a result, the economy didn't have as much growth as we otherwise would get and had higher inflation.

MR. SMALL. At the time of the 1987 market crash—and maybe you can mention some other episodes—do you have a sense of the feel here at the Board or the staff in real time at those moments?

MR. ETTIN. Yes.

MR. SMALL. You hear some stories that the Fed has contingency plans for everything. We calmly pull out these well-developed plans and simply execute them, or, on the other hand, it might be more freelancing. Do you have a sense of the 1987 stock market crash and, subsequently, what, as a senior staff member, the feel of crisis management was?

MR. ETTIN. I've seen those contingency plans, and they are laughable, in my view. I think they're—if it makes you feel better [to] write it down, that's fine.

The ability to respond in the right way depends on having experienced senior staff and policymakers who have exactly the right political and economic savvy. What I mean by "political" is, their public relations savvy—how to say things and knowledge of how to go. As time passes, you have the death and retirement of people who have lived through crises and know the experiences that are needed. Who was the head of banking supervision that died, Bill—?

MR. KWAST. William “Bill” Taylor.

MR. ETTIN. You have people like Bill Taylor, Steve Axilrod, and Donald L. “Don” Kohn now who, thankfully, are on the Board. The experiences of people who have “been there and done that” and have played a role in knowing who to call and what to say is very valuable. You can write all the contingency plans in the world. Each crisis is different, and they are not going to be helpful. Experienced senior staff and experienced members of the Board are critical. When guys like Don retire, those are incalculable losses. The things that a guy like Don has in his head or that Bill Taylor had in his head or Steve Axilrod or others is valuable stuff.

Alan Greenspan has been through a couple of crises. You just have to remember history and behave accordingly. I have great faith that Ben Bernanke is a good reader of history, so he’ll be helpful. And Don Kohn being here is going to be very helpful as well, should there be another crisis.

The Infrastructure of the Financial System

MR. SMALL. The public in general has a good sense of what the Federal Reserve does in setting interest rates. You’re involved in the payment system and risk contagion and systemic risk and that infrastructure. I think those areas and the potential problems are much less well known. Can you talk about how they have been strengthened over the years or what episodes came up that were out of the general public view that the public might not see so clearly?

MR. ETTIN. Yes. E. Gerald “Jerry” Corrigan refers to much of this as the “plumbing” of the financial system. The general public is totally ignorant of what the Fed does besides set interest rates, I think. They maybe understand we help play some role in clearing checks, but they don't really understand it.

One of the things that I worked on was the large-dollar transfer systems, the fed funds transfers, and the credit exposures that the Federal Reserve accepted as a result. One of the things we did was develop tediously, over time, rules and regulations that make these payment systems much safer—requiring banks to have certain controls, requiring banks to be aware of the credit exposures that they're creating for themselves, limiting the amount of exposure they can take, and, by the way, limiting our own (the Fed's) credit exposures.

Most importantly, once we understood it and developed the programs for the United States, we then went abroad, visited other central banks, and—through the good offices of the BIS (Bank for International Settlements) and a little bit of the OECD (Organisation of Economic Co-operation and Development), but mainly through BIS—created international committees to come up with standards for other countries, which resulted in dramatic changes and reductions in the risk on large-value transfer systems in Europe, England, and Japan. I don't know whether those initiatives would have occurred anyway, but I do know that they were at least accelerated because of the leadership role the Federal Reserve took in addressing those issues.

Moreover, people on the risk side of the research group, people like Pat Parkinson and Pat White, have understood how some of the financial innovations like derivatives create risk but also reduce risk. Parkinson and White have played a significant role, along with Chairman Greenspan, in explaining to the world that there are real benefits here: Don't regulate too aggressively, but do get good risk-control systems put in place at the financial institutions that are participants.

On the side of banking structure, Myron Kwast and his colleagues have played critical roles in coming up with good merger policies to protect competition. We all have been working hard to develop risk-management tools that banks apply in their own exposures to make the banks safer, to make sure they have a capital structure and internal controls that makes sense.

This part of the microplumbing, what I call the "economics of regulation," is important for building a more stable role in banking. Lots of people, in my view, who don't know what they're talking about think the financial system is more unstable because of things like derivatives and globalization. I think it has become more stable as it has become more globally diversified, as better controls have been put in, and as we have instruments like derivatives to help us spread risk. That's not to say it's riskless. There will be another crisis. There will be other failures.

My personal taste, which I think my colleague Myron might share, is that some of these giant banks are frightening, because if anything happens to them, our only choice may be—at least for some period—to nationalize them until they can be reorganized and recapitalized. We ought to think about how to do that. That's a hard thought.

We also, I hope, played a significant role in getting people to understand that insuring deposits may bring some stability. If you go too far in insuring or regulating, what you create is a moral hazard where the market participants themselves don't worry about the risks being taken, because they expect "Uncle Sugar" to bail them out. For the thrifts, we had to bail them out because deposit insurance, bad regulation, too much risk-taking, and the fear of systemic risk if we let institutions fail created a huge hole of about $130 billion that had to be paid by the taxpayer. We could lose more than that in one commercial bank if we're not careful.

Having people understand the moral hazard that comes with too much regulation and the need to have more reliance on individual bank risk management, disclosure, and transparency was an important part of what the Fed was trying to get across in the term during which I was in charge of this area at the staff level and, most importantly, during which Greenspan was Chairman.

In the world more broadly, there is an increasing effort to take central banks out of this business, on the thought that a central bank that's involved in monetary policy shouldn't have all the powers that come with regulation and financial market supervision as well. It diverts them from their major job of monetary policy.

I fully anticipate, as has happened at least twice in the last 20 years, that now that we have a new Chairman—and he hasn't paid his dues yet, as it were—that there will be, in short order, efforts from the Congress to divest the Federal Reserve of some of these responsibilities and move them elsewhere. That would be unfortunate, because we have a lot of intellectual capital here that's already worked on regulation and financial market supervision. We can do the linkage to financial stability, which independent regulators don't tend to do. This will be a major concern in the future.

On the other hand, there's likely to be an increased effort to make our responsibilities, if we keep them, broader so that we're more of an umbrella supervisor in the entire financial market. That, I think, would not only be difficult for us, but it would tend to create moral hazards if markets that are not now regulated by the central bank become regulated by the central bank. Participants will feel more comfortable and less risk sensitive, and we may have real problems there.

The Thrift (Savings and Loan) and Banking Crises (1980–94)

MR. KWAST. Can we go back to the thrift and banking crises? Because after the stock market crash in 1987, the longer-run crisis was the 200 banks a year that were failing between about 1985 and 1990. Do you have any recollections of that particular time?

MR. ETTIN. Yes.

MR. KWAST. What policymaking took place?

The Thrift Crisis

MR. ETTIN. Let's separate the thrifts and the banks. The thrifts failed at such expense for two or three major reasons. One is, they had these long-term assets and short-term liabilities and, in periods of high interest rates, had the resulting disintermediation. We had a gigantic liquidity problem during the Volcker years. It wasn't a solvency problem. The assets were still safe and sound, but this liquidity problem was killing them. Over time, thrifts' profits went to hell, so their capital was eroding because they had to pay a higher rate for deposits. At the same time, their mortgage rates were fixed.

In an effort to save themselves—to increase their profits and be able to afford to pay higher rates on deposits as deposit ceilings were phased out—thrifts went out after riskier assets, and the regulator let them do it. Not only that, the Congress had increased the insurance cap on deposits of less than \$100,000. There was no interest ceiling for deposits of \$100,000 and over.[5] As a result, thrifts were able to issue insured, high-rate deposits not subject to any rate ceilings (those exactly at \$100,000), with the investors unconcerned about the risk of failure of the issuing thrift because the deposit being \$100,000 or less was totally insured. Thrifts couldn't issue deposits over \$100,000, because the amount over \$100,000 was at risk (not insured). They

[5] Editor's note: See the Monetary Control Act of 1980.

couldn't issue some deposits fully insured under $100,000, because they were subject to rate ceilings that were too far below market rates. But exactly at $100,000, thrifts could issue fully insured deposits at any rate that was needed to attract depositors. It was a great no-risk, high-yield deal for the depositor with the FSLIC (Federal Savings and Loan Insurance Corporation) and, ultimately, the FDIC taking all the risk. With the deposit proceeds they could then raise, the thrifts—most of which were economically insolvent, and all of which were illiquid—went out and bought these risky assets, taking a bet that they can make enough money to rebuild their capital, pay the high rates, and live through this period. There was, of course, no market discipline because of the insurance and immense moral hazard.

This was an absolute total failure of regulation, of which the Federal Reserve participated. The Federal Reserve participated by not opposing a rise in the insurance cap to $100,000, which I think was an oversight. The only Federal Reserve commentary on this is in the appendix in testimony by Chuck Partee, and the Fed didn't take a critical position.

Moreover, as with all supervisors and regulators under a crisis, when these savings and loans were going down and there wasn't enough money in their insurance fund, we came up with ways to extend the period to give them a little bit longer to work out their problems. I guess the Federal Home Loan Bank issued the so-called working capital certificates and let the entities hold [the certificates] as an asset to increase their capital. If you pick up one of those certificates and look at the bottom, it said "Made at the Federal Reserve." And if you look at the fine print, it said "Dreamt up by Ed Ettin." I will go to hell for that, I'm sure, but I thought we were only talking about a little bit longer: "Your Honor, I didn't know, I was only following orders."

But it just made it worse and worse until the hole got so big and the failures were so obvious that the pin had to be pulled. It cost the taxpayer big bucks and wiped out the thrift industry that came back as banks. And it left the Federal Home Loan Banks scratching their head about what their role should be (and how to keep staff jobs). They came back as lenders to all financial institutions using their agency status—our government subsidy—to make big bucks and pay big salaries. Is this a great country or what?

The Banking Crisis

MR. ETTIN. For the banking crisis, during the period of inflation in the 1970s when everything was increasing in value, especially real property, commercial banks believed that they could lend on commercial or residential real estate with little borrower equity, because five years from now there would be a 50 percent profit, and then there'd be a lot of equity, and they were going to be able to get repaid on the sale of this property, no sweat. Huge amounts of risk were taken with no control. Where was the supervisor? I don't know. It was not one of the finest days for the Fed, the OCC [the Office of Comptroller of the Currency], and the FDIC. Huge loans were made in the petroleum industry because of OPEC (Organization of the Petroleum Exporting Countries). Oil prices were going up. You couldn't lose. There were loans being made on predictions that oil would be $100 a barrel. Even some investors said it would be $60 a barrel, but that was a long time ago. In the meantime, the oil prices collapsed.

It was not only petroleum, but it was real estate. I cannot remember the details now, but there were also some problems in the Eurodollar market. I don't remember the details of that. But suddenly we found a large number of banks whose assets were in a lousy position based on real estate loans, petroleum loans, and also some regular commercial loans, which couldn't be repaid during a period when the economy was in a slump because of high interest rates. It made matters worse, because these banks were taking losses that were eating their capital. They reduced the amount of new loans they were willing to make.

In the early days of the Greenspan era, one of the problems that the new administration faced when it came in was how to persuade banks to make loans—this was even in the early 1990s—because they were so cautious, having just seen their capital eroded and many having near-death experiences. After all the bank failures, for the survivors who had built up their capital by lots of equity issues and by lots of borrowing, the lowering of interest rates and reserve requirements by Greenspan, in order to make them more profitable, was a safety line. But still, banks were cautious in making loans, and so the weakness of the early 1990s was one where bank financing was hard to get. People were still feeling their way, still uncertain about how strong the economy was, what the financial relations were, what the fragility was. It was not until 1993, 1994, or 1995 before the economy really started to take off again, and, in part, that was because of banks' evolving willingness to make loans as their strength returned.

Not only is a crisis—an extended crisis, in particular—costly during the crisis, it very much changes attitudes thereafter. Attitudes and expectations have to be readjusted, and that was the problem with credit availability in the early 1990s, which was a crisis not in the sense that people are failing, but a crisis in the sense that the economy just wasn't going anywhere. Unemployment was running high. We had inflation subdued, but we couldn't get the economy going.

As I said, Greenspan was lucky in inheriting a situation like that, because once you get the economy going, there were a lot of excess resources for real growth without inflationary pressures. The Fed had built credibility that it was not going to permit inflation, but Greenspan's actions to strengthen bank profits helped build the conditions for renewed lending and subsequent growth, and his subsequent monetary policy was not short of superb. But he was lucky in the environment Volcker bequeathed him.

We were also lucky that productivity growth rose, which Greenspan saw and understood when others didn't. It was at the time when, finally, the computer and other infrastructures were being put into place that would contribute to that rise in productivity and when, in a world of globalization, there was tremendous pressure on businesses in the United States to keep their costs down. So you could have fairly rapid growth without inflationary pressures and without the need for the Federal Reserve to clamp down on inflation.

The Federal Reserve began to raise interest rates when there were some inflationary pressures. That added to our credibility. We didn't have to increase interest rates as much as we would have had to have done in, say, an "Arthur Burns" environment in order to get that credibility. Again, I recommend you take a look at Ben Bernanke's paper that he gave at Princeton this month or late last month.[6]

MR. KWAST. During the banking crisis when so many banks were failing, there was a lot of talk that the FDIC was insolvent and that some of our largest banks were perhaps insolvent.

MR. ETTIN. Both those things were true. If you had any kind of marked-to-market pricing, they were insolvent.

MR. SMALL. You went to the FOMC meetings at that time. Was there discussion of the link between monetary policy, let's say, and the stability of the banking and financial system?

MR. ETTIN. It was a reason why the FOMC wasn't interested in raising interest rates. But there was no cause for them to want to raise interest rates anyway, because not much was

[6] Editor's note: Ben S. Bernanke (2006), "The Benefits of Price Stability," speech delivered at the Center for Economic Policy Studies on the occasion of the 75th anniversary of the Woodrow Wilson School of Public and International Affairs, Princeton University, Princeton, N.J., February 24.

happening in the economy. Yes, they were concerned. The only thing the FOMC could do was get interest rates lower, which is, in part, why they adopted lower interest rates—to try and help the banking and financial system out and facilitate it. But they knew interest rates alone couldn't do it. A lot of those problems just had to be worked out.

There were lots of plans for reform for the FDIC, because the FDIC was broke. One of the ways we got through this situation was by keeping the banks afloat to give them time to either arrange new financing, arrange a merger, or to do something to bail them out so that the FDIC wouldn't have to pay out money that it didn't have.

The parallels with FSLIC are there, except that FSLIC permitted institutions to go out and take risks in order to build up a profit to recover from this. The banks never tried to increase risk-taking. I don't know whether it was that bankers don't think like that or whether it was bank supervision that constrained them from doing that. As I said, I think it was having had a recent near-death experience. They had to work out of a sticky situation. As Greenspan said at a Board meeting, this was the time you didn't need prudential supervision; banks were supervising themselves more than any regulator would.

If we had been following rules, if we had been following marked-to-market accounting, our banking system would have been like the Japanese. It would have collapsed. There were times when the largest bank in the United States was insolvent on any kind of realistic basis, and it took time to work that out.

Staff Forecasts

MR. SMALL. You talked earlier about the evolution of the staff forecast and how it started out as almost a backroom operation.

MR. ETTIN. Not almost, it was a secret. They did it at the research director's home on weekends.

Monetary Policy and the Financial Sector

MR. SMALL. How different was conducting monetary policy then compared to now? On the topic of financial plumbing, as you said, back when you came to the Board, there were interest rate ceilings and limitations on what banks and S&Ls [savings and loans] could invest in. When watching the impact of monetary policy on the financial system, the information you had back then must have been very different from the information you have now. I'm wondering if, analogous to how the staff forecast for monetary policy and interest rates has changed, you could discuss how observing the transmission process through the financial sector has changed.

MR. ETTIN. Until the late 1970s, there were no economists looking at the payment system. It was something the technicians took care of. Let's explore why.

Until the mid-1960s when interest rates rose for the first time in the postwar period, they rose in a kind of significant way. Funds were still being transferred by telegraph. Computers were just coming in. It wasn't until you had an effective, high-speed computer system that you could transfer, in the wholesale money market, the gigantic amounts as rapidly as we now can. Before that they were taking funds out of one account and putting them into another as a result of a telegram. The telegram might go through a computer, but we didn't have this high-speed transfer of funds. When that started to happen, nobody thought of building into the system, say, for the Federal Reserve accounts: "Hey, during the day when they put the money out, do they have the money there?" When they were doing it manually back then, they could see the amount in the accounts. With the new computer transfers, you had these gigantic overdrafts occurring that we didn't even know about.

When Paul Volcker asked me to look into daylight overdrafts, I said, "What's a daylight overdraft?" I had no idea what it was when they first told me. I said, "So what? They'll put the money in by the end of the day. Who cares?" You realize the scope of the potential problems when you start looking into the billions of dollars of exposures of credit risk for the Federal Reserve if that bank can't put the money back by the end of the day, and the daylight overdraft was completely uncollateralized.

We started looking at the trading banks—banks that are engaged in a lot of trading and are offering themselves as clearers for others. What are they doing? They've got a huge credit exposure, too. The banks had also set up for themselves a cooperative organization—CHIPS, the Clearing House Interbank Payments System—for doing dollar settlements for foreign exchange trades, where they were running large intraday exposures, too. They're in business for fun and profit. They were not concerned about the externalities of the risk. We started getting involved in managing that. That was all brand new, because it didn't exist before. If there had been a problem, any one of those credit exposure problems could have made any crisis worse, with the economists not being helpful because they wouldn't know what it was about.

We were the first group that studied that problem from an economics point of view and gave recommendations on how to address it. The guys who were enjoying all this free credit during the day were mightily upset and would say things like, "If you start to regulate this credit exposure, the financial market will freeze up." We had tremendous obstacles in persuading some of the Board early on that the financial markets will not freeze up. There are a zillion ways they can go around addressing this exposure, and it will just require them to spend some money to manage their exposures and balance their accounts.

MR. KWAST. I don't want you to ignore Basel II and the history of Basel.

MR. ETTIN. These things about plumbing didn't start to get developed until the computer happened and until the mathematics and computer permitted you to create new kinds of instruments that could transfer risk more rapidly. It wasn't an issue in the 1950s and 1960s. It didn't become an issue until the 1970s.

Basel and Capital Requirements

MR. ETTIN. Myron just suggested I ought to say something about capital requirements. Would you like me to move to that?

MR. SMALL. That would be great.

MR. ETTIN. Okay. There wasn't a lot of thinking that had gone into capital requirements in the United States in the postwar period. There was a contention by many that in a world of deposit insurance, discount windows, and open market operations that could provide lots of liquidities, banks didn't need a lot of capital. If they only had 1 percent capital, that would be enough, because they haven't got any problems. Their deposits were insured—nobody would lose any money. Or, if the bank needed money, it could borrow from the Fed, et cetera. During my career, a banker in the Board Room said to the Board, in one of these consultants meetings, "I think the right capital for a bank is zero."

Early on, by the time I joined the Fed, bank capital was determined on a sort of rough-and-ready manner from using something called the ABC form. The supervisor filled out what kind of assets they have. I don't know what the "B" stood for, but there was liquidity and deposits, and they'd come up with a capital number that was somewhere between 4, 5, or 6 percent. That would be adequate, depending on the quality of their assets.

I don't know whether it was the United States or the British, but there was an Anglo-American agreement, which became Basel I, to determine a minimum amount of capital determined by the riskiness of assets. It was a step forward. There were only three or four buckets of risk, and for the most important thing, the loans themselves, there was only one possible bucket.

It was a modest step forward, but it tended to make the supervisor focus on the right thing, the riskiness of the assets. Let me tell you the origin of this Anglo-American agreement on how to do things. U.S. banks began complaining mightily that foreign banks were being able to acquire institutions in the United States and merge in the United States with less capital than American banks. The American authorities would always insist that a U.S. acquiring bank or a merging bank have adequate capital. They were being put at a disadvantage vis-à-vis foreign competitors whose supervisors didn't require them to hold as much capital. The foreign supervisor generally said, "That's because we back our banks more than you in America back your banks." On competitive equity grounds, Volcker negotiated with the British this Anglo-American agreement with this sort of risk-based capital; both countries would insist that their banks hold these kinds of level [of] capital. It was sort of moving internationally.

At that time, the Japanese were a major player in the global banking market before their banking system went to hell, and they wanted to be part of this Anglo-American agreement. As soon as they started, every other major country didn't want to be left out of this agreement. The negotiations moved to Basel to essentially take the Anglo-American agreement and do a little shining, polishing, and kicking so it would fit for most of them. Essentially, what the G-10 then did was adopt a common standard Basel I with all kinds of modifications in it. Since the Japanese didn't have as much equity as other people, but the government stood behind its banks, we let the Japanese treat debt kind of like quasi equity—hence, Tier 2 capital.

As time passed, banks were taking certain risks and building weak risk-mitigation systems. Banks discovered ways to get around the Basel I standards by capital arbitrage so that what looked like strong capital wasn't because of the way banks were arbitraging (getting rid of the assets that had too much capital requirements and keeping the assets that had too little capital requirements relative to the market). Banks ended up keeping the riskier assets and getting rid of the less risky assets, which didn't seem like the right thing for banks to do, but Basil I created that incentive.

Eight years ago at Basel, the United States initiated a proposed revision to the initial Basel requirement (Basel II), which would be incredibly more risk sensitive. Real mathematical tools and formal techniques would be used to better measure the riskiness associated with certain classes of assets to make the capital requirement more reasonable, based on a finer grading of the riskiness of the bank's assets. Banks would have to put in place much more rigorous risk control techniques than they then had.

Initially, we erroneously believed that we were simply writing into rules what the banks said they already had. We thought initially we were just making the regulations and the best practices at cutting-edge banks the same thing. But when we looked more closely, the banks weren't anywhere near where they said they were. We were ahead of the banks in the kind of control systems they should have.

The Basel II requirements would be costly to the individual banks on which they are imposed. For those banks with risky assets, the Basel II requirements might cause their capital requirements to rise. Because of ignorance, some observers would say, "If a bank is safe, it could end up with lower capital requirements than under Basel I. Isn't that bad, to have capital going down?" They don't realize—if you have safer assets, you could have less capital. They don't realize that what we're trying to do is produce a regulatory minimum. The market may insist that you hold some capital above that, given their evaluation of your risk.

Basel II has moved much slower than it should have in the United States. We face every risk of something that the United States began, that it intellectually created, being adopted in Europe and Asia before it is adopted in the United States, because our process allows the regulated considerable leeway in commenting on what the regulator wants to propose and to influence their elected representative to be critical. I think this is a process by which the United States will be greatly disadvantaged if its rules are watered down. It will take a much more strenuous effort to adopt a regulation, and any regulation will probably be watered down. With our banks engaging in very difficult and complex transactions, we will not have the right regulatory framework. We'll ultimately get there, but the process is being greatly slowed down by political realities.

One last point: I said Basel II was developed in the United States. To be more specific, the framework was developed at the Board by John Mingo and David Jones and explained to other central banks, first bilaterally and then at Basel. That makes late adoption by the United States of what I fear will be a greatly watered down version even more of a shame.

Terrorist Attacks on the United States on September 11, 2001 (9/11)

MR. SMALL. Let's talk about 9/11.

MR. ETTIN. I'm sorry to say, I have very little to add. On the morning of 9/11, I was at my doctor's office and heard about the airplane crashes. On the way home from the office, my wife called and said, "I called the office, and they said the government is closed. Go home." So I went home and watched television all day, not knowing—because nobody had told me—that I was a member of the emergency team that was supposed to be here. So I wasn't here to see firsthand everything that went on that first day. I just heard it secondhand, when Don Kohn and others working with Vice Chairman Ferguson did such an outstanding job. For various reasons, the Vice Chairman was the only Governor that was present. The others were all traveling and couldn't get back, including the Chairman, who was trying to get back from Europe. As I said earlier, Vice Chairman Ferguson hit all the right notes by putting out that one sentence: "Now the Federal Reserve is open, and the discount window is readily available," or whatever—words to that effect. I think he did a brilliant job.

The next few days I was present as we contacted—in conjunction with the New York Fed—key players in various markets who were sharing with us where the problems were. As you recall, we let the overdrafts—payments that were drawn on accounts which were empty because they couldn't receive payments from others—just build up. We also opened up the discount window—I think that overdrafts reached over $100 billion, as I recall—which was continuing to provide liquidity to the system as it was needed.[7] We played advisory roles on when to open up markets and exchanges again. We also used our intelligence systems from the Reserve Banks and direct with market contacts to keep information flowing.

Subsequently, under the leadership of the Vice Chairman—I did not play a role in this—there were groups set up to see what we could do to modify existing structures and to put requirements for backup facilities at large private institutions to minimize the distortions that would occur in future terrorist acts. Those, as I understand it, are all complete, and Ferguson had been the guy that directed those.

[7] Editor's note: Discount window lending peaked at $46 billion on September 12. See Roger W. Ferguson, Jr. (2003), "September 11, the Federal Reserve, and the Financial System," speech delivered at Vanderbilt University, Nashville, Tenn., February 5.

MR. SMALL. As a result of the terrorist attack, there were shockwaves through the financial markets. You talked about the plumbing. What is your view of how recent improvements to the plumbing helped displace risk and the contagion, and what changes to plumbing might there be? I can understand the backup, but do you think there are other types of risks that aren't being currently handled? What have you learned about the robustness of the plumbing system, what you had accomplished? And how did the plumbing you had meet your needs in dealing with that shock?

MR. ETTIN. I don't have an opinion that would be useful, other than make the observation that with all the destruction in New York to the switches and the computer systems—the financial system in New York was essentially down for a week, or at least the balance of that week—by early the next week, it was up and going on backup computers. Payments started to go through so that a backlog of overdrafts, I think, was gone within a week or 10 days. It was amazing how rapidly it adjusted.

The big lessons that we learned was the need for backup computer facilities and backup sites and how important that was. I think those rules and regulations are there now, and the banks are behaving accordingly, as I understand it. Our building was backed up. I think I've got nothing more to add to that.

Economists and the Payment System

MR. SMALL. Let's go back to your comment made a while back that, in the early 1970s, there were virtually no economists involved in the payment system.

MR. ETTIN. Right.

MR. SMALL. Think of a new Ph.D. student minted in that year going to his advisors. Almost none of them would have said, "This is a good, fertile area that is going to have a high demand in the future from policymakers." If you were minting Ph.D.'s, and they were to ask you, "What are the unknown, undervalued subspecialties within monetary and monetary plumbing that—"

MR. ETTIN. Now?

MR. SMALL. Yes, going forward. What are some areas might one specialize in that the market doesn't clearly see the future demands for? What do you think are some of the new innovative areas?

MR. ETTIN. I don't have an answer to that. I think I'm too out of touch with the frontiers of technology to answer that question. The only person I know that would have an insightful answer would be Pat Parkinson. Of course, he's not retired.

Asset Bubbles

MR. SMALL. There seems to be some overlap between monetary policy and asset bubbles and those types of imbalances. Is setting interest rates the appropriate tool to use, or is working on the plumbing the way to address asset bubbles?

MR. ETTIN. They gave a lot of thought to asset bubbles in the central bank. A lot of staff have written on it. Bernanke has got a nice paper on it that he wrote while he was a Governor. The Chairman has talked about it.[8] Don Kohn's also got a nice paper about it.[9] The problem obviously with asset bubbles is whether, to pierce the bubble, you have to destroy too much to get to the bubble. Is it better to leave the bubble alone, try to take steps before it develops, or try and take steps in the surrounding economy?

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[8] Editor's note: Ben S. Bernanke (2002), "Asset 'Bubbles' and Monetary Policy," speech delivered at the New York chapter of the National Association of Business Economists, New York, October 15.
[9] Editor's note: Donald L. Kohn (2006), "Monetary Policy and Asset Prices," speech delivered at "Monetary Policy: A Journey from Theory to Practice," a European Central Bank colloquium held in honor of Otmar Issing, held in Frankfort, Germany, March 16.

For example, what would it have taken to have eliminated the real estate bubble in housing markets in the last four or five years? If people really thought that housing prices were going to continue to go up, would it have taken a mortgage rate of 8 percent? Would it have taken a mortgage rate of 10 percent? Would it have taken a mortgage rate of 12 percent? How could you get the mortgage rate up that high without getting other long-term interest rates up that high? Given the way financial markets work and given the state of the economy, would you have wanted to cause a recession in the economy in order to prick the real estate bubble?

Take a stock market bubble like the one that occurred in the 1990s when you had the Dow Jones or the Standard & Poor's double or triple during a four- or five-year period. You say, "Jesus, those stock prices are too high." What do you do to get rid of that bubble? I think, again, the only evidence that is abundantly clear is that margin controls wouldn't have done much. Trying to control brokers' loans wouldn't have made much difference.

The Chairman [Greenspan] tried once. You remember the phrase "irrational exuberance" and what an impact that had? He decided he wasn't going to go along that line again. What would you have had to do? Could you have given speeches saying "If you buy stock now, you're nuts" and cause the stock market to decline, or would you have to slow down the economy? You say to yourself, "I'm slowing down the economy because pieces of paper are too expensive. And for that reason, I'm going to stop real capital from being formed and reduce consumption." It just doesn't make any sense. It's overkill.

It's like the 1937 recession, where the economy was still weak. The Federal Reserve was concerned about excess reserves, so it raised interest rates because it thought there was too much liquidity. Or like in 1929, when we raised interest rates because we were concerned about the stock market. In doing so, we contributed to the stock market crash and also weakened the real economy. That's not the cause of the Great Depression, but it's very clear what happened when we raised interest rates.

There isn't anything you can do about bubbles. And those people who say, "Oh my goodness, the Federal Reserve has let this bubble loose"—the only way the Fed could have stopped the bubble was to adopt policies that affect the real economy. That would cause not only a loss of output, but would cause the economy to operate at a lower level for an extended period of time.

That's not saying that bubbles are good, and that once a bubble gets started, we shouldn't be concerned about it. I think that what you do is try and create an environment where you can handle it when the market goes down and realize it's a problem and respond to the bubble when it occurs. As I said, Don Kohn has got a nice paper, and Ben Bernanke has got a nice paper on that.

MR. SMALL. One response to a potential bubble is to make sure the structure of the financial system is robust so it can handle that.

MR. ETTIN. Regardless, bubbles are irrelevant. One of the things that the central bank has learned is that it always has to be very careful—and increasingly so as the financial system becomes more complicated—of the underlying structure from payments to risk management to diversification. You want to impose rules on the businessman, but not by regulation. You want to make sure that he's doing the right kind of risk management, that he's doing stress testing, that there are backup lines, that he knows what his exposures are to customers, that he knows what happens if this customer can't pay. These are all things that the central bank should be doing or some authority should be doing.

Some might question that the central bank shouldn't be the one doing this regulation; that somebody else should. But making sure the infrastructure is right is one of the lessons we've learned and I think we're doing. Now, working on the infrastructure isn't something that turns an economist on just coming out of graduate school or maybe even in graduate school. I think some of the best minds in the Federal Reserve right now are working on infrastructure issues—again, people like Parkinson and White.

Reflections on Board Career

MR. SMALL. Going back to the beginning of our interview, if Dan Brill had talked to you about coming to the Federal Reserve for a year but said, "Let's work on the payment system and infrastructure," you would have stayed at Duke.

MR. ETTIN. Yes. I think your point is excellent.

MR. SMALL. And now you see it as fundamental and exciting.

MR. ETTIN. Fundamental to the job of central banking. But I think you've said something that I have never thought about before. If I can just expand on it, I think that—especially when we're recruiting at the best schools—if you bring people in for the purpose of working on the plumbing, you're not going to get them. The way you're going to get them is to let them learn here—on the job—about how this great financial system works and what the policy issues are or teach them here how interesting and critical the areas are. Then they will want to work on these issues.

By the way, on some of the plumbing issues, some of them don't really have to be the world's best economists. They have to know some economics, but they have to be willing to understand the institutional nature and how risk control and risk management works.

I think one of the biggest things we need to hire for—and I think there is more interest in it in the academic community now—is people who understand the risk-management tools. Some of these guys are coming out of the best economics departments as well.

My view throughout my career here has always been, let me hire somebody that's very smart and well trained as an economist, and I'll make the environment so interesting for him that I can get him to work on these other things too. I'm not sure I want the graduate schools to be teaching payment systems or how you control your risk exposure on a derivative, although that wouldn't hurt. I think we can train them here if we can make this subject interesting. And I think it is interesting.

MR. SMALL. This interview has been interesting and helpful.

MR. ETTIN. Good.