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.
Contents

Education and Work Background................................................................. 1
Nomination to the Board of Governors of the Federal Reserve System ............... 3
Terrorist Attacks on the United States on September 11, 2001 (9/11)....................... 5
Early Impressions as a New Fed Governor ..................................................... 8
The Board’s Involvement in Consumer Financial Services Regulation.................. 10
Payment Systems and Check Processing......................................................... 15
Governance within the Federal Reserve System .............................................. 18
Monetary Policy: General Impressions.......................................................... 20
Monetary Policy and Asset Bubbles................................................................. 22
Alternative Tools for Monetary Policy and Regulation........................................ 23
Inflation Targets............................................................................................. 25
Market Response to FOMC Statements and Data ............................................. 27
Communications between the Congress and the FOMC.................................... 28
NAIRU, or the Non-accelerating Inflation Rate of Unemployment....................... 28
The Fed’s Independence .............................................................................. 29
Decisionmaking at the Federal Reserve versus the Private Sector....................... 30
Impressions of FOMC Meetings...................................................................... 32
Education and Work Background

MS. FOX. First, could you tell us about your work before your appointment to the Board and how your appointment came about?

MS. BIES. Well, it’s interesting, thinking back on my career. When I was in graduate school to finish my Ph.D. in economics at Northwestern University, I was fortunate enough to get a fellowship at the Chicago Fed. So, early in my career, I was connected with the Fed family, and now, at the end of my career, I’m back with the Fed family.

What I loved about my first encounter with the Fed was that Chicago’s fellowship program allowed Ph.D. students to be actively engaged with the research department of the Federal Reserve System. I got a really good appreciation of the wide variety of activities that took place in a research function, and I had access to confidential data that I needed to finish my dissertation. It was a win–win for all. And, just as an anecdote, I was the first female to get a fellowship at the Chicago Fed.

MS. FOX. What was the topic of your dissertation?
MS. BIES. Bank markets: measuring competition and growth of local bank markets and defining bank markets. When I got here and had to deal with merger applications, in some of the close cases, I thought I could challenge the staff on some of the assumptions. I learned that bank markets have gotten a lot more fluid than they were back in the late 1970s when I was doing research.

When I graduated, I moved to the St. Louis Fed for a couple of years. While I was there, in 1970, an amendment to the Bank Holding Company Act was passed on the one-bank holding company. One of the major responsibilities I had at St. Louis was to find out who the one-bank holding companies were in the St. Louis Fed District. So, in a way, I got involved with supervision even though I was part of the research department back then.

Then I went on to two universities and ended up in commercial banking as an economist. When I became a commercial banker, it was the last leg in what I had laid out as my strategy for my career. I knew I could be an economist at a big university, a small university, in government, or in the private sector. So that was the fourth stop along the way. What I came to realize after a while is that I like to actually do things, not just advise people to do things. I was lucky enough to have a mentor in Ron Terry, the CEO (chief executive officer) at First Tennessee, who allowed me to move from the economist job to developing the first asset–liability management model to leading corporate development of bank acquisitions instead of reviewing them at the Fed. Then I went on to be the treasurer and the chief financial officer. Finally, the last five years I was there, I was the chief risk officer when we created that new function. So when I got to the Board, I had a great background in all these issues.
I got a call from the White House and was asked if I had some interest in becoming a Board member. I had gotten calls before, but they weren’t at a time in my career that I could look at leaving where I was.

Nomination to the Board of Governors of the Federal Reserve System

MS. FOX. It sometimes seems a mysterious process. But if you know how your name came to be circulated at the White House, could you tell us?

MS. BIES. My name came up in a couple of prior Administrations. I think it came from various sources. On the various occasions, including the last one, my name came from people who were known by the White House at the time. I know that leadership of various regulatory agencies, including the Fed, threw names in the general hopper for presidential appointees. Because I was so active in leadership in the American Bankers Association, BAI (Bank Administration Institute) work, and the Emerging Issues Taskforce of FASB (Financial Accounting Standards Board), [and] the SEC (Securities and Exchange Commission), many people knew who I was. My name was out there because I had been around for so long. I know this time it came from several sources, not just one.

MS. FOX. My understanding was that in the round in which you were ultimately chosen as a Board member, your name was recommended by Edward W. “Mike” Kelly, Jr., who was then a Governor here at the Federal Reserve. He knew you from your service in St. Louis and perhaps through other searches that had gone on in the Federal Reserve System.

MS. BIES. Yes. I had interacted with Mike and some of the Governors at the time as a banker, coming up here and meeting with them on various issues. As you know, Mike had been the leader for the Fed system on the Y2K (Year 2000) initiatives. I can remember having conversations with Mike, who also headed the Board’s Bank Affairs Committee, about emerging
issues and how organizations were looking at management accounting and customer information systems. As a banker who competed with the Fed for some priced services, I was encouraging him to adopt more private-sector management practices, because I thought it may help inform the level-playing-field issue.

MS. FOX. Tell us about the nomination and the appointment processes. Is there any particular moment or challenge that you remember in going through that gantlet?

MS. BIES. In March 2001, I got a call at home around breakfast time. It was a challenge for the folks in the Office of Personnel at the White House to convince me it was the White House calling. It took them a few minutes to convince me. I thought it was one of my friends pulling my leg and playing a joke.

President George W. Bush started later than normal in making appointments because of the disputed presidential election. So, in March 2001, the Administration still had a lot of appointments to make. When I came to Washington for my first interview, there were a lot of positions open. The first set of interviews was for them to get to know me, but also to get an idea of what I would like to consider as a potential appointment. We talked about several different areas. I said that if I come to Washington, I wanted to be at the Fed. My first choice was to be a member of the Board of Governors. Despite that, I interviewed with a few folks at some other departments. But the more I interviewed with some of them, the more I was convinced I wanted to be at the Fed, because I really value the quality of the work that’s done here and the ability to think about public policy from the broadest sense, not just talking about it from the point of view of the message the White House wants to send. Since I was going to work on policy, I wanted to work on it in the most independent way and with the best quality staff possible.
MR. SKIDMORE. When you got the call from White House personnel, why didn’t you believe it was the White House?

MS. BIES. I don’t get calls from the White House. That was the first one I’d ever gotten. I have a lot of good friends, and we play practical jokes on each other from time to time. And as friends tend to do, we pull each other’s leg on some things.

MR. SKIDMORE. How did they convince you that it was actually the White House and not somebody recruited by one of your friends?

MS. BIES. We just kept talking, and I kept probing. The more we talked, the more I came to realize that Clay Johnson was really Clay Johnson (the White House personnel director).

MR. SKIDMORE. Did Clay or the people on the other end of the line ever realize that you weren’t quite convinced?

MS. BIES. Oh, yes. Clay and I still joke about what it took for him to convince me he was who he said he was.

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

MS. FOX. Where were you on September 11, 2001, the day of the terrorist attacks in New York City and Washington, D.C.?

MS. BIES. I was in an airplane flying to Washington to make some courtesy visits to members of the Senate Banking Committee ahead of my confirmation hearing. We got the message the plane was being diverted to Cincinnati. The first reaction of all of us on the plane was, “What’s going on?” It was a beautiful day outside. We figured it couldn’t be the weather.

We landed in Cincinnati. Initially there still was not much communication. We saw all these people in the airport. Finally, by watching the TV monitors, we learned what was going on because the airport and the airlines weren’t prepared to tell us.
I called my bank. That’s when I realized what had happened in New York that day and in Washington. The airlines were trying to decide whether they could fly again. And, as you know, as the day went on, it became clearer and clearer that the planes weren’t going to fly again.

Then the issue was, how do I get back to Memphis? You couldn’t get a rental car. People weren’t turning them in because they couldn’t fly out. I was on waiting lists for several places to rent a car. For the same reason, getting a hotel room was a challenge because people couldn’t leave town. So I had the logistics to deal with [and] wondering, what am I going to do?

At that time, I headed First Tennessee’s Asset Liability Management Committee. I was a chief risk officer. We were talking a lot during the day about what this meant for my bank. First Tennessee had a large check-clearing operation and was a large broker-dealer for a bank of its size. It was about the 45th largest bank in the country and the 5th largest check clearer.

With planes being grounded, we weren’t able to clear checks, so the float on our books was rising and presenting a risk to the bank. One of the challenges we had was to figure out what was clearing and what wasn’t clearing so we would know what funding we needed by the end of the business day. Normally, you do your funding by 1:00, 2:00 in the afternoon. We also did a lot of broker-dealer activity around U.S. agency securities, Treasury securities, and so on. Because of what happened in New York, we didn’t know exactly where our positions were. There were a lot of things we didn’t know. As a banker, you worry about the risk position. That day we had no data to feed into our risk models. So I was talking to the folks back in Memphis about where we were and what were we going to do.

I’ve got to say, as a banker, the Federal Reserve System did exactly the right thing. Roger W. Ferguson, Jr., clearly made the right decisions. And the Fed staff clearly understood
the issues banks were facing. We got word very early that, since we were a well-run bank, the Fed was willing to say, “Go to the discount window for whatever credit you need.” We said, “We don’t know if we can provide collateral or anything.” They understood and made it clear that the window was open. That was critical to us in order to keep the bank operating effectively that day and for the next several days. Until clearing systems got up and running, we really didn’t know where we stood on a lot of these issues. If the Fed hadn’t acted promptly, I think you would have seen the banking system seize up. That would have had a ripple effect on companies’ cash-management activities through banks and through financial markets. Markets were closed for a while, so providing liquidity was vital to keeping the banks moving. It let all of us say, “Oh, good. The Fed will give us the funding. We can focus on the operating issues, because we don’t have to worry about liquidity.” The way the Fed handled that whole situation, I think, is a landmark in how a central bank should respond in a moment of crisis and support the financial industry and the economy. I think the Fed did a superb job.

MS. FOX. As a banker, had you and your colleagues prepared in some way for the day that you wouldn’t have access to data? Were there procedures in place?

MS. BIES. The blessing of 9/11 was that it happened so close to Y2K. Most of our core scenarios for Y2K were based on the inability to get data if all systems crashed. We were able to pull our Y2K plan off the shelf and use that as a response. We even had plans for scenarios where planes wouldn’t fly. The blessing was that they were so close together and the scenarios could so easily fit the day.

Before Y2K, I think most of us, in our business recovery plans, focused on fires or, in the case of Memphis, earthquakes. Before that you didn’t focus so much on a massive computer
shutdown beyond your own organization. But it was fresh in everybody’s mind. Everybody knew what to do, from the funding desk to the back office. Everybody knew what their role was.

**Early Impressions as a New Fed Governor**

MS. FOX. Looking back, could you share with us some of your thoughts about your early service at the Board?

MS. BIES. I knew a lot of the people at the Fed, at least at the senior levels. But one of the things that struck me, going through the confirmation process, was the range of activities that the Fed gets involved in, particularly policy issues, that I hadn’t touched in the 25 years that I was at a bank. For example, starting with the briefings I had from the Board staff prior to my confirmation hearings, I realized how much the field of economics had moved since I’d been a full-time economics professor. I can remember one of the early staff briefings. People were talking about something called the Taylor rule. I had no idea what that was, because that was developed in the early 1990s, roughly 20 years after I stopped being involved in that kind of research. So one of the things I looked forward to when I took the Fed position was getting back to my roots as a Ph.D. economist.

The briefing books were great, but, more importantly, the Fed staff had the patience to get me up-to-date on all of the relevant research and the new fields, like behavioral economics, which wasn’t even invented back then. Through my service here, the research staff has been invaluable, helping me take what I knew as a CFO (chief financial officer) on things like corporate cash flow—which, at the aggregate level, has been at record levels while I’ve been here—and linking it to what it means for monetary policy and financial markets.

The other major impression is how good the public policy decision process is at the Board. We have a discipline around here—which is really through culture, more than anything
else—that rewards people to be open in how they think about policy issues. Staff members, in their entire dialogue with Governors, feel free to say in a tactful manner, “Well, Governor have you thought about this aspect of it?” or they would discuss the unintended consequence of a decision.

The analysis that we do can’t be compared with that at any other agency that I’m aware of or have worked with in Washington. There is a depth of knowledge on so many areas that affect financial institutions, consumer behavior, monetary policy, and financial stability. Nobody else has got it. What’s valuable to us is that, when we look at an issue, we can pull staff members together from different divisions who are used to looking at their area and get an interaction going so you can look at an issue from multiple viewpoints. Often, other organizations here in Washington tend to focus myopically on their one narrow perspective. I think that really adds value to our decisionmaking process and how we come up with policy recommendations. I think that’s what I’m going to miss the most.

Mark Olson and I got sworn in on the same day—December 7, 2001. I can remember when we went to our first Board meeting. It was the day before an FOMC meeting. At Board meetings, the briefings by [the] staff—and all those Ph.D. economists in the room who made presentations—were wonderful. Then we always had the opportunity to ask questions. Someone would stand up in the room who was an expert in anything that you could ask! It was a resource that Mark and I—particularly as bankers who never had the luxury of such talent in our own organizations—were blown away by. It’s something that, over the years, we both have said is a real sign of the quality of the people that we have here at the Board.
The Board’s Involvement in Consumer Financial Services Regulation

MR. SKIDMORE. In the field of consumer protection, how have the changes in banking and the changes in the way banks do business affected the way the Fed protects consumers?

MS. BIES. I have gotten a deeper understanding of the consumer area since I’ve come to the Board. As a banker, I thought about consumer issues from the point of view of doing what it took to keep our customers happy. I looked at consumer compliance issues as a regulation burden, which didn’t add a whole lot of benefit to me as a banker, because it was done for the sake of compliance and not part of what we managed day to day. But since I’ve been here, I’ve become more aware of some broader issues.

When you look at the broad consumer issues, the 1990s were remarkable in how much more credit became available to more consumers. Consumers now have the ability to go to many more organizations to meet their credit needs, not just those within the banking sector.

While bankers are serving what used to be unserved populations, a lot of independent folks—payday lenders, finance companies, and mortgage brokers—are getting involved in consumer lending. The good news is that credit is plentiful. And as we look at homeownership, we have seen it go from about 64 percent to about 69 percent of the households. That is a major increase in the last 10 years. And we don’t hear about the issue of redlining that we heard about years ago, where people would say, “I can’t get a loan because of where I live.” That has diminished.

Now, with all the variety out there, it’s easier for consumers to find a product that meets their needs. But the products themselves, because there’s such a great variety, have a lot of bells and whistles that are confusing for the typical consumer to understand.
I’m struck by some of the comments we heard last summer when we had HOEPA [Home Ownership and Equity Protection Act] hearings across the country. We had four of those in different cities. Consumers were saying, “I didn’t understand that the mortgage I took out would have a jump in the payments in the third year. I just thought I had a 1½ percent interest rate.” They didn’t realize that, in three months, for example, it could go up to a market rate for their credit. Their payments would end up doubling or potentially tripling if they had interest-only payment products.

Credit is more available, but it has become available to consumers who don’t have as much financial understanding. Maybe they have not gotten used to managing credit. Perhaps their parents didn’t have access to credit, so they didn’t learn from their parents about it.

But I think the industry is also making this more complex. Credit cards, mortgage loans, and auto loans are sold with teaser terms. For example, the automakers were giving 0 percent interest rate auto loans. The average consumer doesn’t think that, “Probably I’m paying for this low rate in the price of the car. What would the price be if I didn’t get a 0 percent loan?” And they don’t compare that offer by saying, “Give me a car with a discounted price without the financing,” and then shopping separately for the financing. People don’t focus on that. For credit cards, when people are given a teaser rate to transfer balances to another credit card company, they say, “Boy! A 1½ percent or 3.9 percent APR (annual percentage rate).” They don’t read that, in 6 months or 12 months, the rate will go up substantially.

We have similar issues about the way loans are packaged to consumers. Lenders sell the financing rate, but, more and more, the compensation that they take is in the form of fees, whether it’s closing fees, late-payment fees, over-line fees, or prepayment fees. All of these are
event-driven fees. The challenge we have is, how do you describe an event-driven fee to a consumer?

Recently, the U.S. Department of Defense became a financial regulator when the Congress passed a defense bill and attached something called the Talent Amendment. The Talent Amendment authorized the Defense Department to write rules to target payday lenders, but the amendment has broader implications. The Truth in Lending Act and the Fed’s implementing regulation, Regulation Z, define an APR (annual percentage rate) one way. The Talent Amendment defines the APR differently; it includes all fees imposed, not just finance charges, for an effective APR. The research that we were doing shows a lot of consumers have no idea what an APR is. They can’t relate to interest rates. When consumers think about it, whether you tell them the interest rate is 12 percent or you say it’s 360 percent, they don’t understand. But if you tell them it’s going to cost you $10 to borrow $100 for two weeks, that’s easier for them to understand.

How do you describe complex products to consumers? How do they shop among all the vendors and all the product types? It puts more of a burden on consumers to understand, but it also puts a burden on lenders and all of us as regulators to say, “What are the principles for best-practice disclosure that make it easier for consumers to understand?” Good disclosures can help lending institutions build consumer value if disclosures are made in an effective way. I think the direction we are moving in may provide more synergy where consumer disclosure regulation is not a compliance exercise—it’s a way to attract and build a customer relationship. Maybe, down the road, the financial industry and regulators can continue to move closer together, because I think our objectives are going to end up being similar.
MR. SMALL. As you just mentioned, consumer credit is becoming more complex. Do you think there’s something special that requires more oversight or regulation, or should we treat consumer credit like purchasing electronics: “Let the buyer beware”?

MS. BIES. I think right now there is a reason to differentiate financial services. It’s the way the industry is evolving. For example, when I leave the Board and I have to set up my own computer system for the first time at home, I’m going to hire a Geek Squad person, probably, to come in and help me set that up. I know when I hire that person, if the company wants repeat business, it is going to make sure I’m happy.

When you look at the way lenders provide incentives to customer service versus sales representatives today, you don’t have the relationship, because lenders tend now to be compensated for closing a transaction. If they don’t make a new loan or open a new account, they don’t get compensated. The lender is not really acting for the consumer any more. They’re acting in their own interest.

If you think of some of the abusive lending practices we’ve seen in subprime mortgage lending recently, I think one of the reasons we’ve seen them grow in the last two to three years is that the volume of mortgage originations has decreased in the prime mortgage markets. The people in the subprime market who could get good credit on relatively better terms had already gotten it. The people whose commission checks were disappearing wanted to find a way to make new commissions. So we saw more products, like 2/28 mortgages, where no proof of income was required. This kind of risk-layering allowed more products to be created in order to get a commission for the lender.

As soon as a loan is made, that loan is pooled into securities and sold to investors. The servicing is sold to whichever organization is going to take care of collecting payments from the
consumer and taking tax and insurance out of escrow. If consumers have problems with their mortgages, they are stuck dealing with somebody they didn’t choose. The loan servicer was chosen by whoever packaged and sold that mortgage. The consumer can’t pick the servicer. The servicer really doesn’t have a relationship with the consumer. On the other hand, the broker says, “I made this guy a loan six months ago. I ought to see if he’s happy with it. The loan is about to have a shock payment. I can tell him I can get him out of the shock payment by refinancing. I’ll flip him. I’ll get another fee out of him. And I get another commission check.”

When you have transaction-driven vendors of financial services, you don’t have the kind of long-term relationship built traditionally in banking—where the loan was put in the portfolio, and if you were sick and couldn’t work for three months, you told your banker. Because the banker wanted a long-term relationship with you, the banker worked through the payment issue during that period of time until you got back on your feet and back at work. For a servicer holding that mortgage, since it has a fixed revenue stream, their way to increase profitability is to reduce the cost of working out a delinquent account. There is no incentive to work for the customer any more.

The segmented and transaction-compensated nature of the business is changing the relationship between borrowers and lenders. We shouldn’t be heavy handed and stop innovation. I think we need to make sure that consumers have full information to make the best judgment about organizations.

If banks have good enterprise-wide compliance systems, they detect where their compensation systems can create reputational or other kinds of risk so they can modify those incentive-compensation initiatives. How to strike that balance in a risk-management framework
needs to be brought up. It’s one of the reasons that enterprise-wide risk management and compliance management is so important for organizations as they move to incentive programs.

**Payment Systems and Check Processing**

MS. FOX. You have seen dramatic changes in the business of the Fed as check volumes have declined and electronic payments have accelerated. Could you talk about your experience?

MS. BIES. I came from First Tennessee, which was the fifth biggest check clearer in the country at the time I joined the Board. We saw the Fed as our number one competitor. When I got here, the leadership at the Reserve Banks and at the Board had already begun to focus on the fact that checks were declining. They weren’t growing any more. What is our long-run role in this? The Monetary Control Act of 1980 mandates that the Fed cover its costs in any priced service over the long run.1 Under the law, the Fed couldn’t use its government position and operate at a loss when competing with the private sector. We weren’t covering our cost when I arrived, so the Board and Reserve Banks were actively engaged in dialogue about what to do.

As a new Governor, I wanted to visit a lot of the Reserve Banks for various reasons—getting to know people and getting a chance to observe what was going on in different parts of the Fed system. When I went to visit, one of the things I asked was, “Can I see your check-processing operations?” A lot of them would start by apologizing and say, “If you want to do that, you’ve got to show up in the middle of the night.” Check-processing shops run at night. Banks batch-load all their checks at the end of the business day and ship them out. Everything gets processed at night, and the cash letters go out so they can be received early in the morning by the banks. I said, “Well, I understand that.” I spent many a night at our check shop in

---

1 See Section 11A of the Depository Institutions Deregulation and Monetary Control Act of 1980. The main driver behind the Federal Reserve System not covering its costs at this time was associated with its check-clearing service.
Memphis, which was right next to the FedEx hub. That’s how we used to get our checks in and out.

I remember my early visits to some of these check shops. I would ask the managers of the check operations things like, “How many endpoints do you have?” or, “Tell me how you work on your reader-sorter patterns. What issues are you seeing right now?” People’s eyes would open, because they’d never had a Governor who knew about check processing. I would ask some of the folks who ran the Retail Product Office, and some of the folks who were on the sales side in the Reserve Banks, “What is your target for float-pricing in the profitability of your customer relationship?” Again, eyes would open.

I found that, through the System, we had uneven practices. When I arrived, we still had the Reserve Banks operating check-clearing on a District-by-District basis. Some Districts allowed different offices to do different things. For example, a District could have three or four check-processing centers. At one, they could be running an IBM shop, and at another, a Unisys shop. So you had two different types of hardware that would require two different types of software. Or, even if you used all IBM, they may have different software running at those different places. So every time you had to update software, you had to do multiple upgrades. And we had 45 check-processing centers.

The private sector had consolidated check operations in the late 1980s. What drove the private sector to do this? Everybody grew check processing in the early 1980s, when interest rates were high, when Chairman Volcker and the Board were trying to kill inflation. Fed funds rates were at double-digit levels. Through the 1980s, as inflation and interest rates came down, the value of the positive float was such that you weren’t earning as much. With that revenue squeeze, commercial banks had to deal with cost pressures. They began consolidating check
centers, standardizing hardware and software, and changing aggressively the way the cash letters were processed when they came in.

When I first arrived here, the Fed had a project called Check Standardization. It involved all the Reserve Banks agreeing on one hardware vendor and one software vendor, with the commitment that everybody would use the same version of the software. That was a major conversion effort across the System. We needed to do that before we could start the consolidation. Consolidation in itself has risks of conversion. If you start on different platforms, it makes that risk even greater.

The challenges for the Fed were in our governance process for managing these things. Check processing has always been led by the Reserve Banks, with the Board providing oversight and encouragement to move in certain directions. The Reserve Banks, the presidents, and the first vice presidents have done a great job over the years in focusing on issues. But here you had a challenge of who was going to make the decisions on the hardware and software. Which check centers were going to be closed? Everyone clearly understood that you couldn’t do it within a District, because you had to map out across the country where these check centers should be. Given the flow of checks, where is the locational advantage the greatest? There was a lot of debate going on. “My check-processing center is more efficient, so why are you closing it down?” Yet it could be in a location that was remote and wouldn’t be a good consolidation place because of the logistics of moving checks in and out of that location.

This was at a time when—as we pushed through this and tried to get other costs out of priced services to meet the Monetary Control Act—the broader issue of how we work together across Reserve Banks got more attention. For example, we moved toward having one place to process all the employee benefits. We created the Office of Employee Benefits not only for the
Board, but the 12 Reserve Banks instead of having people in all 13 areas do their own thing on employee benefits—and getting the synergies of that. In a shared-services model, how does that work in a Reserve Bank, where you have independent boards of directors, separate legal charters? How do you agree to have one place be the service provider?

This involved a tremendous effort by the Conference of Presidents and the Conference of Chairmen of the Board of Directors of the Reserve Banks to sit down and review our governance through the System. How do we make decisions and try to do that within the legal framework? No one wanted to go to the Hill and ask for the Federal Reserve Act to be opened because of the potential for unintended consequences. If you’re going to open the Federal Reserve Act, while you’re there, what else do you want to change? While a lot of dialogue and earnest debate went on, we came through that. Nowadays, not only are we thinking about how to work effectively across the System in check, we’re doing the same thing for currency processing, we’re doing the same thing in the shared-service work, employee benefits, and other areas.

[The] FRIT (Federal Reserve Information Technology) was here when I got here, but a lot of the distributed processing and information security needed to be centralized. It’s a tremendous governance challenge. Now we have independence of the Reserve Banks to some extent, but we’ve built the governance processes to get everybody engaged in doing what’s best for the System as a whole. I’ve seen a tremendous change in the type of discussions we have about these issues.

**Governance within the Federal Reserve System**

MS. FOX. What was the governance solution? Is there now a czar of consolidation? Who makes the decision within the new structure?
MS. BIES. This still is a consensus-driven system, where all of the Reserve Banks have to reach a consensus through the Conference of Presidents or the Conference of First VPs, depending on the issue. The imperative is clear that we have to reach a consensus. The ability of one organization to say “I don’t care—I’m going to do my own thing” isn’t in the culture the way it was when I first arrived. The fact that the Fed has such pride in the System, I think, is getting us to the right answers.

On the other hand, we’ve created special product offices. We have a Retail Payments Office, a Wholesale Payments Office, and a Cash Office. We’re saying, “People who head this have to be leaders of the System.” Different Reserve Banks have bid for the leadership role on these projects. Officers of their Reserve Banks then look at the strategy and the implementation of these shared services. I think every Reserve Bank has its niche. It provides a healthy check and balance to make sure that we meet the letter and the spirit of the service agreements across the Reserve Banks.

MS. FOX. And, at the same time, retain the benefit of this District presence that’s a historical part of that Reserve system.

MS. BIES. Right. And that we all view as important. In the BAC (the Board’s Bank Affairs Committee), there has been more dialogue about the different nature of the services in the Reserve Banks. You have one extreme, where check tends to be driven by the Reserve Banks with oversight at the Board, to research, which we feel should be the unique view of each Reserve Bank. The focus is on the quality of the work done, not the particular monetary policy philosophy that each Reserve Bank may have. They have flexibility to create their own niche. The other extreme is something like bank supervision and regulation, where the Board has legal responsibility. We delegate the supervision to the Reserve Banks. So the Board provides
oversight in a more direct way in bank supervision. I think we’re seeing more of a distinction nowadays in how we interact.

**Monetary Policy: General Impressions**

MR. SMALL. During your tenure, the FOMC faced the prospect of economic damage related to the 9/11 attacks. Then, with the federal funds rate coming close to 0, 1 percent, you had the problem of bringing interest rates back to what was called the “neutral position.” After that was achieved, you had the challenge of assisting in economic growth but without a pickup in inflation. Can you tell us about some of the key moments, lessons, or memories you have of the FOMC policymaking process during that period?

MS. BIES. I found it interesting from the point of view of how you think about monetary policy when you have non-economic events that disrupt the economy, like a 9/11, or later on when Hurricane Katrina hit us. The challenge of setting monetary policy—because it acts with such a lag and is such a broad instrument—is to keep a solid economic foundation and keep monetary policy sound so that the economy can respond as best as possible to non-economic interruptions. I think it helps to remind us of a core mission that we have to accomplish here.

I always felt our main job was fighting inflation. I had been in commercial banking from 1979 on. That’s right when Chairman Volcker and the Fed decided to clamp down on inflation. Most of my time as a banker has been during a period where I was seeing a secular decline in inflation—from double-digit rates to the mid-1990s where inflation became more stable, around 2 percent.

When I arrived here in late 2001 and then in 2002, inflation was getting weaker and weaker, getting to 1 percent and below. Seeing what Japan had gone through, in not being able to deal effectively with the problem of deflation, and the decades-long impact that had on the
Japanese economy, I looked at the work that the Board staff did, the Governors’ views, and the Reserve Bank research on policy alternatives you have as a central bank to deal with the risk of deflation—because that zero limit is really there, and it’s a real limit.

Thinking of it as a banker, though, I also began to worry about the implications in the financial markets. What if we had to push the federal funds rate down below the cost of running a money market fund so the assets in a money market fund wouldn’t cover operating costs? The impact on the financial system of a sustained low interest rate environment also got me thinking about what the broader economic implications could be. A deflationary risk was something that I hadn’t focused on before I came to the Board. That was new to me.

The other thing was when we finally made the turn from easing to beginning to tighten again. We started to raise rates above 1 percent. The markets can be rocky when you start to signal you’re about to turn and then you actually make the first increase in rates. I particularly remember the volatility created in the Treasury markets around hedging activities for mortgage-backed securities, mortgages, and mortgage-servicing rights, because cash hedges were tied, in many ways, to the 10-year Treasury. It was the benchmark that people use for hedging. It raised some of the real concerns about liquidity risk when the whole market wants to go in the same direction at the same time. Who’s willing to take the other side of the trade? So while most of the time you’re trying to use derivatives or cash markets to hedge effectively, you have people with different interests—you can strike a good balance. But I can remember how much the volatility in that period struck me.

Thinking forward now, I worry much more, as a regulator, about the problems of crowded trades and liquidity. That’s part of the reason, for example, for the new market-risk
capital rules that we’ve got out for comment. We want people to look at the risk of the illiquid positions in a very different way. That’s another tie-in or lesson that I hadn’t thought about.

**Monetary Policy and Asset Bubbles**

MS. BIES. There is also the debate about whether monetary policy should look at asset prices and the problem of asset bubbles. I had never heard of asset bubbles from a monetary policy perspective until I got to the Fed. As a lender, I had always worried about overpriced markets and the risk when they collapsed. When you’re lending, you worry that the collateral is overvalued, and when you need to go to the collateral to cover your losses may be when the collateral is losing its value.

I didn’t think about it for monetary policy. Through the period I’ve been here where we had low interest rates, we saw tremendous amounts of financing in the real estate markets, whether in commercial real estate or residential real estate. There are implications if terms used to fund projects don’t reflect the long-term risk. So you worry whether the capitalization rates used to underwrite commercial real estate are too low to cover the risks in a long-term commercial real estate project.

I think there are strong arguments on both sides of the debate about whether we should look at asset prices or not look at asset prices. I found that I couldn’t fail to consider asset prices when I thought about monetary policy, just because of the longer-term implications for how financial markets operate around asset bubbles.

I wish I was hanging around longer so I could have more time to ponder how you wed these issues of how markets at times price assets incorrectly, and how cheap financing creates so much liquidity flowing into these asset classes that you can get inflationary spikes in the prices
of those particular assets. It is an interesting dialogue, reading in the economic literature, the different perspectives on asset bubbles.

**Alternative Tools for Monetary Policy and Regulation**

MR. SMALL. This raises the questions of objectives and tools. If you think of only having the interest rate tool and multiple objectives—inflation, growth, financial stability—you are really constrained. But there may well be other tools on the regulatory front. What do you think of as the tools, broadly speaking, across all aspects of the Fed’s monetary policy and regulation?

MS. BIES. I think it’s a great point. I believe that the central bank should have a key hand in regulation of the large financial institutions in the economy in which it’s operating. Think about the issues like the asset bubbles, or right now where we’re focusing on the jump in subprime delinquencies. Will that transmit itself to the broader mortgage market and, thereby, more to housing and the broader economy? Having a hands-on ability to know what is going on in financial institutions—being able to actually get into those organizations, looking at the underwriting models and at what is happening to the vintages of different types of mortgages on delinquencies, and seeing what’s happening to appraisals that are happening in real time—is an important additional source of information that can help guide monetary policy. It may give us a better indication of what really is confronting the lenders. To me, that is one of the key monetary transmission mechanisms that we have.

One of the challenges, though, even being the central bank, is that so much of the financial market liquidity of various forms is now circulating outside of the commercial banking sector. For transaction and settlement purposes, we see it pass through the banking sector, but we don’t get a day-to-day, hands-on snapshot by going in and looking at what’s going on in a
trading desk at a bank or looking at underwriting of particular credits that a bank may have on a
given day. We can’t see inside of a hedge fund. We can’t see inside some of the activities that
are going on when people are, say, buying commodities. In many ways now, commodities are
becoming asset classes of their own. Oil has been a good example. Depending on the slope of
the yield curve, people are buying oil to invest in as a separate asset class. We don’t have as
much transparency to see what’s happening in those markets.

That’s one of the evolutions in how the mechanisms of monetary policy are changing that
make me wish that the Fed had consolidated oversight of more of the players in the financial
market, at least the big ones, so we could see more of what’s going on day to day. It would
inform us more about how the mechanisms are changing and give us more real-time information
about how credit conditions and availability are changing in the real economy to complement
what we’re seeing from the traditional economic indicators that we get to monitor.

MR. SMALL. Regarding the ability to see real-time across parts of the financial
industry, people might think of [the] Board staff or Governors having all this tremendous
information and seeing everything. Are there instances when you remember being frustrated that
you didn’t have the information—that you couldn’t see—

MS. BIES. Couldn’t see or, even if you had information, didn’t understand. One of the
things I remember clearly—being an old chief financial officer—was, for a couple years, we
weren’t seeing a lot of business investment. We kept thinking, why isn’t business investment
picking up, especially since the recession we had just gone through was unique in that it was a
business investment recession, not a consumer-led recession? I was expecting that meant we
were going to see business investment picking up, and it wasn’t. This was a time when
corporations had record levels of free cash flow. Their balance sheets were strong. They had a
lot of liquid assets sitting on their balance sheets. Even though we knew that was the fact, you question why corporations would sit on that much cash. How could they possibly get a return on capital through the use of cash?

Some of it, we thought, was—hearing anecdotal stories—that Sarbanes-Oxley had made executive management and boards of directors so internally focused on controls that they weren’t focused on where to deploy investment for the future, so they were short-term focused. I called around to some nonfinancial CFOs and controllers that I knew. What I was hearing from them was, “With the environment we are in, we want the cash, because we want the ability to buy in our stock.” This was still when employee stock options were big, so it was a way to offset the dilution effect of issuing stock options. We have seen a lot of outstanding shares of equity retired in the last few years. Sometimes even if you see the data, it is difficult to understand why people are behaving that way. Intuition would tell you it doesn’t make sense to sit on record levels of cash in an environment of very strong balance sheets. You would think it would start to go the other way.

**Inflation Targets**

MR. SMALL. What are your views on an inflation target?

MS. BIES. I’ve been one of the folks on the FOMC who has been open minded about inflation targeting. I understand, from an objective of clearer communication, laying out a range would be useful. On the other hand, I want to make sure that our hands aren’t tied.

When I think about it, if we were going to set a target, what would that target be? How would we specify it? Different central banks have chosen to go that way and have chosen different ways to get there. Do we put out something that says we want inflation to be no greater than or close to 2 percent, as one central bank has done? Do we give a range of inflation?
What if we don’t hit that inflation? If you look at inflation in the United States in the last couple of years, we’ve been over 2 percent. The forecast we just did in the *Monetary Policy Report to the Congress* showed that we expected it to be over 2 percent in 2007 into 2008. Does that imply that we’re comfortable with inflation being in the mid to low 2 percent [range] for four years running? What does that imply about our inflation target? If we had said we don’t want to go over 2, would we be right now raising interest rates much more dramatically?

There are a lot of issues, not only in targeting. What would our response be if we don’t hit those targets? As we know, productivity has been slipping in 2006. As productivity slows down, that has real implications for the rate of inflation and how we would target it, because a lower rate of productivity means that the economy as a whole can’t have as much nominal growth in wages and other things without creating some real inflation pressures. Would you adjust the inflation target over time to respond to different drivers of what a “neutral rate” would be if we could measure that?

I see pros and cons of doing both. Again, it may be my nature coming out of the private sector, but one of the things I know is that whenever you publicly say you have a goal, you’ve got to meet that goal. You lose a tremendous amount of credibility if you don’t successfully meet that goal.

So I worry about being too precise in an environment where we’re not always going to take the steps to hit that target in a quick enough time frame, which I think would need to be less than four years. Is that really something that we would be willing to trade off, in terms of the credibility of the Federal Reserve? I am sad that I’m going to miss this continuing dialogue in the FOMC now that I’m leaving, because I think there are some intriguing issues here. I think it is a tradeoff. There are some pluses and minuses in this whole discussion that’s going on.
Market Response to FOMC Statements and Data

MR. SMALL. The FOMC has been becoming incrementally more explicit in its statements about [the] balance of risks to inflation. One way to gauge the Committee’s credibility is to look not only to the statements, but to the market response and to inflation data as it comes out. How do you read market responses to Fed statements and inflation data? What do you think they say about the Fed’s credibility with the market?

MS. BIES. The market is a good sounding board for us. When new data come out, if we have communicated well about how we conduct policy and what our view is for the near-term and mid-term outlook, we would expect the markets to respond the way we, as Governors, would respond to that incoming information. Whenever we see a divergence there, it should be a signal: Either the market is reading the information differently, or there’s a credibility issue for what our perspective is to the market. They are good sounding boards.

On the other hand, I worry that the market can get complacent and just listen to what we say, not looking at real-time data and not independently doing their own forward look. When you look at the inflation forecasts by fed funds futures and other things the last few years, they haven’t been terribly accurate. And so the question is, are they listening to the Fed, or are they missing their own forecast of what’s going forward and how the Fed is going to respond? It is an interesting question, because I think it’s important that the markets have their own accountability for doing their own forecast. They can’t get lazy. When they’re too myopic—whether it’s where interest rates are going, where credit spreads are going—I do think that there’s a risk that the financial markets misprice the future opportunity costs of different decisions in the economy. That’s one of the things going back to the prior discussion about targeting—does that say to the
private sector, I don’t need to worry about inflation and so I’m not going to take that as a risk factor when I make my business decisions and investment decisions going forward?

**Communications between the Congress and the FOMC**

MR. SMALL. The FOMC also communicates to the Congress. On macroeconomic policy, does the Committee accurately convey its objectives to the Congress?

MS. BIES. Generally, the communication is good. Where there sometimes appears to be differences is with members of the Congress who feel the other parts of our mandate—encouraging growth and employment—have a higher priority than fighting inflation.

Going back to the comment I just made about the markets having to own their own forecast, we need to continue to communicate that, in an environment where inflation is contained within a range, the markets can expect that within that range they can make business decisions that will support investment, which will encourage economic growth and employment growth down the road. If we totally lost control of where inflation was going and it became volatile, then that adds another risk factor. And the uncertainty would increase the cost of capital for businesses to invest. It would drive up the term premium in term debt markets, which would make it more expensive to raise capital. So I think we need to explain how, by focusing on inflation, we support employment growth in the long run. That is something that we need to keep focusing on.

**NAIRU, or the Non-accelerating Inflation Rate of Unemployment**

MS. BIES. Coming back to the Fed, I was struck with all the discussion of NAIRU (non-accelerating inflation rate of unemployment), which is something I hadn’t thought about in the private sector. It’s been interesting in the last year now. We’re hearing from the private sector that they’re not able to find enough skilled workers. It makes me wonder what we mean by
NAIRU and the tradeoff between inflation and employment, which I think is what the Congress has got in mind—the old Phillips curve notion. It isn’t that we don’t have enough people out there.

The issue involves skills and what are we doing to retrain obsolete skills of people who have working lives that last 40 to 50 years nowadays. How do we keep them current? There are ways to make that happen. I also know when my generation—the baby boomers—retire, we’re not going to die within a year or two the way most of our parents and grandparents did. We’re going to live for 20 some years. Most of us are going to be healthy and are going to want to do something part time. We might be able to pull potential labor force increases from the retiree group way above historic levels. So it’s hard for me to figure out what the labor constraint is.

We could offshore a lot of labor, because education levels are growing globally and the cost of labor for standardized skills is growing. So it isn’t clear how the old Phillips curve employment–inflation tradeoff works in the world that we’re in today. Unemployment rates have been in the mid 4 percent ranges for a long time, and skill shortages are apparent in various sectors. Is NAIRU a workable concept for us as a central bank? The research staff has been looking at labor force participation. I hope we do more on skill gaps. It is important to go back and examine the old Phillips curve tradeoff, which is implicit in the mandate the Fed has of inflation and employment growth. It’s something we’re going to have to look at in a different way as we move forward.

The Fed’s Independence

MR. SMALL. Do you think the Federal Reserve currently is well positioned as an independent entity?
MS. BIES. I think the Fed is. Even on the Hill, generally, the Fed is widely respected, although there may be members of the Congress who question the Fed’s perspective from time to time.

The quality of the research, the way we make decisions, the imperative to make the best decision based on what’s good for the economy as a whole and not in a partisan way politically keeps us above the fray. It is part of the culture of the Fed and one of the strengths of the Federal Reserve System that I hope will always be preserved. The quality and care in which analysis is done here has struck me. People don’t go off and take a position to take a position. It’s done with well-founded considerations.

We may come up with a hypothesis or question about, why is this going on? Then we dig into it and see if we can determine why it is going on, whether it’s some of the research that folks have done here over the years on productivity or now on the labor force participation rate or look at the Reserve Banks that have come up with different measures of inflation. It’s healthy to want to understand as much as we can about the key indicators that provide the framework of goals that we’re trying to achieve through monetary policy.

**Decisionmaking at the Federal Reserve versus the Private Sector**

MR. SMALL. Would you discuss the decisionmaking in the Federal Reserve and contrast it with your private-sector experience? Is the process of making a decision at the Federal Reserve and the FOMC very different from the process in the private sector? If so, what do you think those key differences are?

MS. BIES. The main difference is that you don’t have a final decisionmaker. You don’t have a CEO who at the end of the day can pull his executive team together after hearing all the diversity of viewpoints and say, “Okay, this is my decision, and this is what we’re going to do.”
The Federal Reserve tries to get to a consensus. Whether it was Chairman Greenspan or, now, Chairman Bernanke around the FOMC table, what I find is, people actively listen to each other. While we come into that room with varying degrees of perspectives, I’m always struck by how we can get to a consensus most of the time. Occasionally, we have members who cannot support the consensus perspective, but when you have 18 or 19 people sitting around the table, it is remarkable that we have dissenters on so few occasions.

The fact that people can come to the same consensus but for different reasons is very interesting. Even with different perspectives on how monetary policy is working, on the assessment of current conditions, or on what the appropriate path of policy needs to be, people around the table can still come to the same decision at a given FOMC meeting.

The variety of backgrounds of members of the FOMC is a positive element in the way we come to consensus. Each of us has a different background in how we interpret similar kinds of information. That is a strength. We’re not using the same model, the same framework, and just parroting each other in coming to a decision. We honestly look at it from the best information that we have and our own philosophy and perspective on monetary policy. That we don’t all come to it from the same perspective is healthy.

MR. SMALL. It would seem to be a challenge to work in that framework, operate that way, keep things moving along, and not induce too much inertia into the system. Is it?

MS. BIES. For monetary policy it’s good, because monetary policy works with such a lag anyway. Whatever you do today, it’s going to take a while to see what the effect is. You don’t want to whipsaw the economy just because you’re not sure that you’re on the right track. You have to let things play out. For other types of decisions, the length of time it takes us to
make some operating decisions—not a monetary policy decision—sometimes has frustrated me, because we’d also try to arrive at those decisions on a consensus basis.

In the private sector, you have to seize the opportunity in the market, so you need to make a quick decision. You are willing to make the call with 80 or 90 percent of the information because you’ve got to seize the market opportunity. You have a senior decisionmaker who will make the call. You don’t have to take the time to build consensus. The person who makes a call knows he or she is accountable. Here—especially with issues that involve all the Reserve Banks—there is no one Reserve Bank that has the call; it has to be a consensus. In monetary policy, that works for us. In other areas of our operations, it is a governance issue.

**Impressions of FOMC Meetings**

MS. BIES. I would like to comment on what the mood is like around a[n] FOMC table. When I came to the Board, I thought FOMC meetings must be solemn occasions because of the weighty decisions that need to be made. I was struck at how informal the actual meeting is. Of course, there are certain things that happen in a specific order in every meeting. The folks from the New York Fed who run the Open Market Desk give their assessment of what is going on in financial markets in the United States and globally. Then the senior Board staff directors give their summaries of what’s in the Greenbook on the economic outlook and the forecast. But once we get to the go-rounds, it is much more informal.

One thing happening with Chairman Bernanke versus Chairman Greenspan is that informality and interaction is increasing while I have been here. For example, I was struck when I got here that there was no fixed order in which we speak at the FOMC meetings. By convention, the first go-around where everybody gives their perspective on economic conditions, we generally let the Reserve Bank presidents go first. But the order in which they speak is based
on how quickly the presidents raise their hands and are recognized by the Secretary and their name gets written down. It isn’t by seniority. It isn’t by District number. It is purely by when they want to speak. Some presidents like to speak at the beginning, some at the end. I always find it interesting when you see a president speak in a different order than what they normally would. Maybe that provides a perspective on what their thoughts are at the meeting. The same thing applies for the Governors. Sometimes I’ll sit there and listen to some of the presidents and then realize that I haven’t raised my hand yet to get the Secretary’s attention. I wasn’t anticipating that informality.

The other thing is that there is humor around the table. I can remember the first FOMC meeting. I can’t remember exactly the comment, but Chairman Greenspan made some comment we all laughed about. I can remember sitting there thinking, “My heavens, we’re laughing at a[n] FOMC meeting.” I think it is appropriate that there is humor mixed in with the serious dialogue taking place. It makes everyone feel free to state things the way they want to because the meeting isn’t so formal and fixed.

The last thing I’d like to say is, I notice that what I do is similar to what other Governors do when I talk to them before and after the meetings. I go into the meeting with a summary of what I want to say that go-round, but as I sit in the meeting and I listen to people’s comments, I will edit the summary until I get my turn to talk because I want to respond to something somebody else has said and support it, or I may disagree with them and may want to give some counterevidence. It could be a point that I didn’t think was going to be important enough to comment on, but I realize as the dialogue goes on around the table that this is an issue that I do want to weigh in on. So the fact that we’re editing on the fly also surprised me, because I
thought everybody went in like you would in the Congress and have written testimony—that you stick to your text.

It wasn’t as formal a meeting as I was expecting. And now, with Chairman Bernanke encouraging us all to use two-handed intervention, to respond to comments on the spot, or [to] ask questions of our colleagues around the table, I think that will improve the quality of the dialogue. I’m glad to see that change happening.

MR. SMALL. The FOMC members have mountains of computer printouts, the Greenbook, the staff presentations. Is that the elephant in the room, that you can’t beat something with nothing? Once this heavy analysis is laid down, does it have a heft to it that’s hard to diverge from, or does the FOMC quite freely deviate from it and come to their own views?

MS. BIES. Some of the Reserve Bank presidents—their own Reserve Banks have their own models—on occasion will say that their model at their Reserve Bank comes up with a different conclusion than the Greenbook. For the Governors, we don’t have our own staff [members] creating our own models. What I like is that the staff always does alternative scenarios. First I read the quick summary in Part One of the Greenbook, and then I go to the alternative scenarios.

We don’t get the Greenbook until usually the Thursday before the FOMC meeting on Tuesday. So by Thursday before a FOMC meeting, I have a pretty good view in my mind of how I think things have changed since the last Greenbook forecast. My first reaction when I see the forecast is, I would have thought employment would be lower, or inflation risk is higher, or something. I will start reading the alternative scenarios to see what it is that leads me to a different answer. Most of the time the alternative scenarios will help explain the differences
from my perspective and my assumptions going in versus what’s in the baseline case in the Greenbook. It’s good to have those alternatives.

The other thing I do—and others do, I think—is look at other forecasts in the private sector. I know that over the long run, in the Greenbook, the staff has a very strong performance relative to the private sector in forecasting. It’s good to look at what the private sector is forecasting, because whatever we do in policy is going to be absorbed by the private sector in light of their own inherent forecasts. So we need to be aware of it, even if we don’t agree with it. That’s another sounding board that I can look at to monitor what the staff is doing. But [the] staff does a fantastic job. Around the FOMC table I always look to Dave Stockton when, as director of research, he gives his summary of the economics and what’s in the Greenbook. I love the humor he injects. I will miss Dave Stockton’s comments.

MR. SMALL. That wraps up the interview. Thank you for your contribution to the recollections [and the] Oral History Project.