Federal Reserve Board Oral History Project

Interview with

Jack K. Walton II

Former Associate Director, Division of Reserve Bank Operations

Date: February 9, 2009, and March 16, 2009

Location: Washington, D.C.

Interviewers: Winthrop P. Hambley and Lynn S. Fox

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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February 9, 2009 (First Day of Interview)

MR. HAMBLEY. Today is Friday, February 9, 2009. I am Winthrop Hambley, a senior adviser in the Office of Board Members. I'm here with Lynn Fox, a senior adviser in the Office of the Staff Director of Management. We are at the Federal Reserve Board in Washington, D.C. interviewing Jack Walton as part of the Board's Oral History Project. In 2008, Jack retired from the Board as associate director of the Board's Division of Reserve Bank Operations (RBOPS) after a distinguished 31-year career at the Board.

Although Jack worked in other areas during his time at the Board, in this interview we will focus on his involvement in payment system issues and his work in RBOPs, focusing particularly on the periods from 1977 to 1984, and then from 1992 through 2008, when he retired.

In 1977, Jack came to the Board as an economist in the Division of Research and Statistics (R&S), where he helped to define daylight overdrafts, and worked on early payment system risk policy. From 1981 to 1984, Jack worked in the division that preceded the current Division of Reserve Bank Operations and Payment Systems, which we now call "RBOPS." In that division, he worked on the implementation of the Monetary Control Act of 1980 and, in particular, the pricing of payment services provided by the Federal Reserve, as well as the early model of the private sector adjustment factor that's so integral to that pricing.[1] He also participated in the development of principles for pricing Federal Reserve services, and wrote a report recommending consolidation of the Fed's automated clearinghouse (ACH) services. From 1984 to 1988, he worked in the Banking Section of [the] Division of Research and Statistics.

[1] Charles R. McNeill and Denise M. Rechter (1980), "The Depository Institutions Deregulation and Monetary Control Act of 1980," *Federal Reserve Bulletin,* vol. X (June), pp. 444–53.

From 1988 to 1992, he moved over to the newly-created Division of Monetary Affairs. In 1992, he went back to RBOPS. In the following years, he focused on the efficiency and effectiveness of retail payments—such as check and ACH payments—at the Reserve Banks, first becoming ACH manager in 1992, check manager in 1995, and then retail payments manager in 1999. In 2001, Jack was named to the Board's official staff, and became RBOPS' assistant director for both retail and wholesale payments. In 2005, he became the division's associate director and took on additional responsibilities for the Board's fiscal agency program. Jack was working in RBOPS when he retired in 2008.

Thank you for agreeing to participate in the Board's Oral History Project. Let's begin with your early life and your education.

Background

MR. WALTON. I don't exactly hail from any one particular place. My father worked for a large corporation, and we moved about the country quite a bit. I was born in Kansas City, Missouri. I lived in Dallas, California, Chicago, and eventually ended up in Youngstown, Ohio.

I did my undergraduate work at Rockhurst College, a Jesuit school in Kansas City, and graduated with a B.A. in economics. I went to the University of Maryland for my graduate degree, where I graduated with a M.A. in economics.

After graduating from Maryland, I had an opportunity to work at the Board or at the World Bank on a large-scale modeling effort for Southeast Asia. I chose the Board. I didn't think that I was likely to stay at the Board for a long time. I thought there might be possibilities to move about the country in the Federal Reserve System whenever I decided to move. Thirty-one years later, [laughter] I retired from this place. It has that kind of pull on you.

My natural inclination was to get involved in topical issues, so I gravitated to hot topics that were at the fore at any particular moment, and my bosses allowed that. I have worked on interesting issues throughout my career. That's probably what kept me here more than anything else. I had opportunities over my career to move within the Fed System, including New York. But, as it turned out, I had a more satisfying career staying put.

MR. HAMBLEY. How did the opportunity to come to the Board arise? Did you know anything about the Fed before you came here?

MR. WALTON. I was just going through what organizations were hiring at the moment. It was a "pound the pavement" kind of approach. My fields were public finance and econometrics. Charles L. "Charlie" Schultze was my adviser. I think Charlie is still kicking over at Brookings.

MR. HAMBLEY. Was there a Fed recruiter on your campus at the University of Maryland?

MR. WALTON. I don't believe so. I'm not sure if there is one today. But I do know there are more Maryland graduates at the Board.

MR. HAMBLEY. Did Charles Schultze suggest that you might want to look into this place?

MR. WALTON. Not particularly, although in the early years, he did come over here quite frequently. I'd see him in the halls, and we'd chitchat.

MR. HAMBLEY. He was on the CEA (Council of Economic Advisers) from 1977 to 1981.

MS. FOX. Did you choose Maryland because you were interested in public finance?

MR. WALTON. It was a little more practical than that: Maryland offered me the most money of all the graduate schools to which I applied. I wanted to get out of the Midwest, since I had lived all my life there, and go either to the East Coast or the West Coast. Maryland came up with the largest package. It's nice to come out of school with no debt, now that I'm financing my two children who are presently going to Illinois and Wisconsin.

Early Check Processing

MR. HAMBLEY. Tell us about the business of check processing as it existed before you got into it at the Board.

MR. WALTON. Before the Monetary Control Act of 1980 (MCA), the Reserve Banks provided check collection services to banks and thus had check processing operations. (The Reserve Banks offered a wide variety of payment services in addition to check collection; for example, cash and government securities services.) At one time, the Federal Reserve had 48 offices. By the time I came into RBOPS, we were down to 45. Each office had its own approach and production processes for providing check services. Prior to MCA, there was no pricing of such services. That was one of the benefits of banks being members of the Federal Reserve System: They received free payment services.

There was a notion at the time that there should be some sense of efficiency and control in each of these Reserve Bank check-processing operations, but it was pretty much District specific and in some cases, office specific. Each Bank had a wide range of services and payments operations activity, given the preference of the administration of each Reserve Bank. Some focused on those providing a more comprehensive set of services; some did not. The operations were quite diverse. The Board had a statutory obligation to provide oversight to the Reserve Banks for these operations to make sure the taxpayers got their dime's worth from the operations. In the early days, operational metrics were developed to facilitate that oversight. These metrics existed before PACS (Planning and Control System), our cost control accounting system, which further expanded these measures. It was a way of comparing efficiency and cost effectiveness across the operations of each office and District.

MR. HAMBLEY. You once described these check-processing operations as a rather sleepy backwater until sometime in the 1960s, when paper started to pile up, and there was a paper crisis.

MR. WALTON. In the early days of the Fed, checks were the wholesale payment system. That's how banks moved money amongst themselves. It wasn't until after World War I that checks became a payment instrument that we as consumers use today. Check payment usage grew from World War II through the early part of the 1960s as economic activity picked up. Checks were processed under the Uniform Commercial Code, which meant that to collect and receive payment for a check it had to be physically presented to the bank upon which it was drawn. And while checks might take various routes to get collected, it was costly, time consuming, and labor intensive.

MS. FOX. In the 1960s and 1970s, was there competition in that processing business?

MR. WALTON. It was probably de minimis if anything. Most banks, most commercial institutions, did not compete per se. They used their payment services as an entrée to provide more profitable services to their customers.

MR. HAMBLEY. If you were a member bank, you got these services from the Fed; if you were not a member bank, you would get them from a correspondent bank.

MR. WALTON. Right. And it was effectively a loss leader service for financial institutions to offer to their customers. The notion of "free checking" has been around for a long time and has been marketed as a hook to get customers—because if one bank offered free check services, every other bank had to effectively offer it. There has always been this notion that whatever services are provided by banks in a community, the other banks in that area would pretty much offer the same services; otherwise, they would be at a competitive disadvantage. But since, in the limit, the Fed provided these services gratis—and a lot of the correspondent banks were members of the Fed—this free check service did not cost the banks a tremendous amount, other than their own internal operations.

Check processing, however, was a labor-intensive operation, and institutions started bringing on capital equipment to process these paper items. Today these machines appear fairly primitive, but you can find some of these old machines, some of the old 801s, and other devices at some offices as historical relics. An 801 machine was basically an individual work station to process checks. These work stations would enable a check to be encoded and sorted for collection. You had rows and row of these devices—the original cubicle—with mainly women sitting there keying away. Then runners would come, pick up the checks, and compile them for each bank. They'd deliver the checks through the local clearinghouse, which was generally located at the Reserve Bank office. The technology was very primitive.

Over time, the level of economic activity grew, and the use of paper checks increased dramatically. Although the Diners Club card came out in the 1950s, credit cards really didn't take hold until much later, in the 1960s and 1970s, and then they really ramped up. Debit cards didn't start showing up in a big way until the 1980s, and then exploded in the 1990s. In the movement from paper to electronic payments, we were still very much in the paper mode in the early years. And pre-MCA, the bulk of the payments on the commercial side or on the retail side were paper-based.

MR. HAMBLEY. As economic activity increased, there was a lot of paper that had to be handled. When were MICR (magnetic ink character recognition) and automated processing introduced?

MR. WALTON. I think that MICR encoding was introduced in a big way in the late 1950s—the magnetic ink character recognition line on checks with which everyone is familiar.

Throughout this period, there was a significant increase in the amount of paper processing that affected all organizations. The New York Stock Exchange, for example, would have to close early on Wednesday afternoon to catch up with the paper processing from all the trades that took place, and that was related to the paper use issue. There was a study done back then to address the increase in paper processing that was starting to overwhelm the various businesses and their processing systems. You started seeing different companies like Unisys, Sperry Rand, IBM, and NCR develop equipment that could process paper more efficiently. By the way, the Postal Service is going through the same thing today. Check processing is similar to mail processing. The Postal Service is now confronted with the same sorts of processing and cost issues that the Federal Reserve had; hence this notion of the Postal Service going to five-day versus six-day delivery, consolidating processing locations, reducing the number of offices, and the like.

As machines to process paper were developed and rolled out, you had each of the Federal Reserve offices making decisions about which companies that developed these machines and related production processes to use. You had 48 decisionmakers at the time, and they did not necessarily choose the same solution. Thus, the System ended up with effectively 48 solutions. Then, over time, 45 solutions as the number of offices were reduced. Over time, two companies—Unisys and IBM—came to dominate both the hardware and the software platforms to process checks as processing became more electronic and more automated. At one time, we had seven of the Districts on one platform, and five on another platform; and then it became six and six. And through time, this dichotomy of check processing became increasingly an issue from an operational efficiency and from an organization perspective.

MR. HAMBLEY. In the early 1970s, the Board made the decision to participate in the Automated Clearing House (ACH). When you came to the Board, how developed was that, and for what was it used?

MR. WALTON. In reaction to some of the studies that talked about the paper blizzard, they came up with this "electronic check" notion, which was the Automated Clearing House.[2] There were different ones in different states at the time—Georgia had one and California had one. There was a SCOPE (Special Committee on Paperless Entries) project formed by a group of California bankers. A number of these automated clearinghouses when formed were localized in certain regions of the country. Then it blossomed to be a larger effort. In the 1970s, the use of ACH started taking off, especially when the military and federal government began using it for government payments.

MR. HAMBLEY. The ACH would be used, for example, to make an automatic payroll, and these would typically be recurring payments.

MR. WALTON. Correct. In the early days, from roughly 1973 to 1977, to get it going, typically they were credit payments, such as payroll, and not so much debit payments. It was much easier to convince folks to accept deposits into their accounts than to have their accounts debited.

[2] The history of the ACH is available on the website of the National Automated Clearinghouse Association.

ACH usage took off as it was seen as a way to address the issue of how to process the ever increasing number of paper payments more efficiently. ACH processing initially started off with paper payment listings and payments on computer tapes that would be flown around the country to be processed at the regional ACH locations. The Fed had a national footprint and was closely associated with most of the clearinghouses. That's probably the main driver as to why the Fed got into ACH processing: because the Fed could take these paper listings and computer tapes—these computer tapes were rather large at the time—and fly them to the various Reserve Banks to process the payments. In addition, the Fed's clearing and settlement services contributed to becoming the backbone of ACH processing.

Decisions about the role of the Federal Reserve in the payment system was a hot topic back then. Those decisions largely depended who was sitting at the Board table at the time. Just before the Board's decision to participate in ACH processing, the Fed had been asked by credit card companies to participate and to process those signed credit card receipts that were used to pay for, say, meals at a restaurant. Recall the customer would receive a carbon copy of the receipt, and businesses would collect those little pieces of paper using the credit card system at the time. The Board members at that time decided that the Fed shouldn't get involved in providing credit card collection services. But not too much later, the Board decided to participate in providing ACH services. I don't know if they made a distinction in their minds that the ACH services were largely going to be government payments versus individual payments that the private sector could do. Governor George Mitchell may have been around for one decision and not the other decision. But that predates me, so I can only speculate.

MS. FOX. What was the technological background or interest of Board members?

MR. WALTON. Governor George Mitchell clearly was involved.[3] At some point in my tenure here, long after he was a Governor, he had an office on the fourth floor. Mainly, I heard stories from Elliot McEntee and the folks that worked with Mr. Mitchell while all this was going on. Mitchell was very active. At the time, there was the notion that we were going to go to a paperless society. That popped up in the 1960s after the paper blizzard issue came to the fore. I think many people have regretted thinking that we were going to, within a generation [laughter], be moved to a paperless payment system, a paperless society. There's ever more paper today than before. But it's not obvious why the Board made one decision on credit cards and another on ACH.

In 1977, the National Commission on Electronic Fund Transfers issued a report. It wanted to encourage electronics; it came up with various and sundry recommendations. This was the beginnings of the ACH; it came basically from that group.

MR. HAMBLEY. The report urged the Congress to pass electronic fund transfer legislation. Among other things, the report laid the basis for what became the Electronic Fund Transfer Act of 1978, which became effective in 1980 and was administered by the Board.

MR. WALTON. That is correct.

Early Days at the Board

MR. HAMBLEY. In 1977, you came to the Board as an economist in the Division of Research and Statistics. What did you work on initially?

MR. WALTON. When I first got to the Board, I worked on a series of projects, nothing very substantial. Then Ed Ettin, Dave Humphrey, and Elliot McEntee started looking into the

[3] George Mitchell was a pioneer in the development of electronic fund transfer systems. In the 1960s, he began advancing the Fed's version of a paperless bank system in which computers would routinely transfer funds instantaneously between accounts.

risks to banks from potential settlement failures. Ed Ettin was quite concerned as the accounting systems had changed from a completely paper world in which it wasn't until the end of the day that all receipts and expenses could be tallied up and the balance for an organization known—a bank in this case. With the way electronics and the way money was moved into and out of accounts, what implicit exposure was there during the day? This was the start of working with those folks to develop what's now called the "Payment System Risk Policy."[4] Back then, I was tasked with "Get some data on this and figure out what is going on with these intraday balances." We didn't call them that at the time. We collected information from the New York Fed because that was where the funds transfer system data resided. These extremely large tapes were sent to us. It was very taxing. When I first came, we had to use Hollerith cards when we were generating a computer program.[5] So you would sit there typing in Fortran [laughter], you'd submit the cards, they'd run the program, you'd get your errors, you'd go back, debug it, and type them up again. It was a painful process.

MR. HAMBLEY. With this process, you are actually defining what we now think of as daylight overdrafts.

MR. WALTON. Right.

MR. HAMBLEY. And you were doing this because of a concern that the Federal Reserve might be inadvertently extending credit to which it might be exposed. And at that point, you didn't know.

MR. WALTON. Right. We didn't know, and there were lots of issues about what would happen if a bank had a midday closure (failure). Ed Ettin had a natural curiosity about all sorts

[4] The Federal Reserve first published a policy on risks in large-dollar wire transfer systems in 1985.
[5] Now an obsolete recording medium, these punch cards contained digital information represented by the presence or absence of holes in predetermined positions.

of things, and he could chew on a bone like no other person. We would sit around and talk about these things. I got a couple of folks from what was called at the time the Division of Data Processing. Effectively, I had these guys full time. We would sit there, and we would crank, trying to figure out how should we define intraday credit exposure. At the time, I worked closely with Dave Humphrey, an economist working for Ed Ettin. Dave eventually became the section chief of financial studies in the Division of Research and Statistics.

With Ed, everything had to have been done yesterday, so that we were always in this frenzy of activity, which I think characterizes the behavior of most people at the Board. It's always been one of those things where everything is urgent, and you have to [have] results asap. You were always working with deadlines, and that fits my personality.

MR. HAMBLEY. On the staff culture comment, do you think it's because of the fear that something is going to go wrong and you need to get there first?

MR. WALTON. I think it's just a personality quirk that resonates with so many people in this place. You want to get something done, so you work diligently with all due alacrity to meet deadlines. Then research begets more research and begs more questions, and so the research effort continues.

Developing the payment system risk policy was an interesting project, and it grew over time within our little group. Effectively, we defined what a "daylight overdraft" was. We took the 2900 report—the daily report of deposits—for depository institutions (DIs) that we had information on and used that to determine what the DIs beginning and ending of day balance was in their reserve balance. Then we took all Fedwire payments activity, and we'd figure out which ones were debits, which ones were credits to accounts, and run those through in time sequence order. Then we'd calculate the end of day balance and compare it with what was reported on the

2900. That difference was then all the other payment activity that occurred with that DI. It represented all non-electronic payment activity, mainly check and some Treasury payments. If that difference was a credit to the DI, we'd credit them at the beginning of the day. If it was a debit, we'd wait until the end of the day, taking a conservative approach in determining intraday credit exposure. Now this process mixes stocks and flows, so methodologically there were some issues. But that was the best we could do at the time.

We would then plot the DIs' minute-by-minute reserve balances to show how the account fluctuated throughout the day. At the time, there was very little software to facilitate this type of analysis at the Board. I worked with various divisions to explore what software that could be used for our analysis. I think SAS, and some other software whose names I've forgotten, came along at the time.

MS. FOX. So you were building the bridge as you were trying to cross it.

MR. WALTON. Exactly. That was a theme throughout my entire career, particularly when I was in the Division of Monetary Affairs. For example, calculating the money supply measures were very much paper based, but when I left, it was pretty much all automated. There were many long nights dealing with pencil and paper.

As a result of our simulations and analysis, staff were concerned with the very large intraday extension of liquidity for large banks by the Fed. It looked like there were these gaps of billions and billions of dollars during the day. In some sense, you could say it was just an accounting phenomenon, but the world has changed so much today, who knows what can happen at any given moment. So, in that sense, it was a legitimate concern about what might happen to payments should something happen during the day. If everything shuts down, what position are all the counterparties in? Who owes what to whom, and how are they going to be able to make good their payments and what would be each DI's position if those payments have to unwind?

We also tried to get some additional data, I think, from CHIPS (the Clearing House Interbank Payments System) and a couple of other competing large-value transfer systems—electronic large-value fund systems—at the time. CHIPS was one, but I don't think they were called "CHIPS" at the time. There was the New York Clearing House. There was a group in Chicago with the Chicago banks called Cash Wire. There was CHESS (Clearing House Electronic Subregister System). Eventually, only the data from the Fed and the Clearing House were used.

MS. FOX. Were the banks worried about the same problem because they would be on the other end of that payment if it didn't come?

MR. WALTON. To that extent, within their rule set, they had an unwind algorithm. So if there was an inability to settle at the end of the day, then they presumably had the ability to unwind individual bank's positions. That evolved over time. As we got into it, we started talking to the industry counterparties. I think that elevated their level of understanding and hence concern about this issue. And their rule sets changed. I believe Jeff Marquardt wrote something about some work with CHIPS in the early days.[6] So we got that sorted out in a better fashion. But that might not have taken place until the early 1980s. That was probably the most significant major project that I worked on when I was in R&S.

MR. HAMBLEY. Here is an example where you didn't have the facts. You developed the facts, and that led you to have some concerns that you didn't have before. That led you to have discussions with the industry about whether they had similar concerns, and to the idea that

[6] Terrence M. Belton, Matthew D. Gelfand, David B. Humphrey, and Jeffrey C. Marquardt (1987), "Daylight Overdrafts and Payments System Risk," *Federal Reserve Bulletin,* vol. 73 (November), pp. 839–52.

we all ought to talk about this and work cooperatively to make sure that that worked out. Talking with industry representatives is an important aspect of the Fed's work, particularly in the payments system.

MR. WALTON. That's true. And I think collaboration with the industry has gotten much better over the years. In the early days, when Ed Ettin or Elliot McEntee would talk to industry groups, maybe those discussions with industry didn't go so smoothly because of an impression that we were government, and they were private sector. They knew what was best, and we were just this clunky group that didn't really understand. There are probably some great anecdotes that people can tell you about Ed and his conversations with some of these people during meetings because Ed could really kick out the jam when he wanted to. [Laughter] And some of [the] bankers had big personalities.

Monetary Control Act of 1980

MR. HAMBLEY. You had been at the Board for a few years when the Monetary Control Act passed in 1980. Among other things, the Act made Federal Reserve services, including the discount window, available to all banks, not just banks that were members of the Federal Reserve System. The Act also required the Fed to price its payment services in the way that a private sector provider would do.

Before the MCA, the Fed did not price its services and didn't serve all banks. Correspondent banks did similar things, and now suddenly the Fed was going to provide services to all banks; it was going to be a competitor. Is that the origin of the notion that we have to make sure that the Fed is a fair competitor, and the origin of the PSAF, the private sector adjustment factor?

MR. WALTON. The legislation provided that there would be a private sector adjustment factor to ensure a level playing field with the Fed's competitors. The MCA applied not only to the Fed but to the Federal Home Loan Banks and other governmental entities. We had to make sure that, when we competed, we capture all the costs: taxes that would have been paid if we were a private sector firm, the costs of capital we would have incurred, and things like that. There was a lot of discussion back at the time about how to put all of that together. Jerry Corrigan was, I think, Chairman Volcker's point person in trying to sort out some of these issues working with the RBOPS folks. There were a lot of interesting and robust conversations. We hired outside consultants. One was Fred Arditti, a finance professor at the University of Florida; he was a economics Ph.D. and finance guy. We brought him in and talked about the cost of capital and how we should figure that out.

By the way, I was also supporting the Banking Section. With the MCA coming along, that had implications for the 2900 report and all of the bank reports that we gathered on a daily, quarterly, and annual basis for calculations of reserves, required reserves, and the like.

MR. HAMBLEY. Before the MCA, the Fed had a monetary control problem. Only some depository institutions were subject to our reserve requirements. There were other state-chartered institutions that were subject to state reserve requirements that were different. And one consequence of this was a problem for monetary control.

MR. WALTON. That was the argument at the time. It's much easier to have an interest rate target, a reserve target—depending on how you go about it—if all the institutions are under one rule set. If they were under multiple rule sets, it made it more difficult. I would not say it was impossible, but that was the argument that was used to move us to a uniform rule set.

MR. HAMBLEY. That was in a world where inflation was high and rising. So if the central bank makes this argument, it's something that the Congress thinks about.

MR. WALTON. Right.

MS. FOX. What about membership issues during that period?

MR. WALTON. Bank membership in the Federal Reserve System kept falling off.

MR. HAMBLEY. Member banks of the Federal Reserve System were subject to the Fed's reserve requirements and didn't earn any interest.

MS. FOX. So they switched charters and left?

MR. WALTON. They left. They would become state-chartered nonmember banks. This leakage or movement away from the Fed gave impetus to the argument to pull everybody under the same umbrella.

MR. HAMBLEY. Chairman Miller had promoted this idea to the Hill; he had testified on it at least once or twice. It had gotten to a certain point in the legislative process.

MR. WALTON. We were getting far afield with the inflation. I bought my first house in 1978, and my mortgage rate was I think 17 percent, and rates were going up from that point. When Volcker came in, he made this strong case that interest rate targeting wasn't getting the job done; a monetary quantity target was needed. That resulted in a pretty draconian effect on the economy, but that ratcheted down the inflation threat. At the time, people didn't know how close to the precipice of hyperinflation we were, but everybody knew that if you fell off that precipice, your economy was toast. Take a look at all the examples of that worldwide over time—Germany, Austria, South America. We didn't want any of that. I give Volcker huge credit for taking a very difficult political stance and doing the right thing. Of all of our Chairmen, he probably ranks up there as number one.

MR. HAMBLEY. He was the bravest.

A deal was ultimately done that resulted in passage of the Monetary Control Act of 1980. The deal was depository institutions that offer transaction accounts would all be subject to the same Fed reserve requirements. That was the monetary control aspect. But that was going to be burdensome to them, and, in the end, the Congress decided they weren't going to pay interest on those balances. Another aspect of the law was, "What can we give to banks that are going to be burdened in a way that they weren't before, particularly state nonmember banks?" I believe that was the origin of offering them access to Federal Reserve services.

MR. WALTON. Services free.

MR. HAMBLEY. And the discount window. It was a quid pro quo. If we impose a burden, we confer a benefit. So now the Fed is serving all kinds of depository institutions, and has to think about, "Now we have to price services. How are we going to do that?" Was it a simple process to figure out what pricing principles should be and how they'd be applied?

MR. WALTON. The MCA was passed in October 1980, and we were given a one-year implementation window. That was a challenging time. People had to craft out of whole cloth a mechanism to effectively price and compete. In some sense, we were all theoreticians, and now we had to become realists and pragmatists. How do we put this together? Our early attempts at pricing involved average cost pricing. We have X number of units, it costs us Y amount; divide one into the other, and there you go: average cost pricing. We took a big hit in reduced volumes, particularly in the check area that we were serving up to that point. Over time, we eventually got smarter about that, and so much so that, I think, up until recently, we had about 20,000 prices for check products.

One of our principles was we had to offer our prices to all. You couldn't do a tailored approach, like what most banks do with their customers. Each customer gets whatever they can negotiate from a bank. The bank may start off with a price list, but everything in life is negotiable, and you're foolish to think otherwise. That's how the private sector did it, but we didn't feel that we could do that under the guise of fairness. You don't want to be accused of cross-subsidizing one customer at the expense of other customers because you had more of a monopoly-type position in some region of the country versus other regions of the country. We had a national footprint that most of our competitors did not because interstate branch banking had not come into effect yet. It was felt that we could not compete using our economies of scale like most private sector firms would. So various pricing principles came out that limited significantly what each of the Reserve Banks could do.

MR. HAMBLEY. Those principles were consistent with the idea that the Fed would be acting as a private sector firm would act. The Fed also went beyond what the MCA literally required, which was cost recovery in some sense for all services. That created a requirement or an expectation that for each service, the Fed would recover costs, not year by year, but over the long run. So in an attempt to be fair, the Fed went beyond what the law literally required it to do.

MR. WALTON. In part, I think the reason the Fed did that was because the relationship between the Federal Reserve and the commercial banks in the payment arena was very contentious at the time. "On the one hand," the bankers would say, "this is not going to be a problem because we'll outcompete this government bureaucracy in the provision of these services. On the other hand, the government bureaucracy has significant powers, so they can dust us from a competitive perspective." They were always challenging everything that the Fed was putting out there. There were any number of public comments on Fed proposals, and there was a lot of criticism for just about any decision we ultimately took. It was a difficult time because you had to get these principles out there, get the Board to sign off on them. The Board went through the Federal Register request for comment process, addressed those issues, put something in place, and then went forward. For example, on the PSAF, the Fed came up with a model on how to calculate the cost of capital, and what that should be. That has undergone many revisions over the years.

In a short period of time, the Fed did a credible job to put something in place. Then, over the bulk of the 1980s, the pricing approach was tweaked so the Fed could be an effective competitor. In the payment industry, when you tackle, particularly, retail payments, most of the effective market area only results in a handful of institutions. You basically have an oligopolistic structure and, in that structure, you tend to find a price leadership model. Over time, we were the price leaders, and commercial institutions would one-off our prices.

MR. HAMBLEY. You mean they'd copy the Fed's prices?

MR. WALTON. Effectively.

MR. HAMBLEY. Or they'd pick and choose?

MR. WALTON. But they would price a little bit lower. Also, correspondent banks and clearinghouses would treat large, more profitable customers differently in terms of prices and services. They would take an overall business relationship approach to these customers. So direct comparisons of fees for services were difficult at best. They did not publish their fee schedules nor were they obliged to put those schedules out for public comment as was required of the Fed. Fed pricing of services evolved significantly from the early years of pricing. Initially, the Fed had very few prices and then they expanded as the Fed recognized, "We are offering a significant number of products, and there are regional differences." As it turned out, the correspondent banks and clearinghouses were able to capture more of the higher margin payment business and the Fed ended up with the lower margin business. For example, presenting checks to remotely located banks in sparsely populated areas costs more yet the Fed has to present checks to all institutions irrespective of their location or the costs to do so.

Different Reserve Banks took different approaches to pricing. And through its approval process, the Board basically approved whatever each Reserve Bank did. Sometimes pricing was set at the Reserve Bank office level, within a District, as opposed to setting prices for a whole District. At times, this led to competition within the Fed for the same customers. The federal versus states' rights paradigm emerged in these price-setting discussions quite often. At the time, the Board would just sign off on each of these price lists, so long as it looked like each of the Districts was going to achieve cost recovery.

MS. FOX. The Fed had a one-year project to develop this pricing proposal. It was being run out of the Chairman's office, basically. Jerry Corrigan worked directly for Volcker. It was very high profile for the organization, because the Fed had gone to the Congress and asked for it for the industry.

MR. WALTON. That's right.

MS. FOX. What do you recall about work in that year?

MR. WALTON. Well, I came into RBOPS [in] 1981, so I caught the back half of it. Because of my work with the payment system risk policy, I was involved in a number of closely-related issues. There were all sorts of requests. Trying to collect uniform cost information from each of the Reserve Banks to understand the costs for payment services was difficult because the System did not have a standardized cost accounting system across all of the Reserve Banks. Collecting all these numbers and trying [laughter] to figure out how to make a consistent dataset for pricing purposes was challenging. "What do the Reserve Banks have in the way of existing labor, and brick and mortar, and other capital cost information versus what the banks would have to purchase if they provide these services?" A lot of that kind of thought and analysis went on.

It was fast and frenzied. Earl Hamilton was working with Jerry Corrigan on the PSAF side of things; others including Elliot McEntee were working on various other aspects. There were a lot of moving parts, and the work being fast and furious contributed to the excitement of the time. The hours were long, the requests never-ending [laughter]. As soon as you finish one thing, you were tasked with another thing. By the time the implementation actually occurred and we started pricing in October/November 1981, I was tasked to the newly created Service Pricing section. Earl Hamilton was its manager, and we assessed how each Reserve Bank implemented pricing.

MR. HAMBLEY. The Fed articulated general principles, but as a practical matter, each office or Reserve Bank had tremendous latitude. They were trying to live within the general principles but with reference to their own particular costs. This is a decentralized, heterogeneous operation, and you were checking for what?

MR. WALTON. We were checking to ensure that the Reserve Banks were complying with the MCA broadly and with the Board's pricing principles specifically. Then, we were trying to get the Reserve Banks' to be on the same page about how the Fed would go about providing its services.

For example, there was a significant range of opinion at the highest levels across the Reserve Banks about whether the Fed should market its payments services. Marketing was a verboten word at the time, so you couldn't really have marketing and sales. And, prior to MCA, we used to have a bank visitation program—I forget its exact name—where all Reserve Bank staff went out and visited all the banks in their District. It was a bank relationship type of activity. All of a sudden, what do you do with these guys? You can't have them going out in the guise of promoting Fed services and at the same time talking about, "Would you like a discount window loan?"

MS. FOX. People working for the Reserve Banks somewhere in customer service, or whatever it was called at that point, would go out and visit their customers. And, suddenly, that became a little dangerous because they were trying to sell services.

MR. WALTON. Right. The difference between private sector services versus public sector services.

MS. FOX. The Fed felt constrained because it was the government, or because there were things in the policy and protocol that said—

MR. WALTON. This is where the term "Chinese wall" came in—where there was clearly a central bank function versus our private sector competition function. You did not want that barrier crossed. That was one of the principles. There wasn't a lot of gray area in that principle. Then as pricing started to take hold, the Reserve Banks became more cost conscious: Where should this pool of people go? How should they be allocated? That led to a lot of thorny issues. Many of these folks had spent their life in supervision or some area of the Bank. For some of them, as they were getting on towards retirement, they were put into the bank relations job. They were to speak with the bankers in their Reserve Bank territory so they went to where the bankers were. They may go out golfing or dinner with the bankers; the Fed used to have memberships at clubs, and things like that. But this was back before MCA, and everything was very different.

MR. HAMBLEY. That's where the bankers were.

MR. WALTON. Yes, that's right. Then the Fed said, "We can't do that because that's not an appropriate expenditure of funds." So the Fed redefined what activities were appropriate and not appropriate. [Laughter] It's something that some banks are now starting to gain some insight into.

MS. FOX. These days, it's an issue for the private sector. Were those jobs eliminated?

MR. WALTON. Well, the Federal Reserve has always been a good employer, very paternalistic; it wants to make sure that its people are well cared for. The Fed just didn't push people out; it tried to find places for them. It took a number of years to wean this function down to where it was appropriately sized. Some would say it's still not appropriately sized, even though we're only talking a few hundred people at this time. I would submit that you could have zero sales force out there today, and you'd still have the same amount of priced-services revenue coming in. But there has been many a discussion on that point. Back then we had way too many people doing this sort of activity, and it wasn't clear what the benefits were in additional revenue or any other sales metric that you might imagine today.

MS. FOX. Did the Division of Reserve Bank Operations decree to the Reserve Banks that those jobs would go away?

MR. WALTON. We raised the issue with the Board's Bank Affairs Committee, the BAC.

Two times a year, the BAC would bring in the Reserve Bank presidents and first vice presidents during the budget and Bank evaluations processes. The only "nuclear option" that the Board really has from an oversight perspective is that it can veto a Reserve Bank's budget. The Board never wanted to use that option, so there would be a lot of moral suasion. You would present arguments, and then you would have to get maybe heavy-handed. The BAC chair might take the Reserve Bank president aside, if it came down to that. There have been some "come to Jesus" conversations over the years. A recent example involved Don Kohn and the Dallas Fed. The Dallas Fed didn't want to get on board with some issues. Don had conversations with the Dallas Reserve Bank president, Richard Fisher, and prior to him Robert McTeer. The Dallas Fed was very independent; Texas should be its own country.

Overseeing Reserve Bank Operations

MR. HAMBLEY. By law, the Board oversees the operations of the Reserve Banks. The Board is also the public face of the Federal Reserve System, so if somebody is not abiding by the Monetary Control Act, the Board is going to take the heat. The System is decentralized by design and has been from its very beginning. So if you can't use the nuclear option, what's left? You have to be persuasive in your arguments.

MR. WALTON. Over the years, there were many conversations. Sometimes they were not as effective as they might be. Fifteen years ago, I worked on matters that suggested we didn't need as much brick and mortar and that we certainly didn't need all the new buildings that we have. Now the System has a bunch of see-through buildings. I can't tell you how much blood, sweat, and tears I spent on the Houston branch of the Dallas Fed; we ended up with a monstrosity down there that's not being used. The Secret Service is in there now, maybe Immigration and other governmental agencies.

MS. FOX. Your division was responsible for oversight of the Reserve Banks and their expenditures. It's one of those institutional challenges.

MR. WALTON. That's right. One of the SR (supervisory) letters that I am very fond of is the one that says, "This is the naming conventions for Federal Reserve buildings." At the Houston branch, there is the Edward Kelly memorial room, or whatever they call it. You would have a lot of that. A new Kansas City Fed has been built in the former location of the hospital in which I was born.

MR. HAMBLEY. In accordance with MCA, the Federal Reserve articulated principles. And people like you are going around checking to see whether the Reserve Banks are actually recovering costs and abiding by the principles. In 1997, I believe you did some work with Ed Green about pricing for electronic services.

MR. WALTON. It was just a discussion about when you can use multi-part pricing. Generally, a cost curve for a production function is U-shaped. So as volume of production increases from a low level, initially you get increasing returns to scale; then as the cost curve flattens, constant returns to scale; and then as the cost curve turns up, decreasing returns to scale. With electronics, you typically have a region where marginal and average cost falls throughout the relevant range of volumes.

MR. HAMBLEY. The larger the volume, the lower the average cost.

MR. WALTON. Right. And average cost, or cost per unit, will asymptotically approach zero. Thinking about electronic payment processing, processing a bunch of bytes and bytes through the system yields a close to zero marginal cost for an extra payment. The music industry is confronting this; the video industry will be confronting this because it's virtually costless to process the next unit. When thinking about competitive markets and competitive pricing, price should equal marginal costs. We were taking it from a theoretical perspective: What should the price be for our products? We drafted up a memo—which I believe we did in July 1997—where we discussed the theory and determined when it's appropriate to have two-part pricing, including a fixed fee. Like a swimming pool club, you pay a membership fee and an annual fee. Presumably, the membership fee covers that large fixed cost structure, and your annual fee covers the ongoing costs for hiring the lifeguards and whatever other expenses. It is similar with electronic payments. We did that for ACH, and it was applied to the Fedwire service. In some sense, we've always had multi-part pricing with checks because we've always had a cash letter fee, and then a per item fee for check processing.

MR. HAMBLEY. The Fed has always had it, or did it have it after you studied it?

MR. WALTON. In check, we had it before then. We had a whole series of average prices early on in MCA, but we quickly came to the idea that there should be some sort of a fixed charge because there are fixed costs no matter whether there's one check in a cash letter or 3,000 checks in a cash letter. There's certain accounting that is required and certain handling that has to take place for each cash letter. Then the checks are run through the computer, sorted, distributed, and then delivered. This then provided the theoretical framework for not only what we were doing in check, but for what the Reserve Banks were wanting to do with the ACH and the Fedwire.[7]

MR. HAMBLEY. And they ultimately did.

MR. WALTON. Yes.

MR. HAMBLEY. You contributed to the way those prices were set.

MR. WALTON. And are set today.

It was a tremendously contentious time after MCA implementation through probably the mid–1990s. The Reserve Banks chafed under any guidance that the Board would give. Reserve Bank presidents were calling the Governor who was the chairman of the BAC and complaining, or even talking to the Fed Chairman at the time. The Fed Chairman typically wasn't so interested in the payment issues, and it fell on the BAC chair to address these concerns. Vice

[7] Adam M. Gilbert, Dara Hunt, and Kenneth C. Winch (1997), "Creating an Integrated Payment System: The Evolution of Fedwire," *Federal Reserve Bank of New York Economic Policy Review,* vol. 3, no. 2 (July), pp. 1–7.

Chairman Kohn has been very useful, productive, and effective in dealing with the Reserve Banks. He came from a Reserve Bank, so he understood that culture, and he has worked at the Board long enough to have a good perspective on what the appropriate balance should be. Some of the Governors we have had on the BAC committee over the years would attempt to micromanage the Reserve Banks or try to be overly deferential to the Reserve Banks. For RBOPS staff, it was difficult at times to be told, "Make sure that you have a well-controlled, efficient operation, but don't piss off the Reserve Bank" when you want to say, "This guy should be fired! He's incompetent!" It made for a challenging assignment. It is one of the reasons why there's so much staff turnover over there. It's very unsatisfying. You never feel like you're being supported fully by management because there is this nuanced balance.

Some management over there has failed at times to provide the perspective that's necessary for staff members to feel like they're contributing in a way that's being recognized by the Board, and yet balance the needs and issues that the Reserve Banks have. I spent a fair amount of time in my later years trying to make sure that there were effective relationships between the Board and the Reserve Banks so that everybody understood what the arguments were, why we were concerned, and trying to bring staff into seeing that many issues are not so black and white.

The genesis of the division was this oversight and examination-type paradigm, and so it's mainly a black and white, checklist kind of thing. And life is not quite so obvious. Trying to educate people to recognize that there is a fine line between understanding what the Reserve Banks' challenges and missions are versus what ours are, and reconciling those different perspectives, was difficult. The world looks at the Federal Reserve as a monolith. They don't view us as our separate parts. We have to have the good sense to know how we're going to be viewed by the world at large. Ensuring that the Reserve Banks understand that they realize how their actions can be interpreted differently by the industry or the average citizen. That the buck stops with the Board. We catch it here. The Board gets the letters from members of the Congress. The Board has to go to the Hill to explain why things are the way they are. So I think there is probably too little of that education that goes on, because it requires an awful lot of management attention to actually do that effectively. And there's an awful lot that needs to be done by management, period. You just can't sit back and say, "Well, it's intuitively obvious that you need to do this," as some managers are wont to suggest.

MS. FOX. For anybody that has worked for a long time in the Fed, or been a leader in this institution, if you asked them whether the model we have now is a good model, they would say, "If I started from scratch, I would not design the model this way. It was built for another era."

MR. WALTON. That's right.

MS. FOX. On the other hand—

MR. WALTON. We are where we are.

MS. FOX. We've made it work. And maybe this friction and the challenge of running a decentralized organization in a world that is increasingly centralized. Your career hit right on that.

MR. WALTON. Yes.

MS. FOX. So I think you're sounding fairly moderate, considering.

MR. WALTON. Well, I suspect that we will see legislation over the next few years that will change things pretty dramatically. They're trying to figure out all sorts of stuff up on the Hill, the whole systemic risk issue. I mean, the caution that Volcker was testifying to the other day about burdening the Federal Reserve.[8] What is the central bank responsible for? In the limit, there's only one thing a central bank can control, and that is to ensure the integrity of the money, of the nation's currency. You've got to have inflation well controlled, and inflation is inherently a monetary phenomenon. That's job one. Everything else is extraneous in some sense, when you talk about what a central bank and monetary policy is all about.

And we have been tasked with ever more responsibilities far and wide. Some responsibilities we've executed well, some probably could have done a better job, particularly the responsibilities in the area of consumer protection that we've increasingly been tasked with. That's not to say we haven't been responsive, but sometimes maybe we've been less effective because we have operated under the paradigm that it's a competitive world out there, when in fact it's probably less competition than we would really like to believe in many cases. And the commercial banks are real good at figuring out how to be profitable, and sometimes that means they treat their customers not so well or fairly.

Check Truncation

MR. HAMBLEY. Let's talk about an evolution that occurred in the check world. In the early 1990s, there was an effort to promote check truncation. Do you know anything about how the Fed got into that, and can you tell us what happened?

MR. WALTON. The Fed has spent a lot of its life conducting R&D and being a test bed for a lot of innovation. In the 1980s, the Treasury, when they issued checks, wanted a better, more effective way to process their items. They wanted to be able to store them and be able to retrieve them for very long periods of time. They started a check imaging project with us back in

[8] Mr. Volcker, as chair of the Economic Recovery Advisory Board, testified on February 4, 2009 before the Senate Banking Committee on Modernizing Financial Regulatory System.

the mid–1980s, as one example of that. We contracted with private-sector companies to figure out how to push the technology so that you could image a check and it would capture all the relevant information in a cost-effective way. Of course, that took a fair amount of time to develop. Not to say that you didn't have the private sector doing similar sorts of things, but I think the adoption of that technology in payments processing, probably a lot of that genesis and initiative came from the Fed.

But again, just stepping back, you see the whole paper process out there, and paper is inherently costly to handle and to deal with. So there has been this march ever forward to greater automation, and as a natural consequence, I think a movement towards eliminating the paper from the process, because moving the bits and bytes around electronically is a lot more efficient, and a lot more cost effective, than physically moving the paper. So there has been a lot of this in the background from different areas—from the industry, from the Fed—working to push forward how we can move from a pretty inefficient payment system to an ever-more efficient one. This is significant from a societal cost perspective. We have seen estimates on what it costs society for payments processing. Worldwide, you see estimates that it costs anywhere from a quarter to a third of a percent, to maybe up to 3 percent of GDP. You've got a very significant range. We have done a couple of studies of the U.S. that suggest that it was costly, but not as costly as the 3 percent. Still, any reductions in payments costs that are measured as a percent of GDP can be significant in a $14 trillion economy.

I would say there is a number of other objectives driving us. One of the jobs of RBOPS was to always assure that the taxpayers got their dime's worth. We were always concerned with operational efficiency and how well-controlled these payments operations were. And over my time, what we saw, because we had these divergent operating systems, the multiplicity of processes that people had used even within a common hardware and software platform, whether it be Unisys or IBM, there are any number of ways to do something. When we would go out and do our operations reviews, we would try to identify operational improvements. For the Unisys platform, perhaps if you did your prep work this way, if you did your work flow processing that way, if you did your distribution this way—these are the better practices we have observed. These are more efficient, more effective. That's at the very micro-operational level.

But then stepping back from that, we saw that we could be more efficient if we could move to a more homogeneous production function—recognizing there are differences in some things, but by and large there are not as many differences as some Reserve Bank operations people would have you believe. I have argued for 20 years that there should be a school run by the Federal Reserve, where you train all your check operators. There's an optimal way to do sort patterns. They finally got around to doing that, but it's only been in the last 10 years and not all Reserve Banks have bought into that.

MS. FOX. Is that a Fed culture problem, or is it a philosophical approach that different organizations, different pilots, different efforts, learn by doing?

MR. WALTON. Initially, it might have been a bit of both. Subsequently, it's more the former. It's just the culture. I am from here, and I really don't want you telling me how to do my business. An anecdote to support that: Back in 1995 or so, I was on a workgroup to determine if combining Des Moines (which is in a CPC (check processing center) only set up with rental space to process checks) and the Omaha branch (a full-blown branch in a dying city that had very little work) [was recommended]. They are about 150 miles apart. The work group comprised staff from the Kansas City and Chicago Feds, along with the Retail Payments Office (RPO) and the Board staff. The lease was coming up in Des Moines. Should they abandon Des

Moines and just consolidate the operations? I got arguments like, "The cultural differences between Iowa and Nebraska are too significant to merge those operations." You've got all sorts of wacko stuff out there.

MS. FOX. It's a different era now. But, in those days, when all of this was emerging, and we tried to reduce or cut operations, people locally liked having a Federal Reserve presence, and wanted to protect the jobs, and used the political route to do so.

MR. WALTON. That's right.

MS. FOX. So we've always been really constrained. I remember in Buffalo, we went to eliminate a check processing center, and we had to deal with every member of their Congressional delegation.

MR. WALTON. Oh, yes, yes, although we were successful with Buffalo.

MS. FOX. Ultimately.

MR. WALTON. Boston showed you could be successful when they closed Lewiston without having to go through all that.

MS. FOX. Yes, ultimately.

MR. WALTON. But we would run into people within a District who would leak some of this stuff to the press, leak it to their representatives in the Congress, and then we'd have to go up to the Hill and explain why, yes, even though this looks like it's a relatively efficient office, in the grand scheme of things, you would get a bigger bang for the buck if this office didn't exist.

MS. FOX. That's just the political dynamic we dealt with.

MR. WALTON. Also, internally, each Reserve Bank wanted to have and be a "full service function" everywhere. That's why I think they are struggling today with that notion, because increasingly, as payments move to electronics, what do you end up having out there?

Certain Districts say, “We’re going to populate each office with a research staff, as opposed to consolidating the research staff,” and there are different models on how to do approach those issues. It begs the question whether it is time, at the centennial, to look at the structure of the Federal Reserve and maybe open up the Federal Reserve Act and change it to be a little more contemporary, more effective.

MR. HAMBLEY. I believe that we have been able to move toward with what I would call “Systemwide pricing,” in which the prices that are charged are less dependent on what’s going on in localities, and much more uniform across the System. We’ve been able to live with the decentralized structure as well as staff resistance to change, but somehow come out all right in the end.

MR. WALTON. Right. But there were some very practical reasons why we were able to evolve that way. What we saw when we had very dramatic differences in pricing across Reserve Banks is that banks, because their footprint had expanded, would say, “Ah! We’re going to go and talk to one of the Reserve Banks and find out what their prices are. We’ll go to another and say, ‘Hey, these guys are offering this!’” They’d game the system. And it’s inefficient to have volumes switch rapidly from one place to another place just based on price. So, over time, people got the idea that we’re all in this together.

MR. HAMBLEY. Yes, it wasn’t in their interest to continue to do that.

MR. WALTON. Right.

MS. FOX. That’s a perfect anecdote for the old days and the new days. When the System was constructed and when everybody was picking their machines and organizing their workflow, they were dealing with local banks. There were not interstate banks. There weren’t regional banks. There weren’t national banks. The market changed dramatically. And when you've got a structure that's predicated on the idea that all important things are local, and that changes, you can completely understand why managing it is really difficult.

MR. WALTON. Right. We also started focusing on this notion of, "We've got all of these different approaches to doing something, and we have these two fundamentally different hardware and software platforms. Is there a way to become ever more efficient by getting down to one?" In the backs of some of our minds, there was always this thought: "How can we streamline and make more homogeneous and more efficient our processes operationally, both from a hardware and software perspective?" Then Unisys Corporation provided us with an opportunity to take this another step. They came up with burning platform issue. They said, "We're going to stop supporting the software that half your banks use." And that was a big mistake on their part.

MR. HAMBLEY. That concentrated the attention. [Laughter]

MR. WALTON. Yeah, it concentrated the attention. And Unisys was the big loser, because we ultimately decided to go with IBM under the check standardization initiative. [Laughter] This also gets to this states' rights versus federal issue. There was a study done, the dual-vendor study. They were looking to see whether it would be better to go one way or the other way. And after they went through all their analysis and came up with a net present value argument that supported only one vendor, the Reserve Banks concluded, "We should keep two different platforms." And of course, that was nonsensical.

MS. FOX. What year was this?

MR. WALTON. This would be around 1997. We convinced the BAC that that was nonsensical. Then the Reserve Banks got religion, and we ended up with the check standardization effort. This was a $250 million project with $66 to $70 million of capital outlays. This effort ran from 1999 through about 2000–2001.

MS. FOX. Who was the head of the BAC?

MR. WALTON. Governor Mike Kelly was at the time.

MR. HAMBLEY. So all the Reserve Banks are moving to a common platform as a result of big capital investments. That made possible some further evolutions in check processing.

MR. WALTON. Right. At the same time, we were always doing payment research, because my background was in research, and facts are useful to inform a debate. In the payments arena, there are just not many facts. To address that, the Federal Reserve conducted a number of studies over time. There was one done in 1995, and then another one in 1996, and finally we did our 2000 survey. The wherewithal came from basically the Reserve Banks popping for a couple million dollars to do this, and we worked with the Reserve Banks, with the RPO on that.[9]

MS. FOX. The "Retail Product Office?"

MR. WALTON. The Retail Product Office. Guess what the study showed. The number of checks out there were much lower than what people thought, and check use has been declining at an increasing rate since the mid–1990s. So, back in the mid–1990s, we probably had the peak in the number of checks used. This was a tremendous revelation to everybody. And when you got it in black and white and in print, that research had an impact. I can show you speeches that people made in one year, and the next year; it was 180 degrees different in terms of what they were saying because the facts informed the debate.

[9] The 2000 survey was the first in what became the triennial "Federal Reserve Payments Study," which included surveys of depository institutions, electronic network providers, and other entities. The results of the 2000 survey are discussed in Geoffrey R. Gerdes and Jack K. Walton II (2002), "The Use of Checks and Other Noncash Payment Instruments in the United States," *Federal Reserve Bulletin*, vol. 88 (August), pp. 360–74.

That was a really good feel-good moment for me because I pushed this research and was not surprised by the conclusion. An awful lot of people around here are very nervous about coming to a conclusion about something in such a definitive fashion. But my intuition was that check usage is not as significant as they used to be, as the use of debit cards and credit cards have increased dramatically, and we were able to demonstrate that unequivocally.

The publication of the data changed the way the private sector and Reserve Banks thought about payments and payment processing infrastructure. Then it was: "Ah! What's the implication of this, particularly at this rate of decline?" And our subsequent studies showed where the rate of decline was increasing. That got us into the discussion of what brick and mortar do we really need? And because we were now on a standard check-processing platform, this could accommodate then the merger of operations across the system. In fact, by the end of this year, the Fed will be down to one location for processing checks electronically, and one location for processing them in paper form, down from 45.

MR. HAMBLEY. Besides your research showing the changing payments patterns and the accelerating decline of checks relative to other methods of payment, we were also seeing in that time significant cost recovery problems under the Monetary Control Act for checks.

MR. WALTON. That's right.

MR. HAMBLEY. That was another reason why we had to do something. I believe there was an internal debate in which Vice Chairman Roger Ferguson basically came to the conclusion the law is the law; and we have this principle that says check is a service whose costs we have to recover. We're not recovering the cost. What can we do to live with the law and abide by it?

MR. WALTON. Right. Because check services represented 80 percent or better of the revenue from Federal Reserve priced services, and where check was running into cost recovery challenges that effectively undercut all the priced services. At the time, the head of the FSPC (the Financial Services Policy Committee), Cathy Minehan President of the Boston Fed, wanted to approach the cost recovery issue in a very different fashion. Also until around 1999, the Retail Product Office was located in Boston, and then it shifted to Atlanta. The cultural difference between Boston and Atlanta is significant: one might say a less market-oriented view versus a more market-oriented one. Anyway, Cathy and Roger got into a significant discussion about how to respond to the cost recovery issue. She wanted to go to the Congress and tell them that we cannot meet our cost recovery objectives, and we're going to provide these services, and you need to give us dispensation on the Monetary Control Act. The Board staff collectively, I think, was united in the view that that was ridiculous. It wasn't going to happen. It was just trying to get us a pass from doing all the things that private sector businesses have to do every day. You have to make sure you've got efficient operations, and if that requires you to restructure, "right-size," whatever term you want to use—so yes, there was a lot of interesting conversations between Roger and President Minehan. Roger was a great chair of the BAC, and at the right time because we were doing a lot of very difficult moves in the System. And so politically, we needed to have a lot of spine to pull that off.

Check 21

MR. HAMBLEY. Another thing that happened was that the Board proposed Check 21 to the Congress; and Check 21 in a way layered more difficulties of the same sort on top of the market changes, the cost recovery challenges.

MR. WALTON. That's right.

MR. HAMBLEY. But the Board proposed and advocated Check 21 anyway because the Board thought it was the right thing to do.

MR. WALTON. Well, this is the challenge with laws and regulations, and technology and innovation. Technology and innovation moves ahead, and generally outruns the regulations and law of the moment. And our laws were written in a time in which people processed payments manually, and people had to present checks physically if they wanted to get paid on those checks. We had had conversations with the industry in the years prior, in the late 1990s, in which they were saying, "We'd love to be able to adapt technology to our processes, but we've got these legal impediments that preclude us from doing that. Is there any way we can work around this?" And ultimately, we'd have these meetings with the industry, with consumer groups, with payment legal experts, with people from the System, other government agencies. And for a couple years, we would meet, and we ended up crafting what was called the Check Truncation Act, which was subsequently changed to Check Clearing for the 21st Century Act, because the legislation was easier to get passed with a forward-looking name.[10]

MS. FOX. Marketing!

MR. WALTON. Yes, our congressional colleagues came up with that name. [Laughter] We couldn't get any traction on this idea. I went out speaking in the hinterlands for a good 18 months pushing this notion. We'd have these special meetings in different regions of the country with bankers and other payment system participants to socialize this idea. I would go, and Heatherun Allison or Stephanie Martin from the Legal Division would accompany me. Sometimes as I'd pitch this idea, and I felt truly like I was wandering the wilderness. You could

[10] The Check Clearing for the 21st Century Act (Check 21) was designed to enhance payment system efficiency by reducing legal impediments to processing checks electronically. Check 21 has enabled banks to send checks electronically (rather than in paper form) to banks with which they have agreements to do so, and to send substitute checks to banks with which they do not. As a result, the nation's interbank check-collection processes have become almost entirely electronic, and the electronic methods have enabled banks to offer new customer services. Check 21 is implemented in subpart D of Regulation CC.

get an enthusiastic audience, but it wasn't getting any traction on the Hill. Then we had 9/11, and everything changed because all air transportation was grounded so no checks were moving.

MR. HAMBLEY. All the airplanes that you used to carry checks.

MR. WALTON. All the airplanes were down. The checks weren't moving. Float was going through the roof, which turned out to be a good thing because it was another way to provide liquidity to the banking system, although in an unexpected fashion. Another tool for monetary policy was found. But that got people's attention. Then, of course, the Congress wanted to do something to show that they were responding to the terrorist attacks. Eventually, it did get passed. It was one of the few pieces of legislation that was unanimous in both the committees and then in both Houses.

MR. HAMBLEY. But there was some internal resistance. Some people within the Federal Reserve System thought we might be cutting our own throats in terms of check processing.

MR. WALTON. Oh, certainly. The people living in the paper world didn't want to see the world go all electronic.

MS. FOX. When you were out talking with people for those 18 months or so, to whom were you talking?

MR. WALTON. I was speaking to bankers, consumer groups. We had representatives from all and sundry.

MS. FOX. Were you invited to speak at industry meetings?

MR. WALTON. Actually we set these things up. We asked the Reserve Banks to set up meetings so that we could go around and promote this idea. And I spoke at the banking and payments conferences that were held annually.

MS. FOX. Bankers reflected their customers' preferences in those meetings, and many customers were not willing to give up the paper check.

MR. WALTON. I would say that Newton's First Law is what is the most difficult: "A body at rest stays at rest." Jeff Yeganeh (Senior Financial Services Analyst in RBOPS) can give you the math on it, but by and large, inertia is a tough thing to overcome. You would hear all these stories about people reticent to give up their paper. I would submit that it was probably a single digit at best, and maybe a low single-digit number of all the population, that cared about getting their pieces of paper back.

MS. FOX. But they were noisy.

MR. WALTON. Some were, certainly. But by and large, this transformation to go from getting the paper check back to pretty much an all-electronic world, which is pretty much where we are, has worked well. We started this thing in 2004, and now that we're in 2009, by the end of this year, I'm told that over 90 percent of all deposits and presentments will be made electronically. And it might even be closer to 100 percent by the end of the year on the deposit side.

MS. FOX. Did we have any role in the government's decision to require electronic deposit of government payments?

MR. WALTON. Actually, when we started, there was no government requirement. They kept backing away.

MR. HAMBLEY. In the Congress?

MR. WALTON. There was that law back in 1999, the "Improvement Act," whatever it was called, which looked like they were mandating that all new beneficiaries had to take government benefit payments electronically. There was a hue and cry raised by the noisy bunch, and the Congress backed off.

Staff at the Social Security Administration and Financial Management Service (FMS), the paying and collection arm of Treasury, were very conflicted because as retirements occur and Social Security payments go up, even though they have an 80 percent rate of people taking electronics, they're going to have ever more people requesting paper, and they just don't have the staff or the wherewithal to support that. They have been trying to work this out. I believe the latest Social Security Commissioner, or this most recent past one, and the folks over at FMS, have been moving towards doing that differently. When you would go in to sign up for Social Security, the script they would read would talk about getting your check. They've changed that so it says, "You will receive your payment," and then there is some fine print later on that talks about, "If you don't have a bank account, then the funds will be provided in such a way that it can be electronic." One of the ways that they are countering people who don't have accounts is to say, "We'll give you a debit card. We will fund your Social Security that way," so that you can go electronic. People have gotten a little more creative in how they approach that. But when you have something in place, you have a lot of vested interests, and it's very difficult to change it in a short period of time.

The reason we have made significant progress with moving the paper into electronics is that the bankers see the significant cost savings for them. Account holders, in their ubiquitous monthly statement, get this fine print that said, "From now on, you're not going to get your check back. We're going to give you an image statement of it, or a descriptive statement." It's going the way that the credit card statement process went. Back in the day, you had these little pieces of paper. You got them back in the mail. You'd match up with little pieces of paper that *you* saved—only if you're anal retentive—and you'd match them off with the paper that came in the monthly statement. Then they discontinued sending you the actual pieces of paper; you saw a photocopy of it. The photocopy was the exact same size as the piece of paper. Then it became a descriptive statement because the photocopy was just an unnecessary cost. People just want to know when did I spend my money, to whom did I give it, and for how much. That's what you're seeing with checks increasingly: a descriptive statement. And you'll just get the images if you even get that these days.

MR. HAMBLEY. Before we leave this, the nature of payments changed, and we were having our cost recovery challenges, and Check 21 was passed. Suddenly, we had a huge infrastructure that was the wrong size to support what the check business was going to be needed in the future.

MR. WALTON. That's right.

The Check Restructuring Project

MR. HAMBLEY. You've already alluded to the fact that we initiated the process in effect to consolidate and downsize. You were very involved in that. Talk about any difficulties you encountered in picking what sites were going to be closed and when, and in getting people to agree that there might be some principles that would guide this.

MR. WALTON. Ultimately, this thing got called "The Check Restructuring Project." But it began back with this Omaha/Des Moines study that we did, and then there was another one: the Charleston, West Virginia study. And then one other. Then the RPO decided that it was time to step back and take a look at the broader picture. And, of course, we were working very collaboratively with the RPO at the time. They realized that, with any difficult topic, it's good to have a consultant come in [laughter] so you can always point the finger at the consultant.

The Fed hired Accenture to come in to come up with "a model" for determining when and how these consolidations should take place. It was a function of distance and check volume, and the ability to move these volumes from point to point.

Once we got that set up, there were some obvious places where there was so little volume, and you could serve that community without degrading availability—which is the service of most concern to most bankers—too much. Some offices are in the middle of nowhere. For example, El Paso is a far piece from anywhere, and there are relatively few people and relatively few checks.

As a result of some of our consolidations, you have seen a private sector response. Some of the clearinghouses that used to exist before a Fed office opened in some locations came back into existence. But, by and large, the banks have embraced the electronics to obviate the need to deal with the paper altogether. They've also been restructuring their physical plant to reduce it. Bank of America used to have some ungodly number—30 to 40 locations—and I think they're down into single digits now. It was the same with Wells Fargo, Bank One, and the like.

But, yes, there were significant difficulties, as you can imagine. Everybody is also thinking in the back of their mind, "How many are going to be left standing?" We had to present this plan to a committee of the Reserve Bank chairmen that met annually. Pete Peterson, the Chairman of the New York Fed board of directors, was generally supportive from a business perspective, but from a New York Fed perspective, he wasn't so enthused about the implications. But eventually, they all got on board.

We started off slowly. We had four or five consolidations. Then we set up a process where, every spring, we'd do this analysis and identify which other offices would be affected. Basically, it was a function of their volume decreases. Once you fell below a certain threshold, you got thrown into the job jar to get consolidated with another office. We tried to minimize the number of times a Reserve office's checks would have to move from one operations center to another operations center. If we knew, for example, that a particular office was going to have to be consolidated, and the office it would likely be consolidated into was going to be subsequently consolidated, maybe we'd just go straight to the endgame on that.

The original plan was to maybe have four to six operations centers in maybe 2010, 2011–12. The endgame was pretty nebulous. But given the pace at which the Check 21 was embraced by the industry and how rapidly people have adjusted to not receiving their checks back, as well as the continued decline in the use of checks because of credit cards and debit cards, we were able to move that up much quicker. And like I said, by the end of this year, the Fed will be down to two sites. I would have never thought it would have gone that fast, to tell you the truth. I was thinking it was going to take until early next decade.

MR. HAMBLEY. Earlier, you had mentioned this downsizing or consolidation had rather traumatic effects on the people that worked in the check business. It must have been quite a serious challenge to the Fed as a paternalistic employer—as you described it—to manage this process in a way that the Fed got where it needed to go to get back to full cost recovery, and at the same time to keep as much faith as possible with people that had made careers at the Fed. Was that process handled well?

MR. WALTON. Yes, I think we did a good job in that regard. Changing from the organization we once were—a paternalistic, cradle-to-grave kind of notion to "we've got to compete and be as aggressive in cost cutting as our competitors"—was a difficult paradigm shift. When we had closings, we would offer folks the opportunity to relocate, but few did. We also had severance packages. We offered extended healthcare benefits. We offered early outs and buyouts. The transition was fairly smooth when all was said and done.

Members of the Congress would come chat with us about this because they were concerned about the impact on their communities of losing an employer. But, by and large, it went well. I don't think we ever had much negative feedback—pushback or blowback from that.

MR. HAMBLEY. Employees were not kept in the dark. As soon as decisions were made and could be seen to be on the horizon—that an office was going to go—they would know virtually at that moment.

MR. WALTON. Right. We did an excellent job communicating this. In part, that came about because, when we first started working on this, there would be some leaks as to what we were thinking of, and then we'd immediately hear from different congressional delegations. We ended up having standard letters to send back, which I know you spent a lot of time on. We vetted the heck out of those. But when we kept it kind of in a black box, and then bang, here's the notification and everybody would get informed, it kind of curtailed that issue, which was very helpful. You didn't want to get in a debate with every congressional delegation as we went through the entire country closing down sites or consolidating sites.

MR. HAMBLEY. Maybe it was fortunate for the Federal Reserve that it wasn't an appropriated agency.

MR. WALTON. Oh, absolutely.

MR. HAMBLEY. After we told members of Congress the business need for the closings and explained what we were doing to cushion the blow for employees, they didn't think it was something they should intervene in. Or if they did, they didn't have a lever to do so.

MR. WALTON. Yes. Also, we ended up going through the dot-com bust, and a little bit of downturn. And when we were measured by our own employees and by the Congress and others on how we dealt with the downsizings compared with what was generally industry standard, they saw that we performed at a higher level. There was all this other commotion going on in the economy, so people could see, ah, that we did it, and we did it well relatively. In that sense, could we have done it cheaper? Probably. Would it have been noisier and more politically costly? Probably. I think on balance, it worked out well.

MS. FOX. Those were the years when Chairman Greenspan and the Board members talked about how uncertainty about employment was having a dampening effect on inflation.

MR. WALTON. You had huge outsourcing. Greenspan's thesis was you had all the labor coming in from China and India into the world market effectively, courtesy of outsourcing and relative costs, so export of relatively cheap labor costs attenuated inflationary effects.

Expedited Funds Availability Act

MR. HAMBLEY. The Expedited Funds Availability Act (EFAA) was pretty important for payments issues. What were the central features of that act and practices in the check world that led to that law?

MR. WALTON. The EFAA, which was passed in 1987, had a long legislative history. There were congressional hearings related to funds availability as early as the late 1970s. Banks sometimes treated their customers poorly; when customers made their check deposits, there would be sometimes long and variable lags before funds would be made available to those customers. This was a source of contention, and consumer groups kept raising this issue to the Congress. The Board got involved with this a number of times. Banks would argue that the way the system existed, because it takes a long time for some checks to be returned unpaid, and to minimize banks' losses associated with those returned checks, banks needed the latitude to vary when they would make their funds available to their customers. Some small number of banks were very egregious. Unfortunately, some of those guys existed in Washington D.C. And they did it—I don't know how apocryphal this tale is—to a congressman's kid who was at school, and that became the catalyst for change on funds availability.

Suffice it to say there needed to be a little more structure and standards in terms of what was going on with check processing. The EFAA was an attempt to balance the need for banks to have the time to be able to protect themselves from fraud and customers' need to have timely access to their funds.[11] The law gave the Fed the latitude to change the check clearing system, and so we made significant improvements in return times. The return time relates to how long a check takes, after you deposit it in the bank, to go to the paying bank and, if the paying bank has any problems, to go back to the bank of first deposit. This roundtrip time period is what's relevant for any discussion about when funds should be made available to people.

We've come under criticism from various members of the Congress over the years that we haven't improved funds availability further. But until you get to pretty much an all-electronic world, you really can't do that. I suspect within the next couple of years, there is going to be another go at trying to ratchet down the hold periods that exist today. The EFAA defined what a local check is, what a non-local check is, and the time periods that banks could withhold funds availability from customers.

[11] The Expedited Funds Availability Act (EFAA) addressed concerns about the lengths of holds banks were then placing on checks deposited by their customers. The EFAA established maximum permissible hold periods for checks and other deposits. The Board's Regulation CC implements the funds-availability and disclosure provisions of the EFAA in Subpart B of the regulation.

The EFAA also gave the Board the authority to regulate the nation's check-clearing system more generally. Pursuant to this authority, the Board adopted rules to speed the return of unpaid checks. These rules reduce the risk to depositary banks of having to make funds from check deposits available for withdrawal before learning whether the checks have been returned unpaid.

MS. FOX. That episode is a pretty simple and good illustration of how the Fed's technical understanding of a problem is so important to influencing the legislative outcomes. Because to members of Congress and to consumer groups, it was a very simple problem: If I deposit my $500 today, I want to spend my $500 tomorrow.

MR. WALTON. Right.

MS. FOX. And the Congress was ready to write a law that said, "Banks, you have to give access to the $500 tomorrow," until you and your colleagues spent a lot of time educating the Congress about exactly how the system works.

MR. WALTON. Right, the arcane structure of the check clearing system. That does reflect one of the benefits of the Fed with regard to the payment system and to other activities: We know a lot about things that generally are not well understood. The payment system is one of those systems in our economy that as long as it works well, nobody thinks about it. It's like plumbing. But when it stops working and functioning well, then everybody has an issue with it.

This leads into events like 9/11, Hurricane Katrina, and other disasters. Our job has evolved to the point where we make sure that it works and works well and works smoothly. We take whatever steps are needed because sometimes you don't have the banks stepping up and doing the right thing, because increasingly, they're more concerned about what their shareholders are going to say if they take the lead on an issue and it costs them money. During 9/11, our division director and Governors had to cajole a number of the major banks to stay open, to function payments, to keep credit flowing. Increasingly, we're looked upon for leadership whenever some exigency occurs. And they follow our lead. Sometimes it requires maybe a little bashing of them, but that has been successful.

When a problem is identified, sometimes we are a little bit slow, in part because we need to develop the facts, and facts are difficult with regard to payments—for example, the whole remotely created check issue, where you had an increase in telemarketer fraud or other types of fraud using the payment system. Specifically with checks, there was no easy way to quantify how significant that was. And when you have a system that's pushing through tens of billions of checks for trillions of dollars, a little bit of fraud, a little bit of loss is expected. No system works perfectly. And to improve a system so that it worked perfectly would make it too costly.

We'll get into the ACH at some point, but there is that kind of focus today on trying to make the ACH system more like the credit card system, with all the checks and balances that they have in there to prevent fraud and attenuate the possibility of nefarious actors abusing it. But the ACH was set up basically as an electronic check, and it was very cheap. It's just electronic payment information sent between known and trusted counterparties. And what has happened is they're trying to expand the use of the system increasingly with unknown counterparties, and so there is a greater possibility for fraud, and that's created this knee-jerk reaction that the same sorts of protections that other electronic systems have are needed. The costs for such measures and the price differential for credit and debit card systems make comparisons to the ACH nonsensical. For every one of the debit card and credit card transactions, credit and debit card systems assess a fixed fee for every transaction plus a percent—an ad valorem pricing—of the transaction amount. It's a whole different ballgame when you're talking about an ACH transaction that is priced at a few mills (usually two to four mills per transaction). It's a very different payment system.

The EFAA was the consequence of some number of bad actors in the banking system.

MR. HAMBLEY. The Federal Reserve had tried to get the banking industry to police itself, and limit holds. And, basically, the failure of that effort led to the law.

MR. WALTON. Right. Self-governance within an industry is only going to be as effective as its members' commitments. And if you have bad actors that don't care about the industry and only care about the immediate success they have in gaming the system, self-regulation does not work.

ACH

MR. HAMBLEY. In 1992, you went to Bank Operations as manager of the ACH section. In 1984, you had urged consolidation of the Fed's ACH business; at that time, there were around 40 Federal Reserve ACH sites.

MR. WALTON. Right. The Reserve Banks had again set up a decentralized structure in each of the payment functions. And it was increasingly an electronic system. In the early 1980s, there were still paper listings and tapes that had to be flown around to the various offices. But you could see that you could structure it so that there would just be one processing center. I wrote a memo back then saying, "This seems like a no-brainer!" Then in the mid–1990s, they consolidated it. [Laughter]

I left for a while, and came back, and it hadn't changed much!

MR. HAMBLEY. Were you instrumental in anything that happened?

MR. WALTON. I eventually came back, but at the time, recall also that you had all the automation at each of the Reserve Banks that was, again, decentralized, and they did their own thing. And this is back where they had the issue about centralizing the computing for the System (except for the Board's research division) and where the Federal Reserve Information Technology (FRIT) came into existence. Once people recognized that was the more efficient and effective path to go down, then all these electronic operations could be centralized. For example, Fedwire located in New York; the ACH, wherever the Retail Product Office was located (it migrated from Boston to Atlanta) because they run the operations out of the FRIT center.

MS. FOX. I am curious about our management practice of assigning a Reserve Bank functional control over an operation. Do you know the history behind that? During the course of your career, did you find that to be a useful way to organize the payments products function?

MR. WALTON. It probably isn't the most efficient way. As the Fed started to organize along more functional lines, recognizing that computing was centralized, the Fedwire was centralized, and ACH was going down the same path. Then the Reserve Banks said, "How should we organize ourselves to manage this? Now this approach cuts across all the Reserve Districts. And I have a responsibility to my board of directors, if I host something, to manage it, to oversee it, so how is all this going to work? Because I have my own legal entity that tells me I am autonomous from all these other entities that comprise the central bank. How are we going to work this out?"

So they came up with this scheme, I think it was the Pricing Policy Committee (a precursor to the Financial Services Policy Committee). Eventually, it agreed upon the product offices structure. They said, "Everybody submit a bid for these functional areas. We'll have a group to evaluate, and then we'll award the bid to whoever looks like they are going to do the best job." It was based on the technical expertise, their ability to understand the issue. I suppose there was some cost element to that.

MS. FOX. It was a contracting process just for an internal reorganization?

MR. WALTON. Right. At one time, Minneapolis managed the Electronic Payments Office. This is when Funds and ACH and Net Settlement and Securities were all bundled together. Check and Treasury Check was in Philadelphia. And all of the operations for Fedwire were in New York largely. Although all the centralized computing takes place at FRIT. The Cash Product Office was in Philadelphia initially, now it is in San Francisco.

MS. FOX. Those contracts were re-bid, essentially.

MR. WALTON. Yes. But then they got to the point where they did not want to re-bid all Product Offices. They re-bid the RPO, and they reorganized it. Check and ACH came under the purview of the Retail Payments Office, and that was let out to Boston in 1994, then Atlanta in 1999. New York has always had the WPO (Wholesale Payments Office) ever since they went down that path.

MS. FOX. Has Atlanta re-bid?

MR. WALTON. Yes, but they've decided that with the impending retirement of Pat Barron, First Vice President of Atlanta, to decentralize the management of the RPO.

MS. FOX. They're not going to re-bid it?

MR. WALTON. Personalities and skill sets mean a lot in these businesses. I think the System has generally come to a gentlemen's agreement. I don't think there's anything explicit in there. I don't believe they're going to be re-bidding these things. You're just going to have basically Cleveland and Atlanta taking care of the whole retail side. We've become more decentralized in how we manage certain aspects of the Product Offices. For example, in Minneapolis, Scott Dake and his staff, manages all the software programming for Check. There are folks that deal with the day-to-day operations, Bob Price and John Jezwell and their staff in

Cleveland run the day-to-day Check operation. The “senior management” of the RPO is in Atlanta, but Kansas City has some ownership, so they are on the Atlanta payroll.

It’s gotten to be a lot more decentralized, and, in some sense, probably more comparable to what the private sector does. But it has led to some interesting reporting relationships. Scott Dake is in Minneapolis. When the Board conducts an operations review of the RPO, particularly of the software programming function, the Atlanta Bank and their board of directors will receive a copy of whatever the findings are. But the Minneapolis board of directors will receive a courtesy copy of the report. The Reserve Banks have service agreements between the respective product offices and the other Reserve Banks that have staff that work for the various product offices. These service agreements are signed by all the Reserve Banks, so there’s legal cover. A lot of this was at the behest, I believe, of the New York Fed legal staff, where we probably have way more lawyers than we need.

MS. FOX. It’s a complex system.

MR. HAMBLEY. We were discussing ACH. I want to draw out the creative and new ways that it is used. We had a basic service, and in recent years there’s been a lot of piggybacking on that service. I’m not familiar with all of the products. I am aware of Accounts Receivable Conversion, and things like that. Could you talk more directly about how the ACH evolved?

MR. WALTON. It started off basically making government credit payments, payroll payments to government employees. The Air Force was one of the first users of this system. Then people recognized that they could make recurring payments, so the insurance companies were very interested in this. Insurance companies were big users of these remotely-created checks back in the day. They didn’t call them that at that time, but that’s how they would initiate the payments. You have your monthly life insurance payments. They would originate this check for you, and money for your insurance premium would come out of your checking account. Then they moved it to this electronic fashion, where they would create these files. Initially, it was done on tapes; now it's all done via transmission to various switches. That's effectively all that the Federal Reserve is.

By the way, the New York Fed had an interesting relationship with the New York Clearing House at the onset. This New York Clearing House always had its own ACH. In fact, when the Fed would upgrade its software, I believe our ACH 1976 software, and then it was ACH 1982 or 1984, we would give the New York Clearing House this software to run on their system so it'd be compatible with ours. The software would separate all payments that were for the Clearing House banks and depository institutions and route those payments to them. But the New York Fed would do [laughter] all the accounting and settlement related to those payments. It was a unique relationship. That has since evolved, so that the Clearing House is a standalone private-sector ACH operator, and we are an ACH operator. Visa used to operate one, and the Arizona Clearing House used to operate one, but because it's an economy-of-scale business, both Visa and Arizona departed the scene, in the early 2000s, something like that.

Now we have these two ACH operators. But again, the ACH started off as just transactions between known and trusted counterparties. But as we got into late 1990s, some merchants in the Philadelphia area began using the ACH in different ways. In a sense, they were front running the use of the payment system—using a payments infrastructure in an innovative way. People will use whatever exists however they see fit, irrespective of whatever body of law is out there. There was an absence of law and regulation and rules, because basically the ACH is governed by a private-sector rule set, not a governmental rule set. So these merchants would take checks in, and they would just enter them into the ACH system. You'd pay a merchant by check; they'd convert it into an ACH and collect it. Then people started saying, "There's no rule set for that, but maybe that's not such a bad idea for collecting checks." And then other people would observe operational difficulties that occasionally occurred such as, "We had this airplane go down, and they destroyed an awful lot of checks that were on that plane. Could we use the ACH to collect those payments?" Because people had to keep copies of the checks—otherwise, there's fiduciary and liability issues—you started to see different applications emerge: the XCK entry (destroyed checks), the POP (point-of-purchase), the ARC (accounts receivable conversion), the Web (Internet) standard entry class codes. All of these are three-letter acronyms for the various types of ACH payment transactions. And the ACH got a little crazy in the sense that somebody would come up with an idea to make use of the ACH, and they'd give it a name, and they'd have this whole process and protocol for that. Pretty soon, they ended up with 30 of these classifications. Now I think they're stepping back and saying, "Wait a minute. What are we trying to do here?" This is the whole issue with payments in general. A payment is a payment is a payment, irrespective of the payment instrument that is used and the collection mechanisms for those payments. You want to pay somebody something; how can we do this? That's why I think you will also see changes in the legal system to acknowledge this fundamental aspect of a payment. And the distinctions between whether it's a debit card, a credit card, a check, an ACH will, by the end of next decade, be resolved. That's my thought on that. It's going to take a good amount of effort, but I think we're going to be forced to rationalize the payment system's legal and regulatory framework. People don't know today. They write a check, and it may come back as a check, a substitute check from Check 21, it may be an ACH, it may go through a debit card, a credit card system. There are all sorts of ways that you can use systems. And people don't really care so long as the payment that they wanted to make gets made and there are no problems.

Of course, it's when there are problems that the differences in all these mechanisms matter because there are different rights for each. If it's a regular check, you have roughly two weeks from the time you open your statement to report a problem to the bank. But if it was converted under Check 21, you have 60 days. If you had it converted under ACH, you have 45 days. There are all sorts of arcane reasons, not apparent to the layperson, why these rules exist the way they exist. But if you go through how each of these got developed, it makes perfect sense.

MS. FOX. It's the legacy of the technology developing, the needs developing, and the legal definitions don't catch up right away.

MR. WALTON. Right.

MR. HAMBLEY. Regarding ACH, I believe there was an issue about the Federal Reserve competing fairly in pricing. At some point, we took some action to level the playing field, with the end result that we ended up not dominating, but basically sharing the market with the remaining private player. What was that?

MR. WALTON. The Federal Reserve had always taken the position that we were the only operator. Although you had these clearinghouses—Visa, Arizona, EPN, New York Clearing House—that's what they call their ACH group—we would treat them just like another originator of a payment or a receiver of a payment, and we would bill them appropriately. That approach did not acknowledge their network and the depository institutions that participated on their network. This issue went through the Fed's public comment process and clearly the Reserve Banks didn't want to go down this path at all, and I think it was mainly the Board staff that saw the merit of the argument: "You've got a network. There's benefit to that network. We're receiving some value for that; we should pay you for that."

Then they came up with this private-sector operator solution, where we changed the rules of the game and defined what a private-sector operator was. You had to have X number of participants because you didn't want to just give this price break to a correspondent bank, for example. And you had to have so much in the way of settlement. I can't remember all the details.

MR. HAMBLEY. But if you qualify as a private sector operator?

MR. WALTON. If you qualify, then you would get a different price than if you were a depository institution. That worked out fairly well, the New York Clearing House being the only other competitor out there in the ACH arena. It tends to have only large bank customers, but then the large banks tend to be the ones that originate most of the transactions, and it's the smaller institutions that receive those payments. The Fed tends to have the receiver base; the Clearing House tends to have the originator base. We've got all the banks on our system, but the larger banks do find it more cost effective to originate their files through the New York Clearing House system. But the large banks have links with both systems for contingency and backup processing purposes. Since 9/11, that's become a much more important consideration for banks than it had been prior to 9/11. They were thinking that they didn't need the Fed at all. Then after 9/11, they rethought that position, recognizing that having two processing platforms is better than having one. So now, I believe it's roughly 50/50; it's something like that, within a few percentage points, in terms of the market share out there. I forget what we're up to in the number of ACH transactions—14 or 15 billion, something like that? Maybe it's more now. The growth rate has been robust. A lot of the ACH growth in recent years has come from the conversion of checks into ACH transactions.

There is this continuing discussion about how to make use of the payment mechanisms that currently exist to make the overall system more effective. For example, there was a big conversation when we were going down the Check 21 path of converting paper checks into an image, digitizing that, and then sending all that information along, as opposed to just capturing the relevant payment information off the check and using the ACH platform to push the payment information through. Given the relative cost structures, that seemed to make sense, but the legal and regulatory framework that underlie each payment type precluded that. For example, with an ACH transaction you have to have people's permission to process it and you don't quite have that in every ACH payment origination presently. Whereas, with a checking account, you give your permission effectively along with the terms and conditions, when you sign up for the account. Now clearly, banks could do that, but they'd have to change the terms and conditions for their customers. It would be a sea change for them, and it would be a fairly significant cost. But that's something people have been talking about, especially what do you do when we get down to the last few percent of depository institutions who don't want to process paper payments electronically and they are remote institutions? How do we best accommodate that "last mile" issue, in converting payments to electronics? ACH may be part of the solution there. That's an ongoing discussion that the industry is having.

The Rivlin Committee

MR. HAMBLEY. Periodically, the Fed thinks about its overall role in the payment system. One of those efforts was the Rivlin Committee in the mid–1990s. What did that committee decide?

MR. WALTON. With the MCA, there was a discussion about what the Fed's role should be in the payment system, and we saw the consequence of that, and then again in the mid–1990s. Vice Chairman Kohn has suggested probably sometime around 2011, 2012 might be another time—in a speech that he gave to the Western Payment Alliance two years ago in the summer—that that might be another time to revisit the issue. The Rivlin Committee looked at the Fed's role and concluded that there's a role for the Fed in the wholesale payments arena.

MR. HAMBLEY. You mean Fedwire?

MR. WALTON. Fedwire and securities services. Some would suggest that the private sector could take on those roles. For example, Ed Green, now at Penn State, would argue that the only role the central bank has to play in the payments arena is to provide a settlement function. But given the turmoil we've seen of recent, some might question that.

Anyway, the Rivlin committee took it off the table and only looked at retail payments. This was a System committee headed by Alice Rivlin, but the committee never got the full Board to vote on its report.[12] There was a lot of dissention about the findings of this report. Alice Rivlin wanted to mandate that we go to electronics right then and there with Electronic Check Presentment, ECP, as it was known at the time, and preclude market forces from determining the future direction of payments processing. She said, "This is the outcome we should shoot for, so we should just mandate that." That was very antithetical to Chairman Greenspan's view of the world. But he was buddies with her, so he couldn't tell her "no." We had this one Board meeting in which Clyde Farnsworth, the division director of RBOPS, in probably his finest hour, in my estimation, argued against the Rivlin committee report in its initial form, and Greenspan

[12] Board of Governors of the Federal Reserve (1998), *The Federal Reserve in the Payments Mechanism*, report of the Federal Reserve Committee on the Federal Reserve in the Payments Mechanism (Washington: Board of Governors, January 5).

said, “Well”—and after much discussion, it [laughter] got kind of heated. Clyde did a great job, and Greenspan suggested that perhaps staff could go and discuss these differences, and then come back.

But the matter never came back. The report that came out said the Fed should stay in the retail payments business, but we should be explicit in enhancing its efficiency and effectiveness and look to technological innovation to lead us there. And we should also work more collaboratively with the industry to assure that we could move the payments industry to more cost-effective solutions.

MS. FOX. Taking everyone’s point of view and presenting it in some form or fashion.

MR. HAMBLEY. But it was Rivlin’s report, and she wanted to mandate electronics. Why didn’t the report say that?

MR. WALTON. Because Greenspan wouldn’t let her; he was very persuasive. Also, the Reserve Banks did not support that view. We did a huge amount of work. We went out and literally calculated market share of all the major payment system providers in the country. And we did this on the fly. We have maps in that report that color coded what our market share was and the market share of different participants, whether they were clearinghouses or in the check business, in the ACH business. That research was based on a lot of seat-of-the-pants estimates because there were no good statistics on market share for payments. We could only get what we could get from various market participants. And because a check can go through many channels, you have a significant double counting issue. So methodologically, it was very messy, but I thought it reflected reasonable results. If we were consultants, we would’ve been paid multi-million dollars for that effort. [Laughter]

MS. FOX. Rivlin was reasonably satisfied with that softening of the mandate. But the other big issue at hand was whether the Federal Reserve and this committee would ever consider saying we should not be part of the payments business. That generated all kinds of political heat.

MR. WALTON. That's right.

MR. HAMBLEY. It was also political because of the small bank constituency; they wanted to rely on us rather than on correspondent banks.

MR. WALTON. That's right. They had these forums where they would go out and talk to bankers. Given our history with the large banks and the acrimony about anything the Fed did in the early days of pricing, it was surprising that they believed that the Fed had a role in the payment system. The small banks believed unequivocally that the Federal Reserve should be in to protect them against the big guys, because if it's only the big guys, the small banks would get screwed. The large banks would find all their good customers and take them from the small banks, because the large banks can data mine all that payment information.

MS. FOX. Those were the years when the Post Office analogy was used a lot: the reason for the Fed and the reason for the Post Office is so that remote users would get service.

MR. WALTON. Right.

MS. FOX. It's a market failure, in a sense: that if it were up to the private sector, it's too expensive to provide service to remote users and they'd be left behind.

MR. WALTON. Right. The counterargument to that was there was technology there to accommodate remote users. But they would have to change. And of course, they don't want to change.

MS. FOX. Or you'd have to make investments anyway.

MR. WALTON. Yes.

MS. FOX. There would be some level of investment that would be required to employ the technology.

MR. WALTON. Right.

MS. FOX. That was an interesting period, and a unique thing for the Board to do, creating this research effort, and then joining that with town hall meetings all around the country.

MR. WALTON. We've done a lot of outreach over the recent years, whereas, before, we would've just indicated what we're going to do and do it. I think people found, probably from practical experience, that sometimes we didn't know what we were talking about, and [laughter] we really did need the input from the industry, consumer groups, legal experts, the whole panoply of folks out there that had an interest in payments and find out what they had to say. We started listening more. Roger Ferguson was also really big on this with the PSDC (Payment System Development Committee). After Roger left the Board, that got folded into the PSPAC (Payment System Policy Advisory Committee). There was just an awful lot of need to reach out and understand what was going on, because we're in a significant time of transition, and that's the time you want to make right decisions, because you're talking about billions of dollars in capital investments that would have to be made. And capital investments made under uncertainty tend to create problems for corporations.

MS. FOX. And the PSDC consisted of?

MR. WALTON. Governors, Reserve Bank presidents, and a couple of first VPs.

MS. FOX. And the idea was?

MR. WALTON. To evaluate how the payment system could be improved and work collaboratively with the industry to achieve that improvement. That was the result of the Rivlin Committee report. There was this more proactive outreach that took place. And we had many meetings in which we discussed different issues, like the issue of standards. How should standards be crafted? What should be the appropriate role of the various participants? Right now, the standards world is very messy. It's basically one where all interested parties get together to discuss a standard or changes to a standard and need to achieve a unanimous vote before a standard is accepted and implemented. It takes a long time to establish standards. Then if you've got different banks or different organizations that came up with proprietary solutions that don't conform to the standards, they're going to try to make the standard consistent with their proprietary system. Then you had others that wanted a more open system approach.

So that was one issue. Another was data security; data privacy was another forum. We did ECP, the whole notion about what does technology offer in moving things to an all-electronic world? There were a number of these sessions, and some of these would include 100 to 200 participants, and some would just be maybe two dozen people. So that's probably worth a read and a mention somewhere.

When I think about what we were trying to do, you want to provide some context and some conclusory material for interested parties in 2013 and beyond, where they can say, "Ah! Here's how payments develop, and here's some of the work that supported why they got to where they got to." You may want to reference all of these studies, reports, meeting and the like to provide context and the thinking that took place as the Fed and the industry grappled with how to manage change in the payments system. I don't know. It seems like that would help.[13]

[13] Board of Governors of the Federal Reserve System (2018), "Fostering Payment and Settlement System Safety and Efficiency," chapter X in *The Federal Reserve System: Purposes and Functions* (Washington: Board of Governors), pp. 118–51.

Y2K, 9/11, and Hurricane Katrina

MR. HAMBLEY. In the beginning of the 2000s, and through the middle of this decade, three serious challenges faced the economy: the century date change, Year 2000 (Y2K); the September 11, 2001 (9/11), terrorist attacks in New York and Washington; and Hurricane Katrina in 2005. Talk about how the Fed performed in these three crises.

MR. WALTON. Upon reflection, I think a lot of good came from Y2K. People were trying to sort through the issue that the software programs and coding didn't allow for "2000" to be recognized. That was probably a lot less of an issue than most people thought, but it got a lot of the industry to rationalize their software systems. They made significant improvements, and a big productivity pop resulted from it.

During the time, all sorts of potential disaster scenarios were described. We made this a supervisory issue for banks, and everybody took it very seriously. And the night of New Year's Eve, [laughter], a group of us were in a command center. Every division had its place, and you had reporting schemes worldwide. It was quite something. There were sharpshooters on buildings. There was all sorts of nonsense going on.

MS. FOX. The sharpshooters were there because the President was coming down to the Mall to watch a concert and fireworks. It was New Year's Eve, after all.

MR. WALTON. Greenspan showed up in his tux with his wife, Andrea Mitchell. He was on his way to wherever. He walked through, and he was going out to the balcony. We were told, in no uncertain terms, "Do not go out on the balcony." Some people had to haul him back [laughter] to prevent him from going out there. Nothing like having the Secret Service shoot the Chairman of the Board!

MR. HAMBLEY. In any case, with Y2K, the dog didn't bark in the night.

MR. WALTON. Oh, that's for sure. You had a lot of people that spent a lot of hours on something that came to naught.

MS. FOX. At the time, everybody's fear was that some disruption or glitch or whatever would be blamed on the regulators and the oversight bodies.

MR. WALTON. That's right.

MS. FOX. There were a couple of very vocal members of Congress who inspired an enormous amount of concern government-wide.

MR. WALTON. Yes.

MS. FOX. And maybe that was the right thing to do. The outcome was okay.

MR. WALTON. Yes.

MS. FOX. You did speak about productivity.

MR. WALTON. Yes. I think it turned out to be even better than people had anticipated. But some might suggest that it was a little more like a Chinese fire drill than it needed to have been. John Koskinen, Chairman of the President's Council on Year 2000 Conversion, was there. He led the national effort. He came and gave us a pep talk. [Laughter]

The real deal was 9/11. We were probably a lot closer to catastrophe happening by the payment system shutting down, and perhaps other bad outcomes, than a lot of people realize. It was through the efforts of people from here, cajoling the industry to keep the faucets open and show forbearance in any number of areas that allowed things to come to a good outcome.

MR. HAMBLEY. Left to their own devices, the banks would have just been trying to protect themselves and that would have caused a catastrophic problem.

MR. WALTON. Exactly. And you would've had a significant freeze-up of the credit and capital markets, and probably the payments arena generally speaking. That would've had a cascading effect. We might have had a financial crisis more akin to what we're witnessing now then if we hadn't. That clearly was one of our shining moments. We got a lot of good political capital out of that.

MR. HAMBLEY. That was partly also because our own operations continued.

MR. WALTON. Right.

MR. HAMBLEY. But you are saying the real reason is because of our leaders talking to bankers. And talking them out of doing what they would otherwise have done.

MR. WALTON. Yes. In New York, it was a localized New York problem. It underscored a lot of deficiencies in their operations, especially with their contingency operations. That resulted in that white paper exercise, which I think Roger Ferguson chaired. About 40 different issues came out, and initiatives that got worked through over the subsequent couple of years.

MS. FOX. The strength and resiliency.

MR. WALTON. The strength and resiliency.

MR. HAMBLEY. We became a lot more interested in our ability to function under these circumstances.

MR. WALTON. Not only our own but, more importantly, the private sector's, because that's where the deficiencies were. We operated pretty well. We also found out that the whole telecom resiliency notion is false. Telecoms are just incapable of assuring that you're going to be up and running, no matter what they tell you, because over time, things change, switches get thrown, and pretty soon you've got many single points of failure, and you don't have the adequate redundancy that you think you have, or that *they* even think they have. It's a complex system. I suspect that they'll be more technological innovation in that arena. Identifying those problems helped out over time. I am not as close to this issue. Ken Buckley (an officer in RBOPS) would be a good person to talk to about that. And Mark Olson was involved in the resiliency white paper study.[14]

On the payments side, with the airplanes grounded, we pumped a lot of reserves into the banking system through float, which turned out to be the exact right thing. One thing we have learned from the Depression and other events, is when you've got a problem, you want to make sure there's adequate liquidity out there.

MR. HAMBLEY. In that particular case, we adhered to the schedules we had for making funds available.

MR. WALTON. We couldn't collect the checks.

MR. HAMBLEY. We didn't have them ourselves. Therefore, we were extending credit to the financial system in a really big way for a number of days.

MR. WALTON. Right. We told banks that we were going to do this, so you had an awful lot of banks that ordinarily did not clear through us that would come and dump checks on our doorstep, because they knew they would get the credit. And if they collected it through the usual means, the usual channels, they didn't know when they would get availability of those funds.

MR. HAMBLEY. There also was a huge upsurge in discount window lending. And again, the Fed was going out on a limb to provide credit, if it wasn't going to be available somewhere else.

MR. WALTON. Right.

[14] Editor's note: Federal Reserve System, Office of the Comptroller of the Currency, and Securities and Exchange Commission (2003), "Interagency Paper on Sound Practices to Strengthen the Resilience of the U.S. Financial System," April.

MS. FOX. Were you physically at the Board on 9/11?

MR. WALTON. I was at a conference in Fort Lauderdale. I had given a speech the day before. I was going to finish attending the conference on 9/11 and head back the next day. It was going to be a relaxing day for me. I woke up. The first thing I do when I'm in a hotel is click on the news. "Holy smokes!" My wife's uncle lives in the Fort Lauderdale area. It so happened that he had a Mercedes that needed to be driven from there to New Jersey. I couldn't get a rental car. You couldn't get any transportation. It was really tough. And [I] thought to myself, "I have to get back home!" I drove the Mercedes back. I drove for 15 hours from Fort Lauderdale to my house. Along the way, I stopped for two conference calls. There were no cops on the road, and that Mercedes could fly. I left in the morning, and I got home around 2:00 a.m. the next morning. One thing I can do is drive. Having grown up in the Midwest, I can travel. But that was really quite a scary time, because you just didn't know what other shoes were going to drop—to see the reporting and how news gets parsed out when it happens. Initially, the reports were that the State Department had gotten hit.

MS. FOX. There had been a car bomb. It was a Dow Jones Newswire report—and we believed those—that there was a car bomb at the State Department.

MR. WALTON. Yes. My family was here, and I wanted to get up here. Also, there were all the shenanigans going up on here. After that happened, things settled down, and eventually the airspace got open, and things reverted back to normal. By that following Monday, we had managed pretty much to catch up on getting the checks processed. Everybody worked all weekend long to move that through. Extraordinary efforts were taken by an awful lot of people in the System to get things back to "normal."

From that point on, I always had a "go bag" with me. I must have had 10 pounds of crap that I had to carry with me. Contact names and numbers, payments systems details, contingencies we put in place and the like. Now they're all electronic and can be carried on the little key fob, but back then it was all paper.

MS. FOX. You had a notebook full of all the contacts—all the people that you needed to cajole if something went wrong.

MR. WALTON. Yes.

MR. HAMBLEY. Did you use your GETS (Government Emergency Telecommunications Service) card?

MR. WALTON. Yes. I think I had to use it once. But other than that, I was able to get through.

MS. FOX. Hurricane Katrina.

MR. WALTON. Hurricane Katrina was, in some sense, a non-event for the Federal Reserve from a payment processing perspective. Events like that happen all the time, and the Fed has extremely good contingency plans to deal with such payments processing interruptions. They typically are smaller events. The most significant issue was what to do with all the currency that was damaged or contaminated that was received from financial institutions. But generally, they were able to relocate the operations. Clearly, you couldn't do much about the checks and cash in the sites affected in New Orleans. They just sat there. So clearly, you had some float. The Fed reached out to every financial institution to make sure they were still standing; that was extraordinary. There were some small institutions, some credit unions, for which it took several days before we could contact anybody that had management or ownership responsibilities. But, by and large, the check processing, the cash operations, and the like were kept going. At the New Orleans branch, they set up trailers in the courtyard and staff lived there 24/7 to keep things going.

MR. HAMBLEY. The world thought that we had performed well.

Future of the Payment System

What is your view about where the payment system will be going in the next few years? In particular, is the Fed going to end up having a permanent role? Will it have a limited role in the world that's emerging in payments?

MR. WALTON. Those are certainly crystal ball kinds of considerations. There needs to be a rationalization of the legal and regulatory structures surrounding payments. We will get there by the end of this next decade, but that may be an overly optimistic view. It certainly could be turned into a 15 to 20-year legislative exercise. But I think within the next 20 years, it's got to happen, because technology is driving everything down the same processing path, and it doesn't make sense to have a payment that is initiated in different ways being treated differently, from a consumer protection, or an error resolution, perspective. I think the Fed is going to have a significant role in drafting that, as we typically do with any significant bits of legislation that deal with what is one of our main purviews.

Technology is going to be a big driver on what is going to happen in the payments arena. We will continue to move to more cost-effective solutions, which means more and more payments will be electronic. At some point, you're going to see a rationalization of accounts payable and accounts receivable systems, how businesses do their business. And there's going to be a greater interaction between payments, banks, other third parties involved in payment services, and corporations and other entities. We will eventually evolve into near real-time if not real-time transactions at the smallest level. The payment instrument becomes less and less of an issue. When you authorize a payment, your account will be debited, and the other accounts will be credited in near real time. You're starting to see some of that today. Your grace periods in credit cards are shrinking. You've got the debit cards where it's pretty much instantaneous now, unless it's an offline system. Over time, I see our telecommunications system being linked and being more robust, and being able to accommodate that. And clearly, with the way computer processing is going, it's getting ever cheaper.

At some point in the future, probably before I die, all of this will be so different. People won't be able to do payment kiting and similar frauds. The frauds will have to be a different type because of the speed. But there'll always be fraudsters.

MR. HAMBLEY. You once said to me that you thought a number of the services that the Fed currently offers will be taken over by private entities and that the Fed's permanent role would be as a provider of settlement services.

MR. WALTON. That could very well be. In the transition, though, we may effectively be a switch operator to route some of these payments. We have the footprint, we have the connections, and we have the relationships with a lot of the institutions. Why rebuild that network? We are going to have a comparative advantage for some period of time, until some other solution develops. Look at how the use of the Internet has changed so many business paradigms. I could well envision that that might change how payments are processed.

MS. FOX. For a little primer, in a sense, about the settlement role of the central bank.

MR. WALTON. Somebody's got to actually have good (irrevocable settlement) money. And the central bank will, unequivocally, until there's a revolution or the country no longer exists.

MR. HAMBLEY. But isn't it also true that that entity has, in effect, to have accounts with people that are serving both ends of the transaction, so that the money can be moved from one to another?

MR. WALTON. Or with networks of people who can do that. Yes, correspondents and whatnot. But it's going to be cheaper.

MS. FOX. The reason that people want to settle with the central bank day-to-day—

MR. WALTON. Because they know it's irrevocable.

MR. HAMBLEY. Once it's happened, it's not going to be taken back.

MS. FOX. The place that you can be sure that you *are* going to be paid is the central bank.

MR. WALTON. Right. This financial crisis, 9/11, underscores the need for having a place where you can go, and that absolutely, the buck stops there, or starts there.

MS. FOX. I bet if you did one of your charts—and you wouldn't have to type the cards, and you wouldn't have to do all those things—you could probably do it on your terminal—a chart of the payments business overall, the Fed's payment business, and look at the spikes on days of uncertainty. It probably looks like a heart attack rhythm. Enormous changes in times of uncertainty.

MR. WALTON. Yes. Susan Foley is the officer in RBOPS over the folks who could probably print you those charts, under Jeff Marquardt.

MS. FOX. Yes, it's very easy to do nowadays.

MR. WALTON. It's a lot easier than the bad old days, that's for sure.

So that's where I see the future over the next 20 to 50 years. What stops it from going quickly is the good entrepreneur doesn't want to assume any costs they don't need to. And businesses, if they have a system that works today, they're not going to replace it until they need to replace it. But every time they replace a system, they get upgraded with ever greater functionality. I watch my wife in her CPA business, how she used to do taxes and how she does taxes today. It's mind boggling. And the applications, what they can do, are just phenomenal. Now, these are professional packages, not like TurboTax that can lead you astray. But you will see businesses moving in that direction as they upgrade their systems. You'll always have the mom-and-pop stores, but the solutions that you'll give to the mom-and-pop stores will be mind boggling. Everybody wants to get paid and know that the monies are in their account as soon as possible, so there's always that incentive to push in that direction.

MR. HAMBLEY. One other aspect of your career that, in a way, is a microcosm of an important development of the Fed, is your empirical work, the Fed doing empirical work, and having that work inform decisions increasingly over time. I'm impressed at the number of studies about payments patterns, check processing times, check frauds, daylight overdrafts, and other subjects you're going to have to know something about and make decisions about. Would you agree that the Fed has moved quite a lot in that direction?

MR. WALTON. Yes. And I think it's one of the responsibilities of the central bank to make sure there is good information out there that everybody can use. We have always been a numbers factory. We have collected reams and reams of information, data from depository institutions, but we're making much greater use of that information from an analytic and policy perspective. I don't see that changing. It'll probably continue ever more. But in other areas where we've had tangential responsibility or a non-legislative, non-statutory specific obligation, like in the payments area, at some point, we'll probably get criticized by these reviews that the

IMF [International Monetary Fund], the World Bank do in their visits to various countries for the Financial Sector Assessment.

I can't remember. But we were scheduled to have our country reviewed, up until all this stuff came out. My guess is, they are going to come in with recommendations that talk about giving the central bank or some entity a specific statutory responsibility for oversight of the payment system, where we've kind of cobbled it together from our operations, our actions, some bits of legislation, and our supervision. It's kind of a hodgepodge. I think they want to see that more explicitly made in legislation. That will probably happen over the next few years. I don't know.

The research is important, and that's something that tends to get cut when you have budgetary constraints. That's a mistake. I laud the RPO for funding the efforts that we've had, and I hope it continues. Either that, or there will be some other mechanism to fund, because you need to every now and again reach out and know what the facts are because it is extremely important. You cannot rely on consultants. You cannot rely on industry studies, because their methodologies are suspect from what I've seen. Even the ones that do a good job are limited by who they can tap, what they're going to look at, because they don't have the resources to look at research for research's sake. They're doing it for a particular reason. And when that reason is met, they move on. Having an objective, nonpartisan group conduct research is important. That is a role of government, and [in] the payments arena, it's one that we've done. We've done it well, and we should continue to do it, not only for payments but for all facets of our responsibilities.

MR. HAMBLEY. You worked on the pattern of retail payments and how it was changing. That helped you to identify something that wasn't already obvious to the Federal

Reserve—that the writing of checks was going down. We were gaining market share, so we couldn't see from our own operations what was happening in the overall society. But having that kind of research, and repeating it several times, helps you to move to a system that's much more rational and effective. Instead of sticking too long with the old, expensive way of doing things, it moves you in the direction of something more efficient.

MR. WALTON. Right.

March 16, 2009 (Second Day of Interview)

Using Pricing to Encourage Efficiency in Payments

MR. HAMBLEY. In that earlier interview we talked about the Monetary Control Act and the Fed beginning to price payment services, pricing to recover the cost of those services over the long run, and, in effect, act as a private sector provider would in pricing its services. But the Fed is not only pricing to recover costs, it is trying to encourage efficiency in the payments system. How does the Federal Reserve use prices as incentives to encourage greater efficiency over time in the payments system in areas such as check processing?

MR. WALTON. It is certainly true that prices create incentives to improve efficiency in payments services. Encouraging greater efficiency became more explicit the "savvier" the Fed became in pricing, recognizing that it could incent behaviors in payment usage. Before the MCA, efficiency was not a primary concern in the provision of payment services. Each Reserve Bank office just wanted to make sure that it compared relatively well with other offices in efficiency because those services were, effectively, taxpayer funded. Each Reserve Bank strove to adequately use resources in the provision of payment services. After the MCA, it became more apparent that the Federal Reserve had to become an effective competitor, if it wanted to maintain any sort of market share and to maintain a reasonable presence as a payment services provider. Given the nature of the services provided, particularly the electronic services, you had to have a certain market share to be cost competitive because of the economies of scale and scope involved. Over time, as the payment system transitioned from paper payments to electronic payments, we at the Fed found that we could incent the commercial institutions to embrace electronics more readily if they had something to gain by doing so. So our pricing was very important.

As time went by, the commercial institutions recognized that they needed to move to electronics for a couple of reasons. One, it was less costly, and two they would not have to support two payment processing platforms—a paper platform and an electronic platform. Private-sector banks and payment providers' own self-interest dictated that they would want to move ever more towards a single electronic payments platform. The Federal Reserve was instrumental in encouraging and helping the transition from more costly paper payments to less costly electronic payments. The pace has picked up dramatically over the last decade, particularly given the relative prices that the Fed and its competitors charge for the various payment services that are offered. When you compare electronic payment prices on the order of tenths of a cent to paper payment prices of cents to even tens of cents, electronics makes a significant difference to the bottom line. In the check payments arena, in particular, the Fed encouraged, through pricing and its own operations, the movement from paper to electronic processing. That leadership is partly why I think the private sector really embraced the Check 21 Act. Banks and other payment providers realized significant cost savings in their payments production function. It allowed them to reduce brick and mortar. It allowed them to reduce staff, which is the most costly component of the production function. And it moved them to be less reliant on the significant footprint that they had to have in the paper payment world to be an effective competitor.

MR. HAMBLEY. The Federal Reserve's prices have generally come down quite a lot over time. Ultimately, the motivation for all of this evolution is that payments are expensive. The Federal Reserve wants to move the world to a more efficient system, and incentive pricing is a means to an end. Is that a fair statement?

MR. WALTON. Yes. Also, one of the Fed's missions, broadly speaking, is to promote continued improvement in the payment system as it evolves, as technology emerges that can be adapted to the payment system. Payment processing can become ever more efficient. There have been studies that estimated the societal cost of payments processing range anywhere from half a percent to three percent of GDP. That is a significant cost. Most of those studies, if you look at them objectively, probably overstated those costs. But still, when you're talking about some percentage of GDP—for example, in the United States with a roughly $14 trillion GDP, carving off even a tenth of a percent is a significant resource savings.

Resistance to Replacing Paper Payments with Electronic Payments

MS. FOX. The production process can change and efficiencies can develop, but there was definitely resistance: people's resistance to moving away from paper. Even getting the government to require direct deposit was a big behavioral step along the way. With the ACH, were you involved in efforts to make people accept electronics?

MR. WALTON. Yes. And those efforts are ongoing and generally successful, for example, in the ACH arena, with Social Security and SSI (Supplemental Security Income) payments. Around 80 percent of the people who sign up today take their payments electronically. But given the demographic cohort that's going to be retiring over the next 10 or 15 years, an 80 percent rate will not cut it because effectively that means the resources necessary to process that remaining 15 or 20 percent of payments that are paper will have to increase. The Treasury and the Congress expect that there will be fewer resources devoted to processing those Social Security and SSI benefit payments in the future. To control and reduce the payment processing costs associated with Social Security, an ever-higher proportion of beneficiaries will have to accept and embrace electronics. It is a generational issue to a large extent. When the

ACH and other forms of electronic payments began, there was a high degree of reticence by people who were comfortable with paper payments, cash, and checks, to migrate to electronic payments. But today when I speak with younger people, in general, they're comfortable making electronic payments, whether it's using plastic or making payments over the internet and think nothing of it because in part the payment system functions so well. As long as problems or issues that come up with their payments are resolved quickly and fairly painlessly, people are okay with electronics. Generally speaking, the Federal Reserve and most payment providers haven't received significant negative pushback from the average citizen.

There are those, however, who do not embrace change readily. We've all heard stories about some people not wanting to migrate from paper to electronic payments, notably, during hearings about EFT'99.[15] Some people providing testimony to the Congress objected to the legislation that effectively mandated or looked like it mandated that benefit recipients would have to receive their benefits electronically. There was backlash from some of the older constituents to their congressional representatives. This led to letters from the Congress to the Federal Reserve and Treasury asking why payments couldn't continue to be made in paper form. These letters would focus on why we "Couldn't give these people a break?" or "Why are we forcing people to accept this change?" The issue of flexible customer service and payment choice centered on keeping constituents happy and not strictly on payment processing efficiency. The Fed, Treasury, the FMS (Financial Management Service), and other agencies had to develop other approaches to encourage acceptance of electronic payments. For example, food stamp coupons used to be only in paper form. The government figured out a better, more electronic

[15] Editor's note: The Debt Collection Improvement Act of 1996 required all federal payments (other than IRS tax refunds) to be made by electronic funds transfer (EFT) beginning in January 1999; this is commonly referred to as EFT'99.

way to provide these benefits to recipients. The approach resonated with the recipients of food coupons so they didn't feel like second-class citizens when they were in the grocery store. The benefit was provided on a debit card. Now they were paying with a piece of plastic just like everybody else at the grocery store, and nobody knows that they're receiving a government subsidy for their necessities.

Promoting Electronic Payments

MS. FOX. When the Fed, the Treasury, and the industry sit down and talk about, "We can make this production process better," how does the assignment of making the communications pitch, or worrying about people's reactions, get parceled out?

MR. WALTON. Everybody has ownership in that issue. I think we framed the issue with the banks and other providers as one of educating their customers. We would talk to the ABA (American Bankers Association), the BAI (the Bank Administration Institute), and other trade associations and made the pitch to them that they needed to step up and help manage this change through more effective communications with their customers. We encouraged bankers to tell their customers that this move to electronic payments would be beneficial to all—that lower costs would be passed along in some fashion to customers. The onus was largely on private-sector organizations to relate to their customers that, "This is more efficient. This is going to save you money. This is going to be of benefit to you." And you have to identify what those benefits are and translate them directly so that your customers know what they are and, hopefully, accept it.

MS. FOX. They're the ones with the marketing budget.

MR. WALTON. Right. The most that the Fed and the Treasury could do would be to make similar public pronouncements about the benefits of electronics over paper payments. We did run some advertising campaigns. The TRSO, the Treasury Relations Support Office, out of the Federal Reserve Bank of St. Louis, in conjunction with the Treasury and FMS, would run these ad campaigns. Some of these missives would show up as informational advertisements on subway walls or on buses. There were also some television commercials, but not many because that was very costly. There'd be disclosures that would go out from banks that would include information in monthly statements, which unfortunately weren't widely read. But there was a significant amount of outreach by both the private and public sector.

I don't think we at the Fed appreciate how effective the Fed can be in communicating certain points about certain issues by getting out there and talking to the various groups, whether it's at a conference of bankers, or fraud prevention guys, or all the venues that are out there for informing people why something is a good idea. A lot of staff just thinks, "This is another presentation I've got to do at a conference," and they're not wildly enthusiastic about it. With that attitude, we miss a lot of opportunities to get out and make our points. That's where we've done a lot of good work and gained a lot of political capital from bankers and the private sector in general. When I was out there on the stump talking about Check 21 before it was passed, giving people the notion of, "Here's how we believe the system should evolve. This is how technology is evolving, and it should be embraced and adapted to current paper processes." When you gave people the notion about why it's important, how it can benefit them. Also, there are protections in place to prevent or address any problems that might arise, and people became more comfortable with it. If you just pop an idea on somebody, no matter how meritorious that idea, unless you explain it well and take the time to do so, it may not get a lot of traction.

The Expedited Funds Availability Act of 1987: Features and Fed Input

MR. HAMBLEY. We talked about the Expedited Funds Availability Act of 1987, how certain bad actors in the industry had "held" funds deposited by check too long, and how the Fed had tried to address that through moral suasion and hadn't been terribly successful. As a result, the Congress passed a law and the Fed contributed to the legislative effort. The legislation that worked its way through the Congress was highly technical and required the knowledge of the Fed for the final law to come out in a reasonable way. Can you tell us what the main features of the Expedited Funds Act were?

MR. WALTON. Two aspects to the Expedited Funds Availability Act were the consumer protections and the overall improvements to the check processing system. Prior to the EFAA, state law dictated how effectively a check got returned. If a check was bounced and was returned unpaid to the bank of first deposit, it had to go back through the processing chain in exactly the reverse of the way it was collected in the first place, and that might be through a goodly number of intermediaries after it had first been deposited.

MR. HAMBLEY. By reading the endorsements?

MR. WALTON. By reading the endorsements. It was quite a mess, and it was time consuming and costly. The Expedited Funds Availability Act allowed the Federal Reserve to preempt state law and put overarching federal regulation in place, under which a bank, if it had a check, and found that there were insufficient funds or a closed account or some other reason why the check was not going to be paid, could return the check directly to the bank of first deposit. That was extremely important in improving the return system and also in allowing banks to be better able to protect themselves from fraud. The return times were reduced dramatically by over 60 percent on average according to a study that we conducted. We had a significant improvement after the Expedited Funds Availability Act was passed in 1987 and implemented in 1988. By 1992, those changes had pretty much been propagated throughout the banking industry.

MR. HAMBLEY. Was the improvement to check return times something we thought we could do and that we encouraged the Congress to require in this law?

MR. WALTON. That came up when we were hearing the testimony over a number of years prior to the enactment of the EFAA. You would have consumers complaining that they deposited a check and didn't receive the funds for 30 days or whatever the horror stories were at the time. The bankers would respond that the reason why they don't provide those funds more rapidly is because they were protecting themselves from a fraudulent check. Then they would say the reason it takes so long is because first the check must be collected and then it has to get returned. That can take up to whatever the stories were at the time, perhaps a couple or three weeks. By fixing the return side of the collection stream—the back half of it—and shortening that to effectively a couple days, that provided the necessary infrastructure changes to allow the Congress to reduce the hold periods and effectively dictate reduced hold periods for banks with regard to providing funds to their customers.

MR. HAMBLEY. Originally, under the Act, there were temporary funds availability schedules, which allowed more time before a bank had to make funds deposited by check available to its depositors. After a while, the law ratcheted down the maximum permissible holds in anticipation of this improvement that was going to be occurring, and, in fact, did occur. By making the changes that we did, we made it more viable for people to get access to their money faster.

MR. WALTON. That's right. And the criticism that we've seen over the last 10 or 15 years is that the banks were able to achieve fairly significant improvements in part because there was this law and subsequent regulation. So why didn't the Congress then say at some date certain in the future that it would be near real time in how quickly you could get access to funds in your accounts? There are a lot of technical reasons why that's not going to happen for a long period of time, but there is some merit to the argument that if you say this is the expectation by some specific date in the future, banks and others in the industry will strive to achieve that.

MS. FOX. Isn't the Fed a leader in the development of electronics, a pusher, a puller, an encourager? If so, why did we have to have the Congress make those improvements?

MR. HAMBLEY. You need some legal authority to preempt state law.

MR. WALTON. That's correct. There wasn't any legal authority to do it.

MS. FOX. But we never asked for it.

MR. WALTON. Well, some might say that's the fly in the ointment. A lot of what the Fed has done has been without an explicit legal basis—for example, oversight of the payment system. Many countries have explicit laws that their central bank or their Treasury have specific responsibilities for improving the payment system. In the United States, we never really had that. That responsibility just resulted based on the fact that the Fed was formed because there was a failure of the payment system back in the late 1800s, early 1900s and that, as a consequence of that failure, the Fed would continue to work on improving the payment system. It was implicit. Over time, we've gained more credibility because of the provision of services and being involved in the business, so that we could see where improvements could be made, and we would make those improvements and we would try to propagate those through our example and, after MCA, through our competitive position, so that others in the private sector followed along. Not all of those changes have been welcomed by the banks because inertia is difficult to overcome.

Sometimes, unless they're compelled to act, the private sector isn't going to act, and they're only going to be compelled to act either because there are significant cost savings to them, a profit opportunity, or they're told, mandated, to do something. In the future, there are going to be an awful lot of mandates coming out of the Congress, and they may not necessarily be so beneficial. The trouble with legislators is they that want to have good outcomes, but they don't know enough about the nuts and bolts of the system to come up with legislation that will be effective. You can't just legislate outcomes. We have many laws that try to legislate good outcomes and yet we still have crime, for example. Despite the laws, we still have people going to jail for murder or theft or other criminal acts. In addition, there are usually unintended consequences associated with even the most thoughtful legislation—let alone legislation that is not well crafted or thought through.

MS. FOX. In that case, I always thought that inertia was working pretty well for the Fed. They're meeting the consumer's need for quicker returns. It's a big investment.

MR. WALTON. Right, and we would argue that each of the banking markets were competitive, and if this was a concern to their customers that they would demand that the banks do something about it, such as provide customers with better services. The problem is that a bank is a multi-product firm. For what products do people go to the bank? It's the intermediation function that results in loans and savings—payments come later. There's a savings and investment component, and there's a lending and borrowing component, which is the larger demand. Payments were an ancillary business that was necessary to make the two happen effectively. There's less of a competitive push because issues related to availability of funds and the like tended to be more the tail of the dog and you weren't really seeing banks respond. I think that's why ultimately the Congress did what they did.

MR. HAMBLEY. If the consumer thought he could get a loan when he needed it from his bank, he wasn't going to quibble about the bank's funds availability policy. He wasn't going to take his business elsewhere because he didn't like the funds availability policy.

MR. WALTON. That's right.

MS. FOX. The data show that consumers rarely change banks even when they're not particularly happy, so there is less overt competition, certainly for that kind of product. There are all kinds of things that maybe slowed the process.

MR. WALTON. There's a lot of customer stickiness with banking.

The Issue of Remotely Created Checks and the Fed's Response

MR. HAMBLEY. In 1994, you became manager of the check payment system. You were involved in some revisions to the Board's Regulation CC, which implements the Expedited Funds Availability Act. Talk about the Reg CC issue of remotely created checks. How did the Fed address the issue, and was the response successful?

MR. WALTON. Remotely created checks came about largely because the private sector is very clever in the use of the payment system. Insurance companies—because of the nature of certain payments, such as recurrent monthly payments for insurance premiums—came up with an idea to facilitate their customers' timely payments, given that customers sometimes forgot to send in their monthly payments for their insurance policies. The insurance companies would say, "You can call us, and we will create a check drawn on your account to make the payment timely. Just give us your bank and demand deposit account numbers and authorize us to create a check that can be drawn on your account to make the monthly payment." The company would have the customer's verbal authorization and would be able to collect the payment owed. That's how this remotely created check came about. There were many later applications of this: Telemarketers, magazine sales, all sorts of potential uses came about by using this mechanism. That resonated with the customer because they could see that it was a check that was going to come back to them, and they were going to see it as a check from their account, even though they didn't write it initially. People were more familiar with that process than with the nascent ACH at the time, where you would have to sign up and send the payee a voided check to give them your approval to initiate a payment. The setup process for an ACH is a bit kludgy. There are some aspects about the ACH that made it somewhat difficult to embrace by different parties. Remotely created checks were more intuitive for the payor and payee and, as long as everyone was in agreement, they were not an issue. Then we had some clever bad actors that would—under the guise of trying to sell you something or by just stealing people's demand deposit account numbers—create these instruments and take them to a bank to deposit them and receive the monies. The checks could be for amounts greater than what the customer authorized, particularly if you were going to buy the latest gizmo that they're selling on TV or that the telemarketer was pushing. They'd say it was $29.99, but the check amount would be $39.99. A lot of people wouldn't catch that at first. When they did, their bank would evaluate whether it was cost effective to go back to the bank of first deposit to collect on the unauthorized amounts. Because the paying bank, in most cases, would not have a direct relationship with that bank of first deposit, it generally would be more costly for the paying bank to try to collect small dollar amounts than to just write off the difference and eat the loss. So there was this nuisance fraud out there, but it probably amounted to a good chunk of change.

MR. HAMBLEY. It was fraud that affected both consumers and financial institutions adversely.

MR. WALTON. That's right.

MR. HAMBLEY. What did the Fed do about it?

MR. WALTON. In one of its rulemaking exercises, the Fed asked for public comment. The Fed had been hearing about this fraud from clearinghouses, particularly from the upper Midwest. Also the Connecticut and Vermont attorney generals and a few other states' attorney generals complained. The Fed asked whether this was something for which it should consider a remedy. The proposed remedy would effectively change what has historically been the law—Price v. Neal (English case law)—the notion that the *paying* bank is in the best position to determine whether or not to pay an item. The Fed's remedy changed it so that the bank of first deposit now is on the hook for determining whether these are legitimate payments and, if not, then they're the ones that are going to eat any losses associated with the unauthorized payments.

That change was put in place around 2005 or 2006. For certain types of payments, particularly remotely created checks, the bank of first deposit was in the best position to determine whether their customer who is depositing these checks is a good actor or a bad actor. If they are bad actors then that bank has to incur the costs of the fraud that their customer is perpetrating. That has had a significant effect in addressing remotely created check fraud. The states' attorney generals and the payments associations favored the Fed's regulatory change. The Fed received favorable press from that change. That type of fraud probably has been reduced, although that is only anecdotal evidence, since we do not conduct fraud surveys too frequently.

MR. HAMBLEY. This development in the payment system, remotely created checks, was generally beneficial, but it created opportunities for people to do bad things that would hurt both consumers and financial institutions. And when it was brought to the Fed's attention, it came up with a fairly effective solution. It allowed the good to continue but weeded out the bad.

MR. WALTON. That's right. Because one knee-jerk reaction from certain members of the Congress was that the Fed should just ban these instruments altogether. And the folks at NACHA, the National ACH Association, who had a competitive interest, favored banning remotely created checks. "You should make everybody put in that MICR field a code that says 'This is a remotely created draft.'" We asked the obvious question to those creative types and said, "So the fraudster is actually going to self-identify that this is a fraudulent item."

MS. FOX. As you said, ACH is kludgy. And the remote check is easier for the consumer. So if you're an ACH operator, as a competitor you want to get rid of the remote check and then the business has to move to ACH or not go through.

MR. WALTON. That's right.

Controversy over the Inter-District Transportation System (ITS)

MR. HAMBLEY. In the mid–1990s, there was a controversy between the Federal Reserve and the then-chair of the House Banking Committee, Henry Gonzalez, and one of his principal staffers, Bob Auerbach, concerning the Fed's check transportation system, which was called ITS, the Inter-District Transportation System. What was that all about?

MR. WALTON. At the time this controversy came up, the Retail Payments Product Office was located at the Federal Reserve Bank of Boston. Some staff members at the Boston Fed were fairly disgruntled with management. They alleged that there were irregularities in the bid process for some of the air transportation contracts and overpayments on some of the contracts. Basically, the Federal Reserve collects checks. We received the checks at the many Fed offices, and those checks that are drawn on banks in other Fed office territories need to be transported to those offices. The distances between some of the Fed offices are significant. So to collect those checks timely, the Fed would contract with a variety of air transportation companies to fly the checks to those offices. This was a fairly significant deal. The Fed was spending maybe $50 million to $70 million a year associated with these contracts. This was for air transportation companies. Some flew Lear jets; some flew smaller planes. It depended, among other things, on the distance, the collection times, and the funds availability commitments for our check collection service.

At that time, Henry Gonzalez was a strong advocate of having the Congress have some say in setting interest rates for monetary policy, being a populist congressman who in some sense felt there was no need for a central bank. Bob Auerbach, his staff member, was a former Federal Reserve Bank of Kansas City staffer, an economist who never gained much traction when he was in Kansas City. He believed that he should have had more input into the FOMC meeting discussions. He left the Fed and went to work for Henry Gonzalez. So we had a confluence of disgruntled folks with regard to the Federal Reserve—staff at the Boston Fed, Auerbach, and Gonzalez—each with their own view about the way things should be. Boston staff would send notes or call and speak with congressional staffers about alleged problems with the ITS system. They were alleging that there were some sweetheart deals in contracts. I even had one staffer allege that the officer who was running the ITS, and who was Italian, was only letting contracts to other Italians. The staffer making the allegation was Irish and felt that ethnicities were strong motivators for contract awards in the ITS system. After I spent some time investigating these allegations, I gained a better understanding as to why some of the issues in Boston existed, especially because of different ethnicities. By the way, my staff and I did not find any irregularities of significance with the contract bid process or alleged overpayments.

What came out was the misperception that the Federal Reserve had its own fleet of airplanes. There were around 50 planes that would fly about 200 flights every night to move these checks around. It was alleged that the Fed owned these planes; there was lots of confusion about this on the Hill. The Hill staff and some congressmen thought the Fed owned planes and were flying staff around the country at anyone's whim. We attempted to educate them about the purpose of these flights. If you've ever been in one of these cargo planes, there's basically room for the pilot and the co-pilot, and generally there isn't much else. It's basically just the body of the aircraft stuffed with cargo, in this case, paper checks. This thing just took a life of its own. Auerbach thought that the Fed owed the planes. He felt that it should be a private sector function. We told him that it was a private sector function. We outsourced check transportation through a competitive bid process. Then he alleged that there were phantom planes out there that the Fed was paying for as part of these sweetheart deals. I was tasked with investigating these allegations and met with every contractor to verify contract terms, including whether the planes actually existed. I learned more about planes and little airports than you could possibly imagine. There was nothing untoward about any of the contracts, and it was a fairly efficient system. It was one of those things that just took on a life of its own.

Henry Gonzalez was trying to make the case that the Fed was not managing its payments business well and, therefore, couldn't be trusted with setting interest rates for the macroeconomy. That was his interest in this sordid tale.

MR. HAMBLEY. There were also allegations that fuel was being purchased for planes that weren't flying.

MR. WALTON. That's correct.

MS. FOX. Also, a disgruntled competitor who had not gotten the contract with the Fed hired a Washington lobbyist and an economist named Bert Ely. Bert helped them devise a compelling story line that said that the way the Fed did air transportation effectively lowered the PSAF (private sector adjustment factor), and that our costs were actually higher.

MR. WALTON. Bert had all sorts of stories. He could be used in a pinch for anything—any story that anybody wanted to come up with. The company you refer to was AirNet. It's located somewhere in Ohio—Columbus or Cincinnati. It had roughly 75 percent to 80 percent of the check-transportation-by-air business in the country. It was virtually a monopoly, but it wanted the last little bit of check volume to help its bottom line. AirNet wanted the $50 million to $70 million that the Fed was spending on this. AirNet came in and tried to negotiate with us. The president and senior staff of AirNet (along with their attorneys) came to the Board to talk to staff, including Louise Roseman (who was the director of RBOPS from 1999 [to 2016]), about how they could provide this service to the Fed without us going out for competitive bids. We told them that was contrary to the Fed's procurement procedures. Then AirNet started on this other tack and attacked the Fed politically, which by the way was supported by an Ohio congressman who, ironically, ended up going to jail because he took bribes from some of these folks.

MR. HAMBLEY. That continued into the legislative process that resulted in Check 21.

MR. WALTON. That's right.

MR. HAMBLEY. And it held up enactment of Check 21 for some time. And the Fed had to produce some superfluous reports because of it.

MR. WALTON. For the next 10 years. In the Board's annual report, there is a footnote that shows the costs of running the Fed's check transportation system, and whether it's "profitable" and whether it has the certain profit margin that is required under the PSAF.

MR. HAMBLEY. They were essentially asserting that check transportation was a separate product line and, if its costs weren't fully recovered, there was something improper about it.

MR. WALTON. They argued that the Monetary Control Act required that. But the MCA states that the Fed shall price and recover cost for *all* services. The Fed's pricing principles said, "We'll do you one better. We'll do it by service line." The Fed had the ability to define what a service line is. Check is a service line as are a number of other payment services that the Fed offers. Service lines are significant payment businesses—not components of businesses, such as check transportation or check IT processing. Those latter components are part of what goes into the production function for check processing. There were many conversations for about a year. Vice Chair Alice Rivlin had to give testimony before the Congress about ITS during that time. And the Boston staff was invited to testify.

MR. HAMBLEY. As a result of this controversy with Gonzalez over ITS, did you appear in court?

MR. WALTON. No. It was not a court. I was deposed, and I had a lawyer from the Board, Stephanie Martin. The Boston Fed had the ITS folks and their lawyers, and Auerbach was there with his counsel for the minority on the House committee.

MR. HAMBLEY. This was a deposition before the Congress?

MR. WALTON. It was not located on the Hill; the deposition took place at the Boston Fed.

My staff and I had to go out and look at every one of these couriers. We looked at every one of the contracts. We visited all the locations. We looked at all the operations. By the way, most of the check processing and transporting of checks happens from 11:00 at night to 6:00 in the morning. I spent a lot of nights in little backwater locations looking at planes and talking with people. I had the facts, and the deposition centered on the facts and the allegations. Auerbach was an incredibly abrasive personality. He would call you a liar just to get things inflamed. He was quite successful at getting people quite peeved. I believe he's now in the University of Texas college system.

Fed as a Fair Competitor in the Payments System: Promoting a Level Playing Field

MR. HAMBLEY. After being required to act as a provider of services, as a private firm would in pricing its services, the Federal Reserve became quite devoted to the idea that it is a fair competitor, and sometimes to its detriment. In the late 1980s, the Fed attempted to promote a more level playing field between itself and the private sector in check processing. Regulation CC was amended concerning "same-day settlement." Later, the Fed came back to those issues.

MR. WALTON. Same-day settlement was a regulatory change the Fed made to allow banks greater flexibility in settling payments among themselves. That change helped to level the competitive playing field between private collecting banks and the Federal Reserve. When banks settle their checks, they must settle in same day funds, which effectively is a Fedwire, or they had to have an account with the Fed and have monies in their accounts to settle up.

Under state laws, banks can present checks for payment to the bank upon which the checks are drawn no later than 2:00 p.m. for settlement that same day. Under Regulation J, the Federal Reserve Banks could present earlier in the day (roughly at 8:00 a.m.). Jeff Lacker [President of the Federal Reserve Bank of Richmond, 2004 to 2017] called it the Fed's six-hour competitive advantage or something like that. He was a big critic of the Fed being in the payments business, period. The Fed could present at 8:00 a.m., and the commercial institutions could present at 2:00 p.m. There was a difference of opinion about whether the Fed should marry up those times. The Fed went out with a Federal Register notice requesting comment on this issue to level the playing field. But the Fed is inherently a different type of organization than a private sector competitor, and there are some things the Fed cannot do. For example, the Fed has to offer a product at the same price to anyone, whereas a commercial institution can offer you one price, can offer someone else a different price, and can offer a third party still another price, and those prices can be wildly divergent. It's a function of the relationship and the profitability that each organization has relative to that bank as a customer. So when the Fed went out for comment, both large and small institutions that responded said that, while there were differences in presentment times, this difference was not sufficiently significant relative to all the other differences between a private collecting bank and the Federal Reserve. These commenters opined that there seemed to be a fairly balanced and competitively leveled, playing field out there in the provision of check services.

MR. HAMBLEY. The Fed would have addressed the difference had the commenters not said it's really not necessary.

MR. WALTON. The Fed received a lot of adverse comments from the corporate community. Corporate treasurers want payment information as early in the day as possible and, if their payment information came in at any time other than at 8:00 a.m.—which is when most check payment information is available for checks that will debited that day—it would change the whole dynamic of the corporate treasury. Typically, corporate treasurers are trying to figure out their funding requirements for the day. Whether they need to add funds to their demand deposit accounts (DDA) to cover the checks coming in or whether they have excess funds to invest. Because most of the money markets are more active in the morning and generally thinly traded in the afternoon, treasurers prefer to make their funding and investment decisions earlier in the day. Thus, there was a lot of pushback from the corporate treasurers on possibly moving to a 2:00 p.m. same-day settlement from 8:00 a.m. for private collecting banks. Treasurers want payment information earlier not later. As an aside, ultimately this issue will be resolved as systems and businesses migrate to a real-time or near real-time accounting system. But real-time accounting has to be embraced by most of the players in the economy. It's got to be businesses and banks that change their accounting systems, including their accounts receivables and accounts payables systems. Payment transactions have to be processed and posted and settled on a 24 by 7 basis for that to come to fruition, and at some point in the future they will.

Removing Impediments to the Payment System

MR. HAMBLEY. After you became the Assistant Director for Retail Payments and Wholesale Payments at the Board in 2001, you were working on identifying impediments to improving the payment system. Was there anything in particular you were looking at that maybe either continues as an impediment or was resolved as an impediment?

MR. WALTON. For payment systems, there were a number of ongoing initiatives. In the check world, we were continuing to consolidate and move to a more electronic processing platform with ACH. We've been working to allow that. The way ACH came about, the Fed became the ACH operator, and every other participant was just some sort of a customer of the Fed, whether it was a clearinghouse that had a significant amount of volume, or whether it was a banking institution that was using the ACH system and providing the Fed with payment files. Over time, we recognized that, if a clearinghouse has a significant network of banks that are exchanging transaction files, there's a value to their network and, if the Fed provides files and payments to that network and they distribute those files to their customers and banks, the Fed gained that value. Our thinking evolved to recognize that there may be multiple operators of ACH systems. So the Fed changed the rules to recognize that value and how to recompense those participants for that value. The Fed came to an agreement with the other operators on this point. But because the ACH, and electronic payment processing more broadly, is an economy-of-scale business, ultimately all but one of the other operators ceased operations. Today, only the New York Clearing House remains as a competitor. They have a significant number of large institutions that typically originate a significant proportion of all ACH files and the Federal Reserve is the network of all the rest of the financial institutions that receive a significant proportion of these files. The relative share of the two operators is approaching equality in the amount of volume when you consider the send side and the receive side of the ACH payment.

Does the Fed Need to be Involved in the Payments Business?

MS. FOX. Does the Fed still need to be in the payments business?

MR. WALTON. We touched on this a little bit previously. You can have varying opinions about what the Fed needs to do. Because of the settlement function, the Fed will always be participating in that regard. Now you take a step back. What about large value systems versus small value systems? Some would argue that, with small value systems, there should be a sufficient number of competitors out there that could provide those services without the Fed being an active participant in that. For example, Ed Green at Penn State would argue that you don't even need Fed involvement for the large value systems, whether these are security trades or Fed wire funds transfers. On the latter, particularly the wholesale payments, the large value systems, I would suggest that you would not find many people that would support Ed's position because these are such critical payments to the smooth workings of the economy. You have to have some trusted intermediary or provider of these products that's going to stand in and assure finality of payments irrespective of the state of the economy. Most people aren't going to argue that. On the retail side, on the small value payments, we seem to be moving ever closer to an all-electronic and cash system.

Cash is its own special world. Central banks probably will always have to be involved in cash in some way, shape, or form, unless we go back to the wildcat banking days. For the retail electronic systems, a case can be made that at some point the Fed need not participate. But what we've seen, particularly from 9/11 and other crises that have occurred, is that the Federal Reserve is going to be around and providing services and will take extraordinary efforts to assure that payments processes work and funds flow freely and smoothly to keep the economy working. There's a resiliency argument that counters the notion that the Federal Reserve should not participate in the retail payments processing in the future. The Federal Reserve may have a role, if only to be a backup for whatever the private sector operators are doing. But who knows how payments and payments technology will change over time? If payments are all electronic and processed in real time or near-real time, then all that is needed is linked switches. At that time, I'm not sure whether the Fed will need to have a significant role in payments processing.

The Fed's Check Processing Role

On improvements to the payment system, as we evolve from paper to electronics, there's less need for brick and mortar, for the processes that exist in a paper world, and for all the attendant resources required. For the Federal Reserve, this has meant a significant reduction in the number staff and offices processing paper payments—reduced from 46 offices in the early

1990s to far fewer offices at present. The Federal Reserve has seen a significant reduction in the number of staff needed to process payments.

Of course, there was a lot of pushback from the Reserve Banks because each Reserve Bank wanted to have enough work to justify its continued existence as is. With fewer processing functions and fewer staff, the fear is there might not be a sufficient critical mass of staff to support and justify a Reserve Bank. There are a lot of people who are fearful that, if there is a rethink of the Federal Reserve System, there may not be the regional Federal Reserve banks out there; that the fundamental nature of the Federal Reserve, the central bank, would change, and become more like what we see in most European countries and elsewhere where the central bank doesn't have myriad locations to conduct its central bank business. That resulted in a lot of challenges as we tried to work our way through to improve efficiency in the nation's payments system and in the Fed's own production function. Also, as the payment system transitions to greater electronic payment usage, the Federal Reserve is increasingly challenged to achieve and maintain cost-recovery as directed by the MCA. As the volumes of checks dwindled from roughly the 50 billion to 60 billion checks that the nation wrote to probably well under 30 billion checks that are written today—and of those, an ever smaller number of them are interbank checks that need to be collected—it just doesn't make sense to have all that (Federal Reserve) brick and mortar out there. The only way the Fed can take out large chunks of cost is to reduce brick and mortar and labor.

Take a look at what other businesses are doing in today's internet age where more and more functions are electronic. Office Depot and Staples are closing those offices. Their evolving business model is to have customers order online and use UPS and FedEx to deliver office supplies either same day or next day because the product is homogenous with little product differentiation and most people are interested in price. Similarly with payments, it's a homogenous commodity type product and process. It's all electronic. We don't really need to have the thousands of people in the Fed's system spread across the country that we used to have and used to need. Look at the ACH. There's probably not even 200 people that work in the ACH, and that's 12, 14, 15 billion payments a year. The Fed's check staff is probably less than 4,000 today and, by the end of this year, it will be a significantly reduced number as they get down to just the one office that will be processing the paper checks and the one office that will be processing the electronic check payments.

Before the Federal Reserve made the decision to recognize the changing dynamic of the payments system, it undertook a number of studies to show what the facts of the situation were and to draw out the implications of those changes. There was an important meeting with the chairmen of the board of directors at the beginning of one year. I've forgotten what year it was. Pete Peterson (chairman of the Board of Directors of the Federal Reserve Bank of New York) was the chair of that group. They were persuaded that consolidating check processing was the way to go, and it's been on an ever faster track since that time. It is amazing to me how rapidly the market adjusts, once you make a decision like that. And the market has adjusted quickly to the electronics. We're five years out from Check 21, and almost all checks are being deposited electronically, and something like 90 percent of the checks are being presented electronically. That adoption rate is just amazing.

MR. HAMBLEY. And as this is going on, the whole country is being turned into one local check region.

MR. WALTON. That's right.

MR. HAMBLEY. And the availability of funds is speeding up compared to what it used to be. That was surprising, and soon we're going to have even quicker funds availability.

MR. WALTON. By the end of this year, the funds availability will be two days. Then you'll see others, probably Representative Carolyn Maloney, try to ratchet that down. But until you get a little more automation and linkages of accounts, it's going to be difficult to get it reduced from two days.

MR. HAMBLEY. Isn't it likely that, even if the law doesn't change, the availability will change?

MR. WALTON. That's right. The availability will change except for checks in excess of $5,000, or checks written on new accounts—the exclusions that are in Reg CC and in the EFAA currently. Pretty much all the checks will be local.

The Board's Fiscal Agency Program[16]

MR. HAMBLEY. In 2005, you became the Associate Director of Reserve Bank Operations (RBOPS) and became responsible for the Board's Fiscal Agency Program, along with other things. In general, what is the fiscal agency program? And do you remember any of the issues that were particularly important at that time?

MR. WALTON. The Treasury has a payment processing arm; it's called the Financial Management Service (FMS), and it's a bureau under the Treasury. It's charged with collections, payments, investments. Think of it as sort of the corporate treasurer of the federal government. They were trying to get a handle on the monies that flow in and out of government on a daily basis and trying to be as efficient with those funds as possible. The FMS was undergoing a

[16] The Federal Reserve's responsibilities as a fiscal agent are described in the *Purposes and Functions* publication cited earlier.

modernization effort, when I assumed responsibility for Fiscal Agency. The FMS wasn't quite sure how dramatic and how significant this effort should be. Basically, there's about 200 federal government agencies that have some ability to make payments, and they were trying to consolidate that so that there would be standard processes and procedures and, at some point, perhaps only the FMS that would make these payments. Also, there was the idea of pulling all the information about income and payment flows together in a timely fashion so that the Treasury could know the government's cash position, payments and income flows, and the like to more effectively manage the government's treasury function. These would include investing excess monies, better timing and sizing of funding bills, and the like. Needless to say, changing a large number of existing processes and procedures in the federal government to achieve a more effective treasury function has been a significant challenge.

Historically, the Reserve Banks provided support or developed and operated many of the existing systems and processes. Treasury could choose among the Reserve Banks and assign specific projects to specific Reserve Banks. Additionally, the Treasury would come up with a budget for the Fed for the services provided. While the work that the Fed would do for the Treasury is reflected in its budget, it is not subject to the same appropriations process, as the Treasury has permanent indefinite appropriations for funding services purchased from the Fed to provide these services.

The TRSO (Treasury Relations and Support Office) was formed to ensure greater consistency and control over who in the Fed is doing what for the Treasury and the other agencies. In that way, the Fed could better manage its own resources, whether it was software programmers or groups within different Reserve Banks that provide services to the Treasury.

The fiscal function had been a sleepy little backwater in RBOPS because the Fed just let the Treasury do whatever it wanted with each of the Reserve Banks and each of the Reserve Banks dealt in a proprietary fashion with the Treasury (even with the formation of the TRSO) and really didn't want to take a more centralized view of providing those services where there might be some synergies, and an ability to reduce costs. That's been something that we worked on when I took over that area. They made some good strides but probably more strides need to be made.

Now the role of the TRSO is helping the Treasury achieve its future vision of its payments, information, collections, and investment functions. The Treasury has a significant amount of work to do and so does the Fed as a primary agent responsible for making many of these changes. Board staff will have an ever greater role to ensure that these significant projects with significant budgets are appropriately managed by the TRSO and the Reserve Banks.

MR. HAMBLEY. So here's another area where you're going from the Fed originally being a decentralized organization, when it's acting as the government's fiscal agent, and trying to move, over time, to a more centralized and efficient system. One aspect of that is when the Treasury has more money than it currently needs, we're doing a variety of new things to help them invest their money in ways that we didn't used to. Is that correct?

MR. WALTON. That's right.

MR. HAMBLEY. It makes more money for the Treasury. It's another interesting aspect of the Fed being organizationally decentralized, but eventually moving toward the point where that's not so true anymore.

MR. WALTON. That's correct, but, because you're dealing with the Treasury and implicitly all the other agencies in the federal government, that requires those actors to also say, "We want to improve our processes. We want to reduce our costs." Social Security comes to mind because it is making 40 million to 50 million payments a month and is on the leading edge of process and efficiency improvements. It is one of the early adopter agencies that embraced enthusiastically the move towards electronics to more effectively process all its recurring transactions, and especially as the number of these payments grow in the years to come. Other agencies are now coming into the fold and understanding that there's some benefit to them from embracing electronic payments and more standardized processes, but there are implications to those agencies in their staffing and their budget. Because their budgets use appropriated funds, however, management of those agencies are not so keen on embracing process improvements because, if they do, then they will be asked to reduce their budget dollars and manpower. Nobody wants voluntarily to shrink their budgets. That's a subplot to the story that goes on behind the scenes. That will take a much longer period of time to sort out. In general, getting the Reserve Banks to a better understanding, a more common understanding, about what the Federal Reserve's role as fiscal agent should be is useful—as opposed to the role that it has historically had where it had the latitude to do whatever it felt was necessary to meet the demands imposed on the Fed by the Treasury.

Not everything that the Treasury wants the Fed to do is a legitimate demand. For example, during the Greenspan era—Alice Rivlin was Vice Chair at the time—the Treasury wanted to centralize tax collections. This was called the EFTPS (Electronic Federal Tax Payment System) project. The Treasury solicited bids from the private sector, but also from the Federal Reserve, to have a single institution collect all the tax monies for the IRS. The Minneapolis Fed came up with a proposal to create a Reserve Bank organization of about 2,000 people to provide this service to the IRS and Treasury. RBOPS said, "Wait a minute. A lot of this work is done currently by commercial banks like Bank of America and Wells Fargo. Why do we have to step into the breach? There's no obvious void to fill." The Reserve Banks completely ignored us. They came in and made their own pitch to the Board because they didn't want to hear our naysaying on this that basically it was something that could be completely taken care of by the private sector. In its infinite wisdom, the Board said, "This is a really bad idea." So that put the kibosh on it. Then people started getting the notion that the Fed's role needs to be to do what can't be done by the private sector, rather than doing what can be done by the private sector.

What is appropriate for us to do versus what the Treasury and its agencies need to do for themselves? This issue arises with some frequency because Treasury has this permanent indefinite appropriation for Fed services. So rather than contract with the private sector and have it show up in the Treasury's appropriated budget numbers, the Treasury tries to foist as much as it can onto the Reserve Banks because it doesn't show up in the budget the same way. This has resulted in less scrutiny by the Congress of the Treasury's budget. The Reserve Banks need to have a common understanding with the Board as to what's appropriate and what's not appropriate for the Reserve Banks in the fiscal services domain. This is a continuing source of conversation with the Reserve Banks, the TRSO, and the Board. It can be a contentious conversation at times.

Intervention in the Payments System: Market Failure

MR. HAMBLEY. You've described a tension within the Fed. On the one hand, you have the people who do the operations and who want to sell the products—

MR. WALTON. —who want to maintain their jobs and expand their operations.

MR. HAMBLEY. —maintain their jobs. On the other hand, the Board, whose view is more informed by what gaps need to be filled, what the private sector can't do, the Board's view is "Let's not just do it because we can do it, but let's do it only where we have some specific value to add, which is not possible in the private sector."

MR. WALTON. The Board's perspective is to act if there's a market failure of some sort that cannot be accommodated other than through government intervention. There are relatively few of those in the provision of payments, particularly from the Treasury's perspective.

MR. HAMBLEY. That Board perspective has outlasted specific Boards. It is a part of the Board's culture to not want to do everything, but to do the things that we're particularly, uniquely suited to do.

MR. WALTON. You're right. It has outlasted Boards, but different Boards over time have had more sympathy or empathy for providing certain types of services. For example, why we got into providing ACH payments, and why we didn't process credit card payments. It depended on who was sitting around the Board table at the time. But generally, there's been a strong staff perspective that there's an appropriate role for the Fed, and that goes back beyond any of the division directors for whom I've worked. This is a long-lived philosophical orientation towards letting the market sort things out and only have the Fed step in if there isn't an obvious market solution.

Reserve Bank Payments System Initiatives

MS. FOX. What is the organizational benefit of a system in which a Reserve Bank can come and independently propose a program to the Board despite the disapproval of headquarters, if you count the Board's Reserve Bank Operations Division as headquarters?

MR. WALTON. It is useful every now and again to have people challenge the status quo, as long as there's some merit to their argument, so that system allows some checks on each other so that we don't get too crazy going in one direction and they don't get too crazy going in another direction. There is something to that. Can that be done differently than how we've organized it? Probably. What would that be? I don't know. I'd have to think about it.

MS. FOX. Let's be clear on how the organizational structure works, using your example of the Minneapolis Fed having a bright idea that it wants to bring to the Board. Does it go through the Board Committee on Reserve Bank Affairs, and does it have to make a special request to be heard?

MR. WALTON. In general, we tend to be very accommodative, if the Reserve Banks push hard enough. Typically, the chair of whatever group that's pushing—if it's the Financial Services Policy Committee, FSPC, or if it's a particular Reserve Bank—will come forward and say, "We want a hearing on this." The BAC would hear it and, if the Reserve Banks don't like what the BAC says, then the Bank will say, "We want to have a full Board decision." We're sufficiently flexible and accommodative to the Reserve Banks, I believe, and pretty much always have been. If a Bank wants to raise an issue up to the highest level, a Bank president has a venue to talk to the full Board.

MR. HAMBLEY. Can you think of examples when they did it and succeeded?

MR. WALTON. No. The Boston Fed president, Cathy Minehan, was the head of the FSPC when we started running into these cost recovery challenges. She did not want to go down the consolidation path. She thought we should go to the Congress and ask for dispensation from cost recovery. That was her solution, but that went absolutely nowhere. Governor Roger

Ferguson was at the Board at the time, and he was great at deflecting those kinds of arguments in such a nice way.

MR. HAMBLEY. That wasn't the Reserve Bank trying to offer a product that you didn't want to offer, it was just a different way to approach things.

MR. WALTON. Right.

MR. HAMBLEY. Maybe there aren't any examples.

MR. WALTON. I don't know. There may be some little ones out there, and they might be in the fiscal agency function.

MS. FOX. This is not a fiscal agency issue, but I do remember there was a close call once involving Cathy Minehan. The Boston Fed had a building in a developing tourist area and wanted to create more museums. It had a good set of arguments about their educational value, about being on the tourist path, and just doing economic history and the colonial era. The issue was brought to the BAC, where there was mixed opinion. The issue moved up from there to the Board. As I recall, Chairman Greenspan had an unmixed opinion: If the Congress wanted the taxpayers to pay for a museum in Boston, it could appropriate the funds to do so.

MR. HAMBLEY. I think there now is a museum in Boston.

MS. FOX. Well, they all have displays—

MR. WALTON. They all have something.

MS. FOX. —but this was to be a grander display.

MR. WALTON. Right. The Reserve Banks and the Board will come to some sort of tacit agreement. The whole tax payment collection thing was just a non-starter, but for some of these things in terms of education and outreach—I think this is where the controversy is now in the System. How much financial literacy education should there be, and what should the Fed's role be in that? There might be more of a role than what we have had heretofore, but where do you limit it? We could hire legions of economists to go out and give symposia on financial literacy. Some may rightfully question what good we would do with this outreach effort. How do we measure results from an initiative like that and justify it to the Congress?

Evaluation of the Fed's Role in the Payments System

MR. HAMBLEY. If you stand back and think about the Fed having been involved in the payment system now in one way or another for almost 100 years, would you say that was good for the society?

MR. WALTON. Generally, I would say it has been beneficial. Like plumbing, like the lubricant of an engine—having a smoothly functioning and ever more efficient payment system helps the economy, and we've largely been successful. When you think about from the turn of the last century, the check system was the United States' large value system. Then technology created the telegraph and transformed the large value system into an electronic-based system.

Checks evolved then to become an ever greater component of the retail payments system by the end of World War II. Writing checks became something that everybody did with increasing frequency, and check-writing grew dramatically from that period of time through the 1960s and 1970s and peaked in the mid–1990s. Check usage is now falling off at an ever faster pace as electronic technology has usurped the paper technology. Now what's going to usurp that to make things ever more efficient in the future, I'm not exactly sure. It's obviously got something to do with the greater use of personal electronic communication devices and platforms. It's amazing to me when I think about walking around without a cell phone today. I can't think of leaving the house without a phone and being in constant contact. Yet for a goodly amount of my life, I would not be in touch with anyone unless circumstances warranted a call.

So our lives have changed dramatically. There's this constant communication/social networking phenomena. Facebook, Twitter, there's all this social media, which is just unbelievably inane. And all the text messaging that the kids do. I ask my daughters why text, why not call? They claim that it is a more effective form of communication because you can broach a difficult subject and you don't have to deal with it in its totality, but rather in piecemeal chunks at a pace that is agreeable to each person involved. You can give your thoughts on paper and move on. Is this approach superior in some way to problem-solving, at least on a personal basis? Does this move us forward, or does it just defer resolving issues? I don't know. I see some merit to some of this. I quite liked it when, as my girls got older and they started to drive, you could know that they arrived at their destination. Now, they've got the GPS (global positioning system) that will automatically provide all sorts of useful information, such as keeping track of people. And if you don't know where your kids are, you can say "Sprint, tell me where my daughter is now."

MS. FOX. And the applications for payments are yet to come to the United States. They're being experimented with, I'm sure.

MR. WALTON. There are different technological platforms. One benefit that came out of World War II was that the entire infrastructure of Europe was destroyed, so they got to start afresh. They got to leapfrog us. Likewise with Japan. We had the system in place, and now we're in the process of replacing it, but take a look at our wireless phone service. You've got two basically very different systems. That's why Sprint and Verizon will merge and the other telecoms will merge and you'll have two, but is that necessarily efficient?

MS. FOX. Plain old telephone service over the landlines versus the cellular?

MR. WALTON. No, it's the different types of cellular technologies to which I'm referring. But, yes, the landlines will be with us for a while because the cell still isn't exactly ubiquitous and up and available 100 percent of the time. Look at what happens in crises. Look what happens when you go to a college football game. You can't get cell service because you've got 100,000 people all trying to say, "Did you see that play?" There's some technological improvement needed there before that's going to replace landlines. But there are going to be just incredible changes in our lifetimes.

Dependence on Telecommunications

MS. FOX. Over the last 10 or 15 years, the Federal Reserve has been dependent on telecommunications.

MR. WALTON. Particularly after 9/11. What we've found in the work that we've done subsequently—one of the last papers that came out of the post-mortem analysis of 9/11—concerns telecommunications redundancy. We found with telecommunications that there isn't the redundancy that we thought there was. That's because, in this extremely complicated system, over time things change because of the nature of the demands by the various telecom customers. And pretty soon on the pathways where you thought you had redundancies, you may end up with single points of failure. I don't think the phone companies realized the extent of the issue. Ken Buckley has spent a lot of time working on that issue. It's one that I think is not going to be easily resolved. Technology will provide a solution at some point on that but probably not imminently.

On the whole, yes, the Federal Reserve has somewhat of a handle on the limitations of existing telecommunications systems and the changes needed to address those limitations. In addition, even though the Federal Reserve doesn't have explicit statutory authority to do certain things, I believe you're going to see the Congress make explicit our responsibilities in a number of areas. For example, I think the Congress is going to identify explicitly who has what responsibility for the payment system, for supervision and regulation, and for systemic risk.

MR. HAMBLEY. The Fed itself is about to ask explicitly for the right to be a supervisor and regulator of systemically important payment and settlement systems. It doesn't seem that there's any other obvious candidate and that area needs attention. It's plausible that we would end up doing that. But my question was a bit different. Do you think the Fed's role in the payments system has been a constructive one, and a leading one, and one that encouraged socially beneficial outcomes, even though it wasn't always easy for the Fed to do those kinds of things?

MR. WALTON. I would say broadly, yes. Sometimes I think the Fed doesn't lead the market. In a lot of the research and work that was done with on electronification of payments that's taken place in the last 20 years, the Fed has probably been more of a leader in that. But a lot of the change that occurred reflected the market reacting to changing market demands. We're seeing the direction of the market changing and we're trying to provide services to keep up with the market. I'm not sure how much leadership at times the Fed has had. Sometimes the Fed has had significant leadership, like when it became apparent that checks were going to be the predominant payment system in the 1950s and the Fed worked with the standards groups to come up with the MICR encodings so that check processing could take advantage of technology and be automated. Similarly, with the work that was done in the ACH arena after the passage of the EFTA and on and on. The Fed has probably become more aware of what it should do. The PSDC (Payment Systems Development Committee) and now the PSPAC (Payment System Policy Advisory Committee) has explicitly recognized that the Fed can lead and be a more proactive change agent. There are issues that need to be addressed. The private sector may not be picking up on some things, and having the Fed host symposiums, conferences, or conduct studies and research helps to identify these issues. This current economic crisis has derailed a lot of this work, but my guess is, after things stabilize, the Fed will get back to systematically identifying and addressing issues that arose because of the crisis or were obvious voids, or other areas that need to be shored up. There's going to be a lot more grist for the mill after some future point.

MR. HAMBLEY. My perception is that the Fed has become more of a leader even though it wasn't literally required. The Fed was a participant before it was a leader. The Fed is increasingly a leader. The more it knows, the more it becomes aware of the potential for constructive change, the more it might lead the Fed to do things. It is part of the growth of the Federal Reserve, just as we've seen a lot of other kinds of growth recently. But there's an innovativeness that I don't think was there before.

MR. WALTON. I think so. Some of the people that are in leadership positions in the Fed have recognized that and are willing to challenge the status quo. For example, I particularly enjoyed working with Louise Roseman as the RBOPS division director. The Board has recurrent processes, and many will go through the motions to be done with them. But every year, Louise challenges staff to ask and answer, "What can we do better?" and "How can we do these things more effectively?" Some staff become frustrated with that because they think, "I learned how to do this, and now you're changing it. Damnit." But you have to have that continuous change mentality, if we're going to stay on top of the game because the game changes so quickly. You need to have people who are forward thinking and willing to change. The rub is that the processes and procedures that underlie all that have to change to be more flexible, to be able to move with the times. Some of those processes and procedures have lagged and that creates a lot of staff conflict because it creates more work, oftentimes unnecessarily.

I remember writing Federal Register notices; it was such a chore. That's why there were so few in the early 1990s. It was laborious. There were tremendous layers of review. Hell, we were cranking them out every few months towards the end of the 1990s and in the early 2000s because we managed to streamline the process. People became familiar and comfortable with the process and the thinking that it's okay to seek more input about difficult issues that need to be vetted at a higher level or with a broader audience. It gave us a chance to lay out the issues the best we could and go out and solicit other perspectives and thoughts about the issues. Then we would assess that information and use it in our decisionmaking.

Payment System Risk Policy

MR. HAMBLEY. Talk about the development of payment system risk policy. One of the first things you did was to measure daylight overdrafts, and that was one of the first things that led to the development of this policy.

MR. WALTON. There are always a few individuals at the Fed who think about, "Where the next big boulder is going to come from?" And it's critical that we have that sort of thinking. Sometimes that leads to a lot of wasted motion, which unfortunately is inherent in that process. You've got to go down the path of asking these questions and sorting out, "Is this a problem?"

In some sense, the payment system risk policy developed from the notion that we used to be a paper-based accounting system with a definitive end-of-day. Now it's all automated and everything happens in short order over a 24-hour day. What does that mean in terms of what is the position at any moment of time for an institution, an organization? The FDIC is struggling with this right now. What if you have a midday failure of a large institution? Who owes what to whom at that moment? How do we even know what that is going to mean? So they're trying to figure it out. We've got significant deficiencies in our systems to be able to sort that out, and how can we do it in a sufficiently fast fashion so that we can continue operations without having any sort of disruption to the local economy or macroeconomy? Those are questions that need to be asked, and they've got to figure out ways to answer them. Until you ask those questions, you won't know the answers.

When we looked at payments system risk, there was this notion that there could be all these credit exposures and, if you did have a bank failure, what are those exposures and what are the ramifications of those exposures? In the work that we did on payment system risk, I also looked at transactions information from CHIPS and I'd try to figure out, based on their failure rules that, if a participant was unable to settle its payments, what are the implications if those transactions were unwound? We had massive amounts of data. Computers allowed us to crunch through all this. Previously, the technology didn't exist to figure it out. That's why you always had end-of-the-day accounting. It was the one point in time that everyone could agree that all transactions had to be reflected in some final income statement or balance sheet.

Well, with our data and programs, we were able to simulate what would happen if a failure occurred on CHIPS. That led us down some productive paths and some not-so-productive paths. Some of the specific payment system risk policies that were originally articulated were not useful. There was a lot of wrong-headed thinking, a lot of wasted motion over 20 years. If you look back on it, some of the things that were of concern just weren't realistic or likely to occur. Other things, though, were, but it's not because of whether they got the accounting right over the course of the day. It's rather a bigger story. It was initially the operations that kicked off this line of inquiry, but now it's really how do we manage risk? And obviously we've done such a great job lately.

This current crisis will focus policymakers more on how we can know what actions are going to lead to good outcomes or lead to really bad outcomes. Thinking about payment system risk has been useful but, as we've seen, it is a broader subject than perhaps what our policies suggest. The events over this decade—and this has been an unbelievable decade—have probably made everybody more aware that their jobs aren't just jobs. You're living and breathing your responsibilities every moment and you're constantly engaged—if you're going to be engaged you have to be engaged 100 percent of the time, and you've got to be thinking about all of the possible ramifications. I used to leave here on the weekends or whatever but, if there was a news story I'd be thinking, "How is this going to affect me? How is this going to affect the Reserve Banks? How's this going to affect payments?" You're working 100 percent of the time, and quite frankly that gets to be pretty exhausting. I've been enjoying my not quite a year off, but I was tired. People just don't understand that it's very wearing when you're always having to be engaged 24/7, 365 days a year. That's the nature of how the economy, how policy, has evolved. The work that we did early on was just kind of a thought exercise. Now we're living and dying in three quarter time in the here and now.

Vulnerabilities in the Financial Infrastructure

MR. HAMBLEY. We have a more profound understanding of the interrelationships in the economy, and how problems in one part of the substructure in the financial system can cause all kinds of spillover effects. The more we focus on this, the more we realize the potential fragility of things, and the need to pay conscious attention to it, and to think in advance about what you can do to make the systems less vulnerable if there are failures in parts of the economy.

MR. WALTON. We're really going to struggle with the latter. How do we make it less vulnerable? Right now, you're going to have the Congress passing all sorts of laws, and it's likely going to go to extremes in over-regulating and building in preventative measures, when you need to have a perspective of the whole system. That requires an awful lot of work because the whole is very complex. Most members of the Congress don't have the necessary perspective or understanding of our complex system to pass laws that will assure future good outcomes. We will see a lot of unintended consequences. Most congressional members just want to fix a problem, but they don't know exactly what problem to fix. They don't know what caused the problem, and they don't know the implications, the unintended consequences, of whatever fix they put in. That may then lead to ever more problems. One thing great about the United States and its economic system and its economy in general is its flexibility. Our system is able to adapt quickly to challenges, and historically been successful in overcoming significant challenges. If you start putting in all sorts of requirements that people and organizations have to comply with, all sorts of hoops, are we going inherently to reduce that flexibility and that ability to respond to future crises? That's going to be a result. And we may end up with some really bad outcomes on issues that we haven't even dreamt about yet.

MR. HAMBLEY. We also had a lot of flexibility that contributed to our current situation. It's not obvious that one or the other is appropriate. Given the complexity of things, it is possible to make mistakes that are potentially very expensive in some sense. It also puts much more pressure on people who are technically knowledgeable to make sure that whatever they see as the issues are addressed early, rather than attempting to deal with them later on.

MR. WALTON. Yes, but increasingly because of technology, what do you see? You see a lot of particularly younger generations who are not necessarily wedded to this concept of being on 24/7. There's this notion of, "I want to have my work/life balance. I'm willing to work hard and do a great job during the day, but at night I'm walking away from here." And if stuff happens, I'll see you in the morning. The staff has gotten to be ever more technologically proficient, and focused, but the staff also wants to have the good life at the same time. There are a lot of these conflicts, and I'm not sure how they're going to be reconciled. You're always going to have this category of people who are extremely dedicated and work is their life, effectively. And you're going to need them to assure that we don't have unnecessary bad outcomes. But you're right, the system is so complicated, and increasingly complicated, that it's going to be impossible not to have a little road block or a bump in the road periodically.

Recollections of Past Fed Chairmen: Burns, Miller, Volcker

MR. HAMBLEY. During your long career at the Board, you saw five different Fed Chairmen, some more closely than others. What do you remember about Arthur Burns, G. William Miller, Paul Volcker, and more recently Alan Greenspan and Ben Bernanke?

MR. WALTON. Burns was on such a pedestal when I came—he and the pipe and the white hair and the cloud of smoke. You saw that in every picture. He was portrayed like one of those gods on Mount Olympus. Unfortunately, his image was cracked and shattered later on in his career. I thought he was a good central banker. But during the wage and price controls and the inflating the economy and all of that, he succumbed to the political pressures of the Nixon Administration. That's my impression of him.

G. William Miller was a guy who could run railroads. You need a decision? He'll give you a decision. You need to change that decision at 2:00 this afternoon, since it was just decided at 10:00? He'd change it. He would make decisions. He would move things along. But he wasn't a policymaker. He wasn't somebody who would be appropriately thoughtful and think about the broader ramifications. It was like we were in a process mode, and staff would come up, they'd make a recommendation, yes or no, move on.

With Volcker, with Greenspan, with Bernanke, you do get a lot of vetting, a lot of thoughtfulness about what to do. Volcker was the right guy at the right time. I've got a lot of confidence in Tall Paul. He has a clear vision especially about macroeconomic issues, and he's able to make sense out of an awful lot of noise and stay on path. While there were a lot of people who criticized him for creating a recession that was very draconian at the time, I thought relative to what might have been, ex post we can say, "We could have been much more gradual in ratcheting down the inflation, and we would have been okay." But at the time we could have just walked right off the precipice into hyperinflation, and we would have set this country's economy back 20 years back in the early 1980s. That didn't happen.

He was pretty straightforward, although he mumbles. He even mumbles today so you can barely understand him. Back then he was sucking on the cigar and mumbling, so there was a reason for his incomprehensible mutterings. To be successful, usually one must have good public-speaking skills. He never had good public-speaking skills, but he was an extremely bright guy, and he could convince others what needed to be done. Although, at the time, there was support in the Congress and elsewhere that allowed him the latitude to take those difficult steps to get us off the brink of hyperinflation. Even though at times he had little use for Board staff, he did recognize the need to reward staff. Early on, when I was in the Banking Section, we were trying to automate this very paper-intensive system that supported the FOMC and the Bluebook process. We moved towards the more automated system that we have today. We had to do some heroic exercises. We'd be here all night, and for weeks it'd be just a gut-busting kind of exercise. For example, we would recalculate the monetary aggregates' seasonal factors manually, just before the February FOMC meeting. Then we automated the process one year, and it was a particularly heroic and Herculean effort. Volcker recognized this. He came to the third floor and had a champagne toast for the few of us who pulled that off. That made everybody feel that the effort was worth it. How much did the bottle of that cheap champagne cost?

Little things like that make a huge impression on the staff. There are so many people now that say, “We can’t do this. We can’t do that.” when discussing staff recognition. When you talk about the staff and getting them to contribute to the organization’s mission, sometimes little things, small tokens of appreciation—even though they may violate whatever stupid policy we’ve got in place at the moment—those things really resonate with the staff, including senior staff. Tom Simpson was particularly pleased about the champagne toast, as were Brian Madigan, John Williams, and other staff in the Banking section.

MR. HAMBLEY. This was when you were calculating the “M’s” (measurements of the money stock)?

MR. WALTON. This was the “M’s”, yes, and the seasonal factors for the “M’s” and trying to move from our understanding of basic “Keynesianism versus monetarism” debates that were raging in the late 1970s and early 1980s and recognizing that things are a little more complicated than that, because those arguments always ended up in some sense getting back to some sort of philosophical first principles, and it’s like, “No, we’ve got a central bank to run.” We have to figure out how to prevent inflation, so what do we need to do? Those are my memories of Paul Volcker. I thought he was extremely competent. He also had a lot of competent senior staff who have subsequently disappointed, like Dick Syron. He did a terrible job over at Freddie Mac, I mean just terrible. Volcker was always the public service sort of guy through his entire life, even after he left here and got a million dollar paycheck from whatever Wall Street firm.

MS. FOX. You're talking about Dick?

MR. WALTON. I'm talking about Volcker. But then Dick, I thought Dick did okay. He was president of the Boston Fed, then he headed up the American Stock Exchange, then he went to some private-sector firm, I forget where. But it seems like the further away from public service he got, the more he sought private sector rewards, it seems like it was more about just getting more.

Volcker was never like that. That's just amazing to me. He could have gone and made a gazillion dollars, if he wanted, but that apparently never motivated him.

Making a Career at the Fed

MS. FOX. You started working at the Board as a young person and worked your way through the ranks. Talk about that.

MR. WALTON. You can make a lot of mistakes and do okay. But you have to acknowledge your mistakes and say, "I screwed up," and you've got to learn from your mistakes. You can't make them twice. It's hard for young staff to understand that, particularly today. Nobody wants to commit. You'll be at a meeting, and you won't hear anybody say anything until whoever is the most senior person at the meeting says something. That was something that I railed against. I would always encourage my staff by saying, "If I knew the answer, I wouldn't need you. So tell me what you think." It's hard to communicate that in a way that staff believes they won't suffer if they speak up and say something that isn't well-received by management.

When I was younger, you had all sorts of different groups that had their proprietary interest and, if you were involved in a project, you always had to be careful about not stepping on toes. There was an excess of caution in that regard, and that kills a lot of creative conversations that you might have and might delay some of the solutions and certainly contributes to hard feelings among staff. I started in research. You pretty much get pigeonholed early on because of what you're working on. But most economists specialize in a particular area. They do whatever their particular interest is, and they do it for their career. I wasn't built quite that way. I did my own cross-training because I moved around. You figure out those areas where you might have an interest, and you develop an understanding of that area. You talk with the people in the area and you develop a rapport with them, so that when a position becomes available, you can more easily sell yourself and become a viable candidate for that position as opposed to just, "I'm tired of this job. I'm going to go apply for that job."

It depends where you grew up. I grew up in the Midwest, so I'm thinking the world's a meritocracy. If I work hard, I'm going to get rewarded. No, you work hard, and you work hard. And if you want to get rewarded, you've got to say, "Toot, toot" on your own little horn, but you've got to do it in a way that's acceptable within the social norms of the organization. Figuring that out is tough because nobody tells you what that is. It's a learning process.

MS. FOX. What's an example of that?

MR. WALTON. When I first came to the Board, I was working in the Microstatistics section. But I studied money and econometrics at Maryland so I wanted to get into the "M's", the monetary aggregates. I got to know John Williams in the Banking section by playing lightning chess with him. You each get five minutes to play a chess game. You win by either checkmating your opponent or if his five minutes expire before yours. It was a way to get to know John and to understand what he was working on and how things got done. I also enjoy chess. So that was one example.

MS. FOX. Many of Board staff have worked here for a long time and don't know much about the workings of other organizations. There are positional, political barriers, and organizational barriers here, but there are no intellectual barriers. If you have an interest in something or an idea about something, people will not stop you from talking about that and thinking about that outside of all these constructs.

MR. WALTON. Right, unless you have a failed idea or you have an idea whose time is either too far removed or too far in advance.

MS. FOX. Unless you're just a pain about your idea, right?

MR. WALTON. Exactly. But it was through working in these different areas that I saw the payment system risk issues early on, which introduced me to the Reserve Bank Ops group; they were the ones involved in payment operations. That's where I got the information to be able to run my models and come up with how we're going to define this or that, what the implications are of these models on operations, risk, failures and the like. That allowed me to segue into RBOPS. Similarly, when the Ted Langevin fiasco occurred, and a position opened up in the Banking section, I was able to move on over there because I was a known quantity. I could do the work; I had demonstrated that. That's one thing that is changing. Historically, you had to work at that next level before you were promoted to the next level. You had to be able to do the job before you got the job. You were always feeling like you were running behind where you thought you should be, and in some sense that's an organizational detriment. It doesn't recognize the contributions as much as perhaps the Board should for some folks. There are some notable exceptions to that but, by and large, you're slogging along, and you feel you should be farther along in your career than you are. They're trying to do some things to remedy that now. But still you can get that sense.

MS. FOX. Well, there's a problem in an institution where people come and stay. In some sense, it's a good thing, but it does mean that there are all kinds of limits to career potential.

MR. WALTON. That's right. Because people don't move, historically, the Board has low turnover. The organization isn't required to do what a lot of other organizations do where they are constantly trying to increment the human capital of the staff in ways other than in their specific area of expertise. That can be challenging to some folks that feel pigeonholed and would like to do something else, but there's no real effective mechanism to allow them to explore what those alternatives might be.

The Board's HR (human resources) function is abysmal. In part, that's because they've had a lot of turnover. Also, there's a series of objectives that they're trying to meet for the organization that are ancillary to the main mission of the organization. I was involved in a situation, when I was a little more senior, where I was called in to evaluate an individual who had been a statistical assistant. The employee had been told by a section chief that, if they got their degree, they could become a research assistant. This person worked for six years, got a degree, and then said, "Why am I not promoted to a research assistant? You said all I had to do is…" We don't spend a lot of time managing people. Either you have a natural management aptitude or you don't. We don't train people to be effective managers.

MS. FOX. Since you left the Board, there is a new program.

MR. WALTON. I went through so many managerial fads, I can't count them. There were all sorts of them. The issue is that different groups within the organization have a completely different view of what their jobs are, and they don't have a complete view of the organization—the Board and its mission holistically—and how they can make it better. I didn't do stuff throughout my career because it was going to get me promoted. It was what I thought was the right thing to do. And over time that was recognized by people. "Oh my God, he actually is trying to do the right thing." Maybe he's not articulating it well or maybe he's going about it in a bullheaded fashion—because I can be somewhat direct and straightforward—but I think people finally recognized that and they said, "He's got a good point." That's when I was promoted.

Chairmen Greenspan and Bernanke

MR. HAMBLEY. By the time Alan Greenspan came in 1987 you were higher up in the organization, and probably had a little more direct contact with him. What are your impressions of him and of Chairman Bernanke?

MR. WALTON. I was still in Monetary Affairs. There were a lot of issues with the economy in the late 1980s, early 1990s but, by the time you got to 1992, things had become quiescent in the monetary policy world because we had low inflation, we had robust growth as far as the eye could see, and it was very quiet.

I'm a self-professed action junkie, and things were starting to bubble up in the payments area so I moved back to that area in 1992 where change was picking up. My experiences with Greenspan had to do with the monetary reserves and aggregates and support of the FOMC before we got into this very quiescent period. You knew his background: He had done a macro model, done all sorts of things in government, and he seemed like the right guy. He seemed like a good fit for the organization as the Chairman. There was a lot of confidence in him.

What really struck me was when we had the market crash in 1987. We're going about doing our work. We didn't have the Reuters terminals everywhere, only in a few offices. We weren't all linked up. There wasn't the internet. Information wasn't as fast and free flowing as today. What struck me was that we'd finished up the monetary projections for the day and somebody told us that the market is down 25 percent or whatever it was. It was like, "Holy smokes." But there wasn't any panic in the air, and it gave me a tremendous amount of confidence that, even though the economy was at sea in a significant storm, everybody's pretty calm about it. We'll sort it out and figure it out. Greenspan was a calming influence. That resonated with the staff and reflected the staff's general demeanor during those times. Little did we realize that that was hardly anything.

Then I got more involved with him in the payments arena. RBOPS staff worked largely with Vice Chairman Roger Ferguson and the other governors. Governor Edward Kelly was the head of the BAC for a while, likewise Vice Chair Alice Rivlin. But when we were working on the Check 21 legislation, Greenspan was very supportive. He had a short ceremony in his office where we received a plaque with the legislation and a signed thank you note from Greenspan framed as recognition for our efforts. He took time out of his day to do that—again a relatively little thing that the staff greatly appreciated.

We wrote a speech for him to give at a NACHA conference. He called me in, asked about a particular part, and asked what we were trying to convey to the audience. I think that was around 1996. We had whatever materials in the speech, and he was interested in this one thing. He said, "What do you mean by this?" I said, "Well, da da da da." And he said, "Well, why didn't you say that?" Point taken, Mr. Chairman.

MS. FOX. He would have staff write speeches on those technical issues that he didn't spend time on like payments and bank supervision. But his monetary policy speeches were a great deal of his own hand, and sometimes he'd get some help.

MR. WALTON. Yes. Ben Bernanke seems to be more in line with the recent additions to the Board like Vice Chairman Alan Blinder. By that I mean that he wanted to be accessible to and collegial with staff. He would sit down for lunch in the cafeteria with different groups of the staff. When he first started doing that, the staff was just terrified. People were thinking, "Oh, my God, did I make a career-limiting gaffe in some comment?" He was just a regular guy. I did not have an opportunity to watch him perform last night on 60 Minutes, but that seemed to be well-received and involved speaking in a way that we've all come to know and understand, this notion of transparency. Personally, I think transparency is a little overrated because it can get you in trouble. There are some things with the macroeconomy—people don't understand it well. When you had Greenspan making some of his impenetrable comments, people would nod their head and say, "I guess it's okay" and they'd leave it alone. Now everybody is opining. You've got all these talking heads and just anybody who can breathe making comment, basically interpreting stuff that they have no understanding about. That has created some of the problems that we're in today because people know we're in a serious situation and you've got all these guys out there saying we're falling off the edge of the world, and if you can't tell me exactly where the bottom is and when the recovery is going to start, then "we must be going to hell in a hand basket" kind of thing. You've got a lot of people out there who hear this stuff and see it in the newspapers or on the radio and they're thinking, "Oh my God. This is really a terrible situation." That has created a huge amount of fear and behavioral change that will take a long time to sort out.

MR. HAMBLEY. In his effort to be transparent, he is not going to call this situation any better than he sees it. He will say something like, "We're experiencing a severe recession." True, but it's not a deeply reassuring statement.

Governors Who Chaired the Reserve Bank Activities Committee

MR. HAMBLEY. Edward Kelly, Roger Ferguson, and Don Kohn were Board members that chaired the BAC and you interacted directly with them as your overseers.

MR. WALTON. It depended. When we weren't involved in crisis management, we spent an inordinate amount of time overseeing the Reserve Banks' budgets and their annual evaluation. We'd spent way too many resources on some things. By and large, the Reserve Banks are well managed, well run, and we don't generally find big problems out there. Never have. There are some exceptions, but by and large things go along swimmingly. They're a good group of people and they're working hard. You can quibble about how much they might spend on this, that, or the other thing. Everybody likes to build monuments to themselves for Christ's sake, like that Houston building that should never have been built. I'm not sure about the existing Kansas City building, but since I'll be out there I'll go take a tour and surprise them on Friday as a private citizen. I thought those resources spent on overseeing the Reserve Banks were not well spent, and that we should have been doing other things. Doing more research, figuring out how to improve the payment system, things like that. You work on risk issues. How do you conduct effective oversight? You try to get ahead of the game like where the Fed is now spending all those resources doing that.

I viewed the BAC as analogous to a board of directors for a private firm. The BAC would have each Reserve Bank's senior staff in twice a year, once for Bank evaluation and once for the budget approval process. Those were the only times that Board staff could send messages effectively to the Reserve Banks. We always had to be careful about what messages we sent. Over time, what I have observed with the BAC is that they relished staffs' unvarnished view of what message should they send. Don Kohn and Roger Ferguson did a very good job of listening.

You could tell Roger all sorts of information. Then in a meeting, he'll put all of it on the table in a way that was smooth and seamless in the course of the conversation with the Reserve Bank staff. I'm very impressed with him, and I suspect we'll be seeing more of Roger at some future point. But the Wayne Angell's and the Governor Kelley's seemed to get mired in so much detail, and they would have their own personalities get involved with particular decisions.

MR. HAMBLEY. It was a more quiescent time.

MR. WALTON. Yes, it was. Right. There wasn't anything more important to divert them. Is that a failing of staff to focus them? Suggest that "these are things you should be involved with" or is it their failing not to be more thoughtful about the mission and the role of the Fed and what the future should or might bring? I don't know. It's a combination of the two because it's easy when things are quiescent to say we'll just do this and we'll chew on this bone and move along.

MR. HAMBLEY. Governor Kelly had to testify several times before the Congress about Federal Reserve budgets. I'm sure that that was important for him, and probably colored his view of what was important for him to do in his position.

MR. WALTON. Right.

Other Fed Staff and Further Memories of Vice Chairman Ferguson, Vice Chair Rivlin, and Chairman Greenspan

MR. HAMBLEY. Who influenced you during your Board career? Did you have mentors?

MR. WALTON. There are a lot of bright and capable people that work for this organization and that have worked for this organization. I've learned a lot from them about the technical aspects of the job and the different policy perspectives. I've learned probably what not to do more than what to do from people. Everybody who comes to this organization is very principled, and they generally want to push their particular ideas. But there's a limit to what you can do, like Paul Spindt, who developed a transactions-weighted measure of the money supply—a series that he had created—and then Volcker saying, "There's less here than meets the eye" at a Board meeting. Paul Spindt went to teach econ at North Carolina State shortly after that.

But there were some folks who were so principled that they created more problems for this organization. A specific case in point was when we sent up a report to the Congress about the check-hold periods. The findings and recommendations ticked off Representatives Maloney and Gonzalez. We had done a study around 1995. In the study, it was demonstrated that the time frames for funds availability that we had currently in place were reasonable given the check forward and return processing cycle. But we also recognized that, for local checks, it took longer. Well less than half of the local checks were being returned within that two-business-day window. Florence Young put that in this report and made a recommendation to extend the hold period for local checks, which was politically tone deaf of us. We argued about this because I thought that was just insane. This was like, "Let me put my head in the guillotine and say 'Go ahead, let it go.'" And they did. We got our head handed to us.

MR. HAMBLEY. What was the recommendation?

MR. WALTON. That we extend the local check-hold period. I thought, "Oh, my God. You don't want to do that." Clyde Farnsworth let that go through. Everybody let it go through. My staff all knew 100 percent that that was a really stupid thing to do. But we couldn't dissuade her. We couldn't dissuade Clyde, and it went. We've been paying ever since for that.

MR. HAMBLEY. Truth-telling is not always what you want to do?

MR. WALTON. You want to be circumspect about what messages you want to give people. Sometimes, not every message is desirable. That was one thing I learned.

MS. FOX. That's a good example of not reading the political—

MR. WALTON. —tea leaves correctly. Yes.

MS. FOX. Determining what is accomplishable is an important part of what the Board has to do. The Board members have to be aware of what is an acceptable, incremental, politically viable improvement.

MR. WALTON. Right. And that requires them to have an understanding of their audience. Roger Ferguson did a tremendous job because he had a good feel for when we could push. Alice Rivlin, for example, lacked that. She wanted to mandate all sorts of outcomes. She came in as Vice Chair, and she wanted to have immediate impact. She said, "We're going to push the paper out the door, and we're going to go immediately to electronics." You couldn't find any support amongst the bankers or anybody, by and large, in the operational area. She just ignored that and said, "We're going to go down this path." That created the Rivlin Committee report and all the fracas that that caused, and that ended up not being a Board report because of its recommendations. The original set of recommendations were untenable politically. It was like she was tone deaf. You would have thought, given her background, that she would be less tone deaf than that. Greenspan handled that masterfully because she was his buddy. He grew up with her. They knew each other. He had to say to her effectively, "This is a stupid idea, and we're not going to go down this path." The way it came out was, "There seems to be a difference of opinion on this and that. Why don't you guys go back and have a relook?" It was very nicely done, and the report never resurfaced at the Board table.

Greenspan was a good operator. I feel bad for him because I thought he did a good job and now is subject to severe criticism. He was a little tone deaf about consumer protections, and Governor Ned Gramlich was probably more in tune with what needed to have happened at the time. When you think about it, even in our personal experiences with mortgage brokers—some of the sleaziest sons of bitches in the world—they're just trying to push as many mortgages as possible because they're getting a commission on each mortgage. Aside from that, Greenspan did try to raise the big boulder issue with regard to the housing GSEs (government-sponsored enterprises). That was not well received by the Congress because, "Why do you want to fix something that's not broken?" "Because it could break really badly" was the answer.

MR. HAMBLEY. I remember how lonely that was, and how remarkable that by that point he had such great stature that he could force the GSE issue onto the congressional agenda and force a consideration of it. Not a resolution, but a consideration. I have no doubt that the Federal Reserve had a great deal of influence on what ultimately happened on that issue. But by the time it happened, it was basically too late.

Thank you for taking the time to talk with us.