Federal Reserve Board Oral History Project

Interview with

Edwin M. Truman

Former Staff Director, Division of International Finance

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Location: Washington, D.C.

Interviewers: David H. Small, Karen Johnson, Larry Promisel, and Jaime Marquez

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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November 30, 2009, Morning (Part 1 of 3 of the Interview)

MR. SMALL. Today is Monday, November 30, 2009. This interview is part of the Oral History Project of the Board of Governors of the Federal Reserve System. We are interviewing Edwin M. (Ted) Truman, a former [staff] director of the Board's Division of International Finance (IF) from 1977 to '98. He followed Ralph Bryant as director of that division. Mr. Truman worked at the Board from 1972 to '98.

I am David Small, from the FOMC (Federal Open Market Committee) Secretariat in the Division of Monetary Affairs. I am joined by other former and current staff of the Divison of International Finance: Karen Johnson, a former director of the division; Larry Promisel, a former senior associate director; and Jaime Marquez, currently a senior economist. This interview is taking place at the Board.

Thank you, Ted, and our distinguished guests for being here.

MR. TRUMAN. I thank you all for joining me here today. And I'm honored to be part of this Oral History Project.

General Background and Experience at Yale University

MR. SMALL. Let's start by having you discuss some of your early years, in particular your education, with emphasis on your formative experiences, influential teachers, and life before you came to the Board.

MR. TRUMAN. I came from an academic family. My father was a political scientist. And like many people who greatly admire their parents, I thought I was going to follow in my father's footsteps and become an academic. My wife still says she thought she had married an academic and was misled. She also says that she has greatly benefitted from the by-products of my career in being able to travel more than she ever imagined would have been possible and to

meet many interesting and important people. She has been very much a blessing to my career, including tolerating my long hours.

I went to Amherst College as an undergraduate. I majored in economics rather than political science, probably at the urging of my father and interesting people like Emile Despres, a great name in international economics in the 1960s. Despres told me that one advantage of economics is its usefulness in careers outside of academia.

MR. SMALL. What was your father's argument for urging economics over political science?

MR. TRUMAN. He also thought that economics offered more career opportunities than political science. If I had majored in political science, I probably would have become a lawyer if I had not gone on to a Ph.D. As it was, I have spent a lot of time with lawyers in my career. I thought a bit about going into political science, but the Amherst political science department was then, and still is now, deeply divided in its methodological approaches. (I did take three semesters of political philosophy from a former student of my father's, George Kateb, and learned a great deal.) Moreover, I did not want to become the other, and likely substantially less important, political scientist named Truman in the field. I did play with the thought of going into international relations because I was interested in international affairs, maybe because my parents had taken me to Europe when I was 13 and we traveled all over Europe. In doing so, I became aware of, and interested in, the rest of the world to a degree that the average American of my generation and socioeconomic group perhaps was not.

MR. SMALL. What year was that?

MR. TRUMAN. 1954.

MR. SMALL. Aren't you indirectly related to an even more distinguished Truman?

MR. TRUMAN. Oh, Harry Truman! Truman is a relatively uncommon name, and, yes, we are from the same family. Our common ancestor arrived around 1630 when two brothers came over from England. One brother landed in New London, Connecticut, which is my branch of the family. The other brother landed in Virginia. This was presumably Harry's branch of the family.

I graduated from Amherst in 1963. We had the military draft then and, if you were a male, you had a choice of going on to further education or being drafted. I never thought of not applying to graduate school and I ended up at Yale, which was my first choice at the time.

The principal people at Yale who influenced me were Jim Tobin, Dick Cooper (who was then a young, fast rising faculty member) and Bob Triffin, who ended up being my adviser on my Ph.D. dissertation. All three of them were quite influential in forming my thinking. I did a thesis on trade creation and trade diversion in the European Economic Community or "Common Market." The idea was suggested to me by Dick Cooper. Then he came to Washington on leave to take a position in the State Department. Bob Triffin became my chairman.

Triffin did two things that influenced my dissertation. The first thing was the best thing that a thesis adviser could do. Like many thesis students, I was floundering after the first year of doing research. In those days, places like Yale tried to get you out the door in four years. I was about to go on the job market in the fall of 1966 and I felt I had accomplished nothing on my dissertation topic. I went to see Triffin about the first of September and said, "I'm really floundering." He said, "Why don't you go away, come back in two weeks, and tell me exactly what you think you have learned?" So, I went away to work for two weeks and came back to him with some charts and tables. He said, "Fine, go write it up." That was a great service to me in getting me to get on with my disseration, one which I tried to offer to others as much as

possible during my career, in some cases more successfully than others. Second, once I sat down to write, I wrote an introductory chapter about the origins of European economic integration. He said, “You don’t know what you’re talking about. Throw it out.” [Laughter] Now, I use that story whenever I give a talk on the European debt crises.

MR. SMALL. Nowadays, a lot of dissertations are three or four papers, loosely related, that you can then uncouple and fire off to the journals fairly quickly.

MR. TRUMAN. Well, that was not the model used at Yale in the mid-1960s. The approach at Yale in the economics department was to state the problem or issue, review the literature, look at the theory, and apply the theory to an empirical situation.

I had a theoretical chapter that described the issue of trade creation and trade diversion, and I drew my diagrams about the welfare benefits (advantages and disadvantages) and where they came from. The contribution in my dissertation was to look at imports coming from inside and outside the Common Market as a share of apparent consumption: domestic production less exports plus imports. So, I had to build up series on apparent consumption for a number of sectors and I found data that I could use for production in a number of different sectors within European countries. I looked at how those shares of imports from inside and outside the Common Market changed over time, and identified one type of shift as due to trade creation (internally) and another shift as due to trade diversion (from trade outside the Common Market). But it was very unsophisticated economics even for the time: it was more discussion, less econometrics, a few tables, some diagrams.

MR. SMALL. But it was one topic?

MR. TRUMAN. It was one complete topic. One of the reasons that Yale did it that way was because Yale had first rights to your dissertation. Unless you petitioned out of it, you were

required to write up your dissertation in a shorter version and publish it in the Yale Economic Essays. (Initially this approach was intended both to give Yale a publication and to give the student a publication.) So, you see in my curriculum vita that one of my early publications—in the spring of 1969— was "The European Economic Community: Trade Creation and Trade Diversion." Three years later, I published an update in the *European Economic Review* as part of a project that I was working on with Bela Balassa when I came to the Board.

MR. SMALL. Did you have a final defense?

MR. TRUMAN. We did not have a final defense at Yale. You had a defense of your prospectus, but you didn't have a defense of your dissertation itself. I submitted my dissertation to three readers: Bob Triffin, Dick Cooper, and Stephen Hymer. Steve was a very good economist whose fields were development and international investment. Unfortunately, he died young and tragically in a motorcycle accident. His contribution to my dissertation was to tell me I was not writing a whodunit. "Put the point in the first paragraph!" [Laughter] His point applies to almost everything we write in economics, including briefings for the Board and memos to the Chairman. Dick Cooper was the third reader. You basically worked with a committee of two people—submitting your drafts to them—and then they brought in a third reader who read your dissertation draft and might also give you comments. Then the committee wrote up reports on the dissertation and said, "Yes, it goes" or "No, it doesn't go." So, there wasn't a formal defense. Some third readers became more involved than others. They acted sometimes to ensure quality control.

I prepared a modest, preliminary summary of my dissertation in the form of a paper, and I went on the job market with it. I visited the RAND Corporation, Wisconsin, Northwestern, and Michigan. There may have been one or two other schools. Yale was hiring that year and made

an exception to what had been their normal practice at the time, which was not to hire people who had done their degrees in the department. Thus, I received an offer. The next year, Yale hired Bob Goldfarb, which was also a little unusual. Yale hired six or eight people in 1967, a big expansion in the number of assistant professors.

I didn't want to stay at Yale after graduate school. I thought it would be better professionally to go to some place new. The place where I had a chance and I wanted to go to was Wisconsin. But despite the best efforts of Jim Tobin, Wisconsin did not make me an offer. (The irony was that Wisconsin had an offer out to Arthur Laffer, and Laffer wanted the offer I had at Yale. He ended up turning down Wisconsin and going to Chicago.) The other offer I had was from Northwestern. I subsequently received an offer from Princeton and from the Council of Economic Advisors (CEA). Michigan turned out not to be interested. The problem with going to Northwestern, in my view at the time, was that Northwestern had basically one person, Frank Fetter, who was the only international economist there. I would've gone there and been the junior international economist. Frank retired two years later. I probably would have then become the international economist and spent the rest of my career writing and teaching—presumably in international economics. Although I was interested in international economics, both the trade and the financial side, I didn't want to just do that. I was interested in macroeconomics and other issues, which is the principal reason why I stayed at Yale. I thought there I would be able to teach and work on a broader range of topics.

So, I decided to accept Yale's offer to become an assistant professor. Yale also asked me to become the assistant director of graduate studies to help run the graduate program, which I did for three years. I got credit for some of my teaching through that assignment. So, I had some administrative experience, and was regarded as generally successful. Indeed, after I had come to

the Board on leave from Yale in 1972, Yale President Kingman Brewster asked me to come back to Yale to work in the provost's office. I had a reputation as an administrator, maybe also from my father who was by then a prominent academic administrator, first at Columbia and then as president of Mount Holyoke College. That was only time I said "no" to a president, and he did not expect it.

Jim Tobin, to almost his dying day, referred to a study I did, while at Yale, on the predictability of the success of graduate students at Yale. I put a lot of data onto computer cards and ran some relationships. It turned out that it wasn't so easy to predict success even in graduate school. The top two or three students who you admitted generally did pretty well. Beyond that, for the other 25 or so students, one could not predict anything based upon how the admission committee ranked them, how well they had done on their graduate record examinations, what their grade point average was before they entered, and so forth. But Tobin liked that report, which is one of the reasons, I guess, why he put me on thevisiting committee for the Harvard Economics Department many years later in 1985. The committee was charged with reviewing the program (graduate and undergraduate) in the deparment and making evaluations and recommendations. Typically, the members are from academia.

I will digress and tell a little story, probably for Karen's benefit. It's one of my favorite stories. [Laughter] As I said, in the mid-1980s, Jim Tobin became chairman of the visiting committee of the Harvard Economics Department, and he asked me to be put on the committee. His rationale was that the Federal Reserve Board is a big consumer of Ph.D.'s, so the Federal Reserve ought to have someone on the committee as a representative of the consumption side rather than all the people on the visiting committee coming from the production side. We met in the spring of 1986, I think, and we went around the table in the Harvard faculty club to identify

ourselves and our connections with Harvard. The first person identified at the table was Bob Rubin, whom I had never heard of at that time; he said had graduated (summa cum laude) from Harvard College. He spent most of the first day of the meeting on the telephone and disappeared the second day. Then there were various other people who had gotten their degrees at Harvard or had taught there—a few only in summer school—but all had some connection to Harvard. Three quarters of the way around the table they got to me. I had no connection with Harvard, and so I said, "I applied here to graduate school and I didn't get in, but I did get into my first three choices." [Laughter] Since I went to Yale to study with Tobin, I thought I was reasonably safe making that remark. It was one of the rare occasions where I was reasonably witty on my feet.

I have another story about Harvard. My father taught at Harvard immediately after the war, 1945-46. After teaching for three years and spending three years in Washington, which was six years of professional experience, he was initially appointed as an instructor or lecturer at Harvard. During the year, he was promoted to assistant professor and given a large scroll attesting to this fact. But he had told the chairman of the department that he was going to leave if he got a better offer because he wanted to go someplace where he wouldn't have to do quite so much teaching and could write the book that he wanted to write. (The book, *The Governmental Process,* was published in 1951, made his reputation, and still generates income today.) He received an offer from Williams College, so he turned down the Harvard offer, at which point he got a little note from the Board of Overseers saying, "David B. Truman has never been appointed assistant professor of Political Science," because you didn't turn down Harvard offers in those days. [Laughter]

I got into MIT and Princeton, but I went to Yale partly to study with Tobin and partly because Bela Balassa had written an interesting book on Hungarian economic reform, which I

had read at Amherst in a course on comparative economic systems. It was a nice combination of economics, history, and politics. I was struck by that combination. I think it was essentially Balassa's Ph.D. dissertation at Yale. I said this is someone doing something interesting and something useful with his economics.

MR. SMALL. What is the context of the Hungarian reform?

MR. TRUMAN. Balassa escaped from Hungary in 1956 during the uprising and came to the United States. I don't remember all the details. He had studied economics in Hungary, and maybe it was through Willie Fellner—his name was William J. Fellner, but everyone called him Willie, which was one of the hardest things I had to do when I joined the Yale faculty—and his Hungarian connection, or something, that Balassa got to Yale. Bela was a talented man. He may have been a little too confident in his abilities, but he churned out the articles and was very imaginative in what he did.

MR. PROMISEL. I was Balassa's research assistant for a while. I was trying to put together some data on Eastern European countries. I could not find a couple of the key indicators that he wanted, so he said, "My country is a little bit like this country and a little bit like that country. Take the average of those two countries and put that in the series. That would be fine—nobody will know the difference." [Laughter]

MR. TRUMAN. Belassa did not get tenure at Yale even though he expected to. Dick Cooper got it instead, maybe through the influence of Jim Tobin.

MR. SMALL. It's common for a graduate student writing a thesis to be focused on one particular problem, but a lot was going on in international during that time. When did you graduate?

MR. TRUMAN. 1967.

MR. SMALL. Inflation was headed up, there was the Triffin dilemma, and there were problems with exchange rates.

MS. JOHNSON. Ted's thesis itself was international but he mentioned an interest in macroeconomics. There was the Kennedy tax cut, then there was the Johnson fight with the Fed. There were many macroeconomic things going on at the same time.

MR. TRUMAN. At that time, many of the most influential people at Yale—people like Tobin, Cooper, and Art Okun who had come back from Washington during the first phase of the Kennedy-Johnson Administration—were very turned on to public policy. So, the public policy issues were very much present at Yale and elsewhere. I suspect that Michigan was somewhat the same way at the time. But Yale had Tobin, who also acquired an interest in international economics when he was on the Council of Economic Advisers in Washington.

Tobin's writings became much broader after his tenure on the CEA. Before that, he was bought and sold as a macro or monetary economist. The irony was that the monetary economist at Yale was Henry Wallich. Tobin taught theory and undergraduate courses, but he didn't teach money and banking, even though his writings at the time were the seminal writings on many aspects of money and banking, including many topics relevant to the Federal Reserve's thinking about excess reserves today. Tobin came back to Yale with much broader interests in international monetary reform questions and, as you said, the Triffin dilemma. (The dilemma was that the United States could not both keep the dollar tied to gold and supply other countries with short-term dollar assets—either there would be a run on the dollar into gold or the United States would tighten its policy, depriving the rest of the world of liquidity and leading to a global contraction in demand.)

Yale had an environment that was oriented more towards public policy issues than towards raw research, relative to other departments. The department at Yale had a core group of researchers, or more theoretical researchers, in the Cowles Foundation who were the *primus inter pares*—first among equals. They also had the Economic Growth Center which sponsored, among other things, an M.A. program for foreign students. Then there was the rest of the department. The development people were all in the growth center—Gus Ranis and people like that.

MR. SMALL. Dick Cooper?

MR. TRUMAN. He had an office at the growth center and a loose connection there, but Steve Hymer was associated with the Center. A number of prominent young academics cycled through that program because they wrote monographs on particular countries. The idea was to upgrade the current thinking about developing countries. But it was a public-policy oriented research program. Then you had everybody else—the third world as I called it—some of whom were quite prominent but who weren't attached to any of these programs, people doing industrial organization, fiscal policy, or things like that.

MR. SMALL. One overly simple and biased way to characterize the economics department at Yale during that time was: the IS curve was better than the LM curve, the Phillips curve presents an exploitable tradeoff between inflation and employment, the NAIRU is 4 percent, and fixed exchange rates and the fixed price of gold are good.

MR. TRUMAN. Clearly, there was a Yale school of thought. This was the period in which there was considerable tension between the Tobin view of the world and the Milton Friedman view of the world. They had a famous debate at Yale. The strong characterization of

that debate is that Friedman said that money is all that matters, and Tobin said that money doesn't matter at all. That actually overstated their differences in my view even at the time.

MS. JOHNSON. I have repeatedly heard a famous story about this. James Tobin went to the blackboard at a seminar and wrote the three lines: "Money is all that matters. Money matters. Money doesn't matter at all," and then he crossed two of them out.

MR. TRUMAN. Separately, both Tobin and Friedman wrote papers trying to lay out this debate, and both of them claimed the middle ground. [Laughter] So, Tobin's view was not that money doesn't matter, and Friedman's view was not that only money matters. It was instructive as an example of the way Tobin thought.

Tobin was a fantastic teacher at Yale who was a disaster as a teacher, it was said, at Harvard. He didn't get tenure there. One of the reasons was that he didn't publish enough. Also, he came from Illinois and had this flat Midwestern twang. Whenever he would give a lecture or a seminar, it was unbelievably dull. He could not modulate his voice enough to keep the audience interested.

At Yale, he taught using the Socratic Method. He would go to the blackboard and ask you questions, and force you to think through the answers to the questions, and in effect you would develop the theory that he was trying to cover. He walked you through things. He didn't want the students to take notes. He wanted them to think. Of course, students being students, they took notes. [Laughter] The first year I was on the faculty and acted as his assistant, I took the notes. Then we xeroxed those notes and handed them out so that the students didn't have to take so many notes. In the fall of 1967, Janet Yellen came to Yale but she was in the other half of the class that first had Fellner for micro and then had Tobin for macro. She later was Tobin's assistatnt and she took super notes, which were subsequently circulated. There was a

manuscript, there was a book—it never got published—that had all Tobin's work on monetary economics in it, and there were also the famous Yellen notes. Anyone who has seen the precise way that Janet Yellen operates at the Board and FOMC table will understand how good her notes were.[1]

Another dimension of the Yale school, which seems to be particularly relevant today, was that it wasn't just about the quantity of money, but the Tobin framework included portfolio–balance models, work that Jim did with Bill Brainard. Basically, you have an array of assets, you have an array of returns, and you have to figure out how those fit together. They tried to do so in the microeconomic foundations of macroeconomics, building up from portfolio behavior. So actually, Yale was a much richer school of thought than the standard characterization at the time and, therefore, in some sense, more relevant to thinking about monetary policy.

MR. SMALL. Back then debt management was almost thought of as an independent policy tool.

MR. TRUMAN. Operation Twist, in some sense, came from Tobin's view about debt management policy in a portfolio balance framework. You have two assets—short- and long-term government debt—and by changing the relative supplies of those assets, you could twist the yield curve.

MR. SMALL. Do you remember debates about policy and inflation?

MR. TRUMAN. When the famous increase in the discount rate in December 1965 took place, there was a debate between Tobin and Wallich about whether it was the right thing to do. The debate was sponsored by the graduate economics club of which I was the president. (Andrew Crockett, who was then at Yale doing an M.A. at the growth center program and went

[1] These conversations took place before Janet Yellen became Chair of the Federal Reserve Board.

on to important things at the Bank of England and the Bank for International Settlements, therefore likes to call me "President Truman.") Wallich, having been on the CEA under Eisenhower, and Tobin, having been there under Kennedy, took predictable positions. I think that Tobin had something of a love/hate relationship with the Federal Reserve.[2] On the one hand, he admired many of the people there, which included many of his former students. Ned Gramlich, for example, was one; he had been in R&S and left essentialy as I arrived at the Board. But Tobin felt that there was a tendency for the FOMC to be a little on the too-tight-for-too-long side. Wallich, coming from his German hyperinflation experience, was more likely to err on the side of taking the risks associated with being too tight for too long.

It's also fair to say—and this probably had a big influence on me—Tobin had a view that you needed to think about economic policy as a whole. Monetary and fiscal policies were not separate entities. He was very much involved in bringing the Fed Chairman into the policy process within the U.S. government (the so-called "Quadriad" consultation process involving the CEA, the Budget Bureau at that time, the U.S. Treasury, and the Federal Reserve). This approach viewed macro policy as a whole, and monetary and fiscal policies as two coordinated tools of economic policy. Tobin was very much of that school, and it certainly seemed natural to me. But probably if I had gone on to Chicago, I wouldn't have thought it was quite so natural. As we know, some economists, such as Allan Meltzer, think that was the downfall of the Federal Reserve and its anti-inflation credentials when it started to cooperate with the Administration in the early and middle 1960s. You can say that, perhaps, under the influence of Jim Tobin, I had

[2] As noted by Ralph Bryant in his interview for this project, Ralph and several others of us, including Larry Promisel, George Henry, Dale Henderson, Guy Stevens, and Jeff Shafer were from Yale, which created a bit of tension in the Division of International Finance; we were the Yale mafia. On the one hand, the influence of Jim Tobin and others with their interest in public policy pushed us to the Board. On the other hand, Jim did not always agree with Federal Reserve policy.

the view that cooperation was in general a good idea to the extent that it was possible. On the other hand, there were certainly people in the Federal Reserve—in particular in the Reserve Banks but also at the Board—who thought it was a bad idea. One example was foreign exchange market intervention. Another was the Mexican rescue in 1995; I refer you to the FOMC transcript of January 31 and February 1 of that year.

MR. SMALL. Did the uptick in inflation cause you intellectual angst?

MR. TRUMAN. The honest answer is "no." The uptick in inflation, even as you got to 1972, had not been that much. I don't remember having great or even small debates on this topic. I am sure that it was mentioned in the Tobin-Wallich exchange, however. Between 1965 and 1971, we got above 5 percent briefly and then inflation came down. By 1971, inflation was back. But, at the time, it was not regarded, at least in the Yale world, as being a serious problem.

There's not a lot of disagreement on how the Federal Reserve went wrong in the 1970s, to say nothing of the 1960s. We thought that potential growth was much higher than it was and we stepped more on the accelerator than was desirable in retrospect. The Kennedy/Johnson Administrations believed that the economy had under-performed and could perform better. It wasn't that inflation should be ignored, but I don't remember any conversations in which colleagues at Yale said that we should really worry about the fact that inflation was picking up in 1969. I suspect that Henry Wallich was an exception, but he did not engage that much in policy discussions, which tended to be held in the Cowles Foundation coffee room.

MS. JOHNSON. Were you still at Yale when President Richard Nixon imposed the wage and price controls?

MR. TRUMAN. Yes, I was at Yale in the summer of 1971. At the time, Dick Cooper wrote that the controls were not an international move designed to save the dollar but a domestic

move designed to stimulate the economy. The closing of the official gold window was a sideshow in that context, but not for me and my subsequent career. I was somewhat influenced by Cooper's view. The controls as well as the closing of the gold window were designed so that Nixon could pump up the economy and get reelected. And, in order to do that, you had to forget about the dollar and put on price controls. I would have said then that you could have pumped up the economy without price controls.

The Kennedy/Johnson Administrations had also tried playing with wage and price controls and guidelines. It was called "incomes policies" in those days and the United States used those policies. Burns himself favored the Nixon approach. That approach extended right through—I would say into—the Carter Administration. That was a big component in the 1978 debacle with the dollar, which we will come to later.

So, the view that you could use wage-price guidelines to operate an incomes policy was certainly part of the prevailing policy view. It was, to use the language of the day, another tool. You have fiscal policy and monetary policy, and then you add regulatory policy targeting the wage-price environment in order to get the economy operating at a higher level. In retrospect, I'm pretty sure that someone like Tobin was broadly sympathetic to the view that the economy was overheating by the time things came to an end in the late 1970s. Everybody agreed that the economy was overheating by then. The question was how much one should do to restrain it in the late 1960s.

MR. SMALL. The Bretton Woods system of fixed exchange rates and the fixed price of gold can look, from today's perspective, to have been regulatory in nature and inefficient. What was your view?

MR. TRUMAN. At Yale, I taught international economics both to the undergraduates and the graduate students. They bought into the Triffin dilemma, which was that we're going to run out of gold if we continue to build up official liabilities against our gold stock, and the global economy would go into recession if we acted to tighten our policy enough to prevent the outflow of dollars. This debate was not at the time about the financing of current account deficits; at the time, we were generally in current account surplus. The debate was about running out of gold and building up more short-term official claims on the United States. The notion that the exchange rate regime should be more flexible was generally accepted, though few favored freely floating exchange rates. No doubt, there were some exceptions. Henry Wallich and Willie Fellner were probably a little less enthusiastic about more-flexible exchange rates; Tobin and Cooper probably were more enthusiastic about it. And Triffin was a little in between, I think. He wasn't completely against floating rates, as I recall. All five of them—Tobin, Triffin, Fellner, Wallich, and Cooper—were involved in the academic debates at that time about what to do and how to reform the system. In fact, they started talking about reforming the system at the beginning of the Kennedy Administration and when the Treasury, the CEA, and the Federal Reserve were engaged in thinking through contingency plans about what to do and what the alternatives were.

MS. JOHNSON. The interest equalization tax?

MR. TRUMAN. The interest equalization tax was one response. It was imposed in the late summer of 1963, just as I arrived at Yale. It was designed to discourage U.S. purchases of foreign securities (debt) that had higher yields—the portfolio balance framework again—and thereby contribute to the build-up of liquid claims on the United States as other countries resisted the pressure on their exchange rates by intervening in the market to prevent their currencies from

appreciating. There wasn't a doctrine on the international monetary system at Yale, even with Bob Triffin there. Because he was a child of the interwar period, where you had chaos in financial arrangements, Bob was sympathetic to maintaining fixed exchange rates though he favored a more flexible system. He had seen what happened to the world when countries engaged in competitive depreciations.

The first year I taught Yale undergraduates was the spring of 1968. It was the period in which, eventually, the two-tiered price of gold went into effect after a mid-March meeting held at the Federal Reserve Board. I would come into class each day before that decision, and the students would ask, "How long can this go on?" And I basically said, "Until it stops!" I didn't have any deep, profound views, but it was pretty clear that the drain on official gold holdings was not sustainable. That may have been my first "crisis" experience.

MR. SMALL. I've heard this expressed: People who endorsed fixed exchange rates, nominal exchange rates, saw that as a way of imposing monetary and fiscal discipline on countries. It wasn't so much the fixed exchange rates per se but getting governments to agree on monetary and fiscal policies.

MR. TRUMAN. Yes, and that certainly is the view that I associate with Paul Volcker. I don't think that view was strongly reflected in the writings and the textbooks of the day, except to the extent that the fixed exchange rate regime was a coordinating mechanism. So, if you had a serious balance of payments problem, then you might move your exchange rate, but you also operated on your monetary and fiscal policies to deal with the problem first. That was also the period in which the British were going through their problems. They finally devalued sterling in November 1967. That was the first academic year in which I was teaching. I recall that Dick Cooper wrote a piece in a Brookings Institution volume that argued that the British devaluation

of 14.3 percent was too large. In retrospect, he was wrong; but it was an excellent paper and one that made a great impression on me because of the care with which he laid out his argument—his arguments were always the most convincing.

MS. JOHNSON. My memory of that period is that flexible exchange rates were the daring new idea, not vice versa, and that explains why the Bretton Woods system was what it was. People were trying to get back to what they thought had been the right system for many generations, just figuring out ways to tinker with it.

MR. TRUMAN. But there was also the thought that right before the war the competitive devaluations were destabilizing. Isn't that correct?

MS. JOHNSON. They were counterproductive—they weren't necessarily destabilizing.

MR. TRUMAN. On the other hand, at the time we taught Mundell-Fleming on the effects of monetary and fiscal policies under fixed and floating exchange rates. It was part of the graduate curriculum. So, we were all thinking about a world in which you could have exchange rate flexibility. And although there were people who had different views about what one should do, and how flexible exchange rates should be managed, the notion of living in both worlds was very much part of the curriculum. Some people, including Bob Triffin, did emphasize the disciplining role of fixed exchange rates, but it was more the international coordination dimension than the discipline that fixed rates imposed on macro policies.

MR. SMALL. In that system, were countries that could run perpetual surpluses seen as a problem? Some people believe that this situation applies to China today (2009). The exchange rate system didn't impose a discipline on the countries running surpluses.

MR. TRUMAN. That was very much a feature of the things we dealt with once I came to the Board: the asymmetry of the adjustment process. Once the United States had gone off gold

and you had the Smithsonian agreement, a reform process was started that evolved into the creation of the Committee of Twenty (C-20) in the summer of 1972. One of the challenges was to think about how we could improve the functioning of the international monetary system, which, at that point, was operating once again after the Smithsonian agreement in December 1971 on fixed exchange rates. The asymmetry of the adjustment process and how pressure could be brought on the countries in surplus were key issues, rather than just countries in deficit. (Bob Solomon liked to stress with me that there were not surplus and deficit countries, but only countries, presumably temporarily, in surplus or deficit.) A paper submitted by the United States to the Committee of Twenty (authored principally by Paul Volcker) on so-called reserve indicators provided a way of looking at levels and/or changes in net or gross reserve positions—we never quite sorted out whether we were talking about levels or changes in exchange rates or about gross reserves or reserves net of foreign official holdings of assets in your currency and other obligations—to trigger changes in exchange rates, trade sanctions, or taxes in some form. All three possibilities were mentioned in the U.S. submission to the Committee of Twenty.

Today, although you occasionally hear some hints of the last two options, many exchange rates are largely floating. Therefore, forcing countries to change their exchange rates, in particular advanced countries, is only one of many issues. It is an issue for emerging market and developing countries, such as China. The notion of taxing excess (foreign exchange) reserve accumulations or saying that if you have excess reserve accumulations, the rest of the world could impose trade sanctions on you is not really in the cards today as a realistic option, even though it was sufficiently in the cards so that the U.S. government was willing to put it in a published paper in the fall of 1972. So, the issue of an asymmetric adjustment process was very much on the table at that time, evren more so than today (2009), probably because the central

issue was basically about sustaining a fixed exchange rate regime. The problem was to get countries with surpluses to move their exchange rate pegs, while maintaining the overall fixed exchange rate structure of the system itself.

MR. SMALL. You mentioned the uptick in inflation into the 1970s, and that one cause was that domestic policymakers were overestimating the growth rate of potential output and/or the level of potential, or underestimating the NAIRU. But then you see a fairly high degree of correlation of inflation across countries at that time. Was everyone doing the same thing, or was there a purely international cause such as the role of the dollar as a reserve currency?

MR. TRUMAN. We haven't gotten me from Yale to the Fed yet, but we can move there. You had fixed exchange rates. The dollar was under modest downward pressure in this period, both before the closing of the gold window and after. The Federal Reserve got back into the business of foreign exchange operations in the early 1960s, when the dollar was under pressure. We operated in the foreign exchange markets, but fundamentally what we did was to provide cover for other countries holding dollars. We drew on swap lines and then intervened. Essentially that meant that the other countries didn't have to intervene themselves and accumulate dollars. Germany, in particular, and the Europeans didn't have to intervene if we did so. Alternatively, they intervened and bought dollars. We drew on the swap lines to buy the dollars, and we ended up protecting our gold stock. The hope was that these were short-term capital flows that would reverse themselves and we could buy back the foreign currency in the market and then repay the swap, which sometimes was the case.

The problem on the other side was that the monetary control techniques were not as advanced as they are today. The view was that, as the Germans bought dollars, that expanded their money supply and that fed inflation in Germany. Now, one would say today, they could

have mopped up this increase in their money supply resulting from their dollar purchases by selling bonds from their portfolio, but that would mean putting upward pressure on German interest rates, which, on the one hand, might attract even more money into the country, and on the other hand would also tend to depress the economy. So, you had both forces operating.

The foreign countries blamed it all on us; we were printing too much money, growing too fast, and inflating too much, though our inflation rate was not that high relative to other major countries at the time. The system required them to buy the dollars, and then they had a choice about whether they wanted to mop up the resulting domestic liquidity, and in general they didn't, or they didn't do it as much as they might have. That's how you got a generalized increase in inflation around the world, and some people viewed that as importing inflation from the United States.

This to some degree was true, though they could have revalued, which they did a couple of times in small amounts—Germany in particular. Or they could have sterilized the intervention, as I have described. There were debates about whether you could sterilize the monetary effects of intervention. Basically, you could have sterilized those effects if you wanted to take the domestic consequences, but part of the domestic consequences was going to be less growth in Germany. So, it all sounds familiar: The country sterilizes and has less growth or appreciates its currency and has less growth.

It's also fair to say that, although there were differences in economic philosophy within the G-10 countries at that time (Japan, Canada, United States, and seven or eight countries in Europe, depending on whether you count Switzerland), they all used broadly the same analytical framework. A number of other countries had rapid inflation. Japan had a lot of inflation. It wasn't really until the 1980s that Japan got completely converted to pursuing low inflation.

France had much higher inflation than the United States; the United Kingdom certainly did, too. It was only Switzerland and Germany that, on average, had lower inflation, either in the 1960s or in the 1970s, than the United States. The United States was a relatively low inflation country in the context of the G-10 countries. But everybody, in some sense, was pursuing higher growth and maybe forgetting about inflation. There were earlier conversions to monetarism, expressing a concern about money as the source of the problem, in Germany in particular and Switzerland less so. Japan came to this view relatively late.

Joining the Federal Reserve Board Staff

MR. TRUMAN. In January 1972, Ralph Bryant came to New Haven. He had just become the director of the Board's International Finance division and he was visiting a number of places to recruit people to join the division. I had known Ralph from when he was at Yale as a graduate student. He reentered Yale, where he was also an undergraduate, after earning a degree as a Rhodes scholar at Oxford. Consequently, he needed to spend two years there before he came to the Board where he finished his dissertation. He talked to me in January 1972 about his ideas for the division, in general, one evening, probably over a nice bottle of wine—or as best one could do as an assistant professor at $11,500 a year in his fifth year on the faculty. He ended up later asking me to come to Washington to give a seminar and to consider joining the Board staff. I took him up on his invitation and gave a seminar. I recall Ralph and Corky put me up; it was the beginning of the continuation of a long friendship. I was working on another version of this trade creation, trade diversion topic. I think I underwhelmed my future colleagues at the time in terms of the sophistication of my presentation, but I met with a number of people, including Robert "Bob" Solomon, and subsequently I received an offer to work at the Board.

Meanwhile, Yale had a different system from most other institutions. Its contracts were for five years. After five years one could, among other things, be promoted to a non-tenured associate professor with another five-year contract, thus violating AAUP (American Association of University Professors) guidelines, which then called for people to be up or out after seven years. In the spring of 1972, I was promoted to a non-tenured associate professorship, so I could've stayed at Yale for another five years if I hadn't gotten tenure. I took leave from Yale to come down to the Board after Ralph made me this offer.

There was a little tension about how much the Board was going to pay me. It probably was a reflection of the system at that time and even today. People who had joined the Board staff in 1967 were by 1972 being paid, say, $X. After having spent five years doing essentially the same thing as an academic, people were being paid at least one grade or two grades more than my initial offer from the Board. That tells you something about how the mechanics of the GS/FR system worked at that time, and maybe the value that was placed on academic experience. At that time, I was earning $11,500 a year at Yale. I got at least a $500 raise every year; one year I got a $1,000 raise. My starting salary at Yale in 1967 was $9,000. The Board looked at how much I got paid at Yale and said, "Well, we'll offer him this," even grossing it up for 12 months, and that puts him in a grade 12 or something like that. I think Ralph twisted some arms and got me moved to a grade 13.

I came to Washington with my family, but on leave. We didn't really have a view of whether I would stay. Then I took a second year of leave, which was allowed in those days. It wasn't until the spring of 1974 that I resigned from Yale and agreed to stay at the Board. By that time, I was pretty well dug into the system here.

Early Years in the Division of International Finance and Forecasting

MR. SMALL. What did you work on those first two years?

MR. TRUMAN. Well, this was the period in which Ralph was building up the division. He hired a bunch of people out of graduate school at the same time: Jeff Shafer, who was working on his Ph.D. at Yale, was on the market and came here to work on his dissertation; Joanne Salop; Peter Clark; Peter Isard; and myself. Ralph put us in various sections in the division. Jeff went into the more research-oriented group (Trade and Financial Studies I think it was called by then) because he was supposed to have a year to finish his dissertation.[3] That was part of his deal. I went into the Balance of Payments section, whose name was changed to the International Transactions section, presumably because I had worked on trade equations. Peter Isard, I think, was in that section, too. Peter Clark was in the World Payments and Economic Activity section. So, Ralph brought in several people who, like myself, had been in the academic world, as well as three or four, at least, just out of graduate school, as part of his expansion and beefing up of the division.

MR. SMALL. What was the state of the art, so to speak, of work in that section going up to the Board and questions coming back?

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[3] Jeff's Ph.D. is off the subject, but it is something in which I take great personal satisfaction, so I want to mention it. Not surprisingly, Jeff soon became much more interested in policy than writing a Ph.D. dissertation even under Jim Tobin. As had been my case, he was floundering around. Moreover, he found himself seduced into current policy projects, and soon his dissertation work was set aside. After a few years, he, Mike Dooley, and I were working on a little simulation model for the project that was looking into using optimal control techniques to help guide monetary policy. (The final elaborate proposal was dismissed by the Board, but it was important and useful research.) We built this model, and I said to Jeff, why don't you turn this into your dissertation and get your "union card?" He tried my suggestion on Tobin, and Jim said fine. Yale put me on Jeff's dissertation committee, as the third reader, and Jeff got his union card, which served him well when he went off to the Federal Reserve Bank of New York and then to the OECD. He did not need a union card in New York, but he did need one probably to get to the OECD. So that was one of my success stories. On the other hand, I was also on Larry Promisel's dissseration committee, from when I was at Yale. I have always regretted that we did not come up with a similar device for him to get his union card out of his work at the Board. One of my many failures.

MR. TRUMAN. Well, the International Transactions section was very much old school—serious but old school. Sam Pizer was the chief of the section. Dan Roxon was a senior economist. Kathy Morrissee was there working with them. In putting together the forecast, the principal task was eyeballing the data. Sam and Dan understood the data very well; they'd both come to the Board from the Commerce Department. But when the international division put their inputs into the Greenbook forecast, it was done on a spreadsheet, except we didn't have spreadsheets yet, so you filled in numbers in a table, xeroxed it, and took it over to the people in R&S who added things up.

MR. SMALL. Were there a lot of requests from the Board or the Chairman?

MR. TRUMAN. Requests from the Chairman weren't the biggest issue of the day. However, I recall that Peter Isard, who was in the same section as I, got involved in working on the issue of import surcharges. We also had a dock strike, and we wanted to know how that was affecting our trade. Peter built a little model to estimate that and it was used for many years. The forecasting process was primitive by today's standards, and it did not in general involve using equations, at least not in the international division. At that point, we had a view of economic activity in the world as a whole, but it was not a regular input into the forecast process. World economic activity was going up or going down. You would put your finger up in the air and say how that would influence exports in particular.

The big issue in the first six months I was at the Board was the effect of the devaluation of the dollar agreed to at the Smithsonian in 1971. Chairman Burns was very interested in and concerned about that, and the division spent a lot of time on it. Peter Clark made a big presentation in, I would say, January 1973 on that subject. That was my first introduction to the scrum that was associated with doing Board briefings. There was a lot of tension because Peter

had run some equations and looked at the literature on Marshall-Lerner conditions and at whether it was reasonable to think that by that time there should be some more discernible effects on the U.S. current account. My memory of the conclusion is that he found effects. There probably were some more effects in the pipeline as of that date (due to what are called "long and variable lags"), but probably not enough to achieve the desired adjustment of the U.S. current account, which was on the order of $10 to $15 billion.

It's also useful to remember that the U.S. current account was not in deficit and had not been in deficit during most of the period before the US closed the gold window. It was an issue of needing to have a sufficient current account surplus to sustain the dollar's role, to cover net private capital outflows. To sustain the outflow of private capital, you had to have enough of a current account surplus, even if at the same time you had a private capital inflow, if you wanted to limit the build up of dollars in official hands.[4]

The conclusion, as I recall it, was that the Smithsonian devaluation was working, but was not, by itself, strong enough to achieve the improvement that the U.S. government thought was required. This analysis was not done in the Balance of Payments section, and I think that was not an accident because we were not set up to run that kind of "what if" scenario. Part of the controversy within the division was that Peter was in another section and had done this work largely independent of those "responsible" for forecasts.

MR. SMALL. Were you a little behind the Division of Research and Statistics (R&S)?

[4] Over the Bretton Woods period until 1971, the United States generally recorded a surplus on the current account. The current account surpluses were not large enough to finance foreign aid and U.S. net private investment abroad. To settle the balance, the United States either had to sell gold or accumulate dollar liabilities to foreigners. The maintenance of fixed exchange rates by other countries required a continued accumulation by foreign central banks and residents of short-term liquid claims on the United States.

MR. TRUMAN. The Greenbook process was, at least through October 1998 when I left the Board, a judgmental forecast and not model driven in the sense that you put in the inputs, you turned the crank, and out came everything from wages and prices, demand for consumer durables, etc. It was literally an adding up process, a spreadsheet process, and how the different cells got filled in depended a lot on who was filling them in. This was true even in 1998, when we were producing our forecasts of net exports, which is what counted for GDP. We had forecasts of the rest of the world's growth rate. We had exchange rate forecasts and price forecasts, which were used to generate the required X-M (exports minus imports), along with the price of imports and the price of exports, agricultural and non-agricultural exports, computer and non-computer imports, and exchange rates.

But it was a partial equilibrium world. Equations were used by that time, but they were partial equilibrium and could be doctored, certainly in the short run. In the current quarter and the next quarter, they might well be doctored because they were producing as output what you put in as the residuals, in some sense. Alan Greenspan once told me that forecasting was all about the add factors in the equations, which are largely judgmental. And that was true for the rest of the forecasting process as well. So, when you were forecasting investment, the people who were in charge of forecasting investment brought in their 17 different models of investment. You had this array, and which one they chose to put down into the spreadsheet—which by then was a computerized process—was a matter of judgment.

Kathy Morrissee tells a story about when she joined the Board staff in 1963. That was the time of punch-card-using computers, so doing a lot of fancy stuff with computers was complicated. If you wanted to work with numbers, the research assistants had these mechanical calculators on their desk. Kathy had to petition in order to be allowed to have a calculator on her

desk. Economists worked with pencil and paper, or a typewriter, but they didn't dirty their hands [laughter] with actually cranking out the numbers themselves. That was done by research assistants or statistical assistants. By 1972, things had changed a little bit. You didn't have to petition to get a calculator, but you had to ask. [Laughter] It was a different world. Whether we were behind other similar institutions, I do not know; my guess is we weren't much behind.

MR. SMALL. I was thinking about the R&S formal modeling.

MR. TRUMAN. Yes, the formal modeling—the Greenbook forecasting process was one where you had a judgmental forecast. Then they took the basic inputs (exogenous factors) from that judgmental forecast, put them into the model, and then compared the judgemental and model forecasts. Then, the Jim Kichlines and the Mike Prells of the world decided whether they wanted to change the bottom lines or top lines in the forecasts, based upon what the model was saying that was different from what the judgemental forecasters were saying.[5] The model played a relatively minor role in the forecasting process throughout the period I was at the Board—at least that was my impression. Not that it wasn't useful!

I think the usefulness of the model was more in running "what if" experiments. It also operated as a consistency check, because the model was built on identities—things had to add up. Important! [Laughter] It was not irrelevant to have budget constraints, the identities with feedbacks, and so forth and so on built into the system, so it acted as a consistency check. Then the model can tell you: If you're going to do such and such, how it's going to play through to incomes and prices and other things you care about. Does it actually produce the kind of consumption stream that you are putting down in the judgmental forecast, looking at it just as a standalone model of consumption? What happens to consumption if there's a tax cut? Or what

[5] James Kichline and Michael Prell were directors of the Division of Research and Statistics from February 1977 to August 1987 and October 1987 to June 2000, respectively.

happens if the exchange rate moves? What happens if there's a lot of growth in the rest of the world or a slowdown in growth in the rest of the world? The formal model was the device that was used to do those "what if" experiments. And to do that process, those in charge tuned the model to look like the Greenbook forecast, so the baseline in the model was close to the Greenbook forecast. They put in the relevant add factors, and then changed interest rates, changed fiscal policy, changed something in the rest of the world, changed an assumption about productivity growth, or whatever it might be in which you were interested, and you let it play through the model. It may well be different now, 11 or 12 years later, but that was how I understood and used the process at the time I was at the Board.

Lyle Gramley, Jim Kichline, and Mike Prell very much emphasized that the Greenbook forecast was a judgmental forecast. One reason was that they felt it was important that the staff convey the impression that it had thought about the numbers and it was not all produced by garbage in and garbage out of some computer. My sense was that at some Reserve Banks the forecasting process was more model-based than at the Board, or at least that was the impression given by the presidents and their research directors, but I do not know. But the forecasts at the Board and for the FOMC were increasingly informed by these partial equilibrium equations, starting from nothing in 1972, approximately, at least as far as those of us in IF were concerned. Maybe we had some equations, but I don't think we had much.

MR. MARQUEZ. That was when Peter Hooper arrived at the Board, I think.

MR. TRUMAN. Hooper came the next year in the fall of 1973.

MR. MARQUEZ. And he was big on trade equations?

MR. TRUMAN. Again, that was a move designed to bring in someone to start to build equations.

MR. PROMISEL. When was John Wilson there?

MR. TRUMAN. He came either the next year or the same time that I did.

MR. PROMISEL. He also did trade equations?

MR. TRUMAN. Trade equations. Part of Ralph's strategy, and his arrangement with Chairman Burns, was to bring people in who were more tooled up and who would apply more modern techniques to a whole range of issues, whether the forecasting process or something else. And Ralph brought such people in and scattered them around the division.

But there was continuing tension. Even once Peter got his equations up and running, there were the equation results and there were the judgmental results. And over time they went from one extreme to the other, 95 percent judgmental with 5 percent equations, to more or less the other way around. Certainly, things like the oil forecast were done differently, and agriculture was done differently, and aircraft exports in the short run were done differently, and so there were certain things that were added to the basic equation results.

MR. SMALL. Was there a major distinction between the current quarter and maybe the next quarter, depending upon how far into the current quarter you were versus the longer run, so the current and next quarter were data driven to a much greater extent because you had information for that quarter, and the model really came in on the subsequent six quarters?

MR. TRUMAN. Yes, and the subsequent quarters tended to be driven by regularities. Models tend to produce smooth results [laughter]. So basically, the system was a regression towards the mean, which is not unreasonable. But the dominant models, in my view, were the partial equilibrium models of the experts; they were not the big general equilibrium models in R&S and IF.

MS. JOHNSON. And there was a long thread, as well, that continued—and probably still continues—of the actual model in R&S having its own international sector, and how that compared to the international sector that IF was building and which IF reinvented several times. There were linkages established between the two models. Then they would be broken apart, and each of the groups of people would go off and build another model, and then they'd try to relink again. So, the term "model" is being used to refer to multiple things here. We need to be clear. The USIT (United States International Transactions) model was a set of partial equilibrium equations. Also over time, IF came to have a different model that was general equilibrium in nature. Neither of those was necessarily mapped into the R&S model, but at points in time it could be, or portions of it could be, and on-again off-again it went as time went by.

MR. TRUMAN. There were two stages. You had a process that went into creating the multi-country (MCM) model. That process, which Ralph Bryant had started before he left in 1975, not to return, was well underway by the time I became division director in June 1977. That process was not constrained by what was going on in the forecasting process. The initial version of that model sought to explain not just trade flows, but financial flows. That was very much where Ralph came from: the portfolio–balance Yale school.

One of the big questions in the model was how do you solve for the exchange rate. The initial versions of the model basically used foreign exchange market supply and demand equations and solved for the exchange rate through a complicated process because, in those days, 20 to 30 years ago, you didn't have the kinds of computers that could solve that kind of simultaneous system, which added up all the supplies and demands for foreign exchange and solved for an exchange rate that cleared the market. It was an innovative approach. Guy Stevens led a team that implemented it. That's what drove the MCM initially. The problem is it didn't

work particularly well because it turned out that modeling the individual capital account lines was very difficult and consequently the exchange rate results were broadly unsatisfactory.

In the second version of the model, we basically dropped the capital account and went to a mechanism that involved exchange rate determination through uncovered interest parity, which I was not nearly as skeptical about then as I am now [laughter]. That was the only way we had to close the model. We combined uncovered interest parity with some add-factors and risk premiums and so forth. There was also a process by which the trade equations of the MCM sought to mimic more closely the USIT equations—not completely, but very close.

MR. MARQUEZ. In addition, the MCM trade equations in the second generation were bilateral by individual countries, while the USIT model was mostly multilateral (vis-à-vis all countries). The two models also differed in the aggregation of commodities. There was a new world in which exchange rates were now much more flexible and important than they used to be. We needed to have a model that could link the implications of changing policies to those exchange rates. That's where Guy Stevens came in.

MR. TRUMAN. So we had the MCM arriving in the international finance division and, as Karen said, R&S had its model (the MPS), which had a rudimentary external sector, more like the USIT equations. One of the challenges was that IF wanted, and I think to some extent the R&S modeling people wanted, to marry the MCM with the MPS model, to take out the small foreign sector in the MPS model and plug in the MCM as the rest of the world—so you're running the United States with the rest of the world. When we ran the MCM, we did the opposite. When we ran the MCM alone, we had a little rudimentary U.S. sector. We had models of each of the major economies as part of the MCM, so we ran it the opposite way. That was challenging to all concerned in IF and R&S, probably because there were some philosophical

and personality differences among the players. I never got deeply into it, but it's not surprising that 5 people on one side and 15 people on the other side couldn't agree on everything.

And it was a challenge technically because the MPS and the MCM models were written in different computer languages. Leaving aside all the intellectual differences, it was a technical challenge to put it together. We had the people in what was then called the Division of Data Processing who did it for us. We weren't supposed to do our own programming in those days, but some of us, some of my colleagues, I should say, did anyway. So, they were solving this linkage problem, and every year Jim Kichline, Mike Prell, and I would have to go to the budget committee and say, "Give us another X thousand dollars to buy data processing time to try to get this merger to work." It took years to get it functioning.

It was further complicated because the researchers in R&S tinkered with their model, and we tinkered with our model once we got it going, because models are not fixed for all time and they shouldn't be. Keeping it up and running was a real challenge. Then the modeling gradually evolved and the third generation incorporated forward-looking expectations. By that third generation, the integration with the R&S model (FRBUS) was working pretty well.

MR. MARQUEZ. That joint simulation was called "MOMBO." MOMBO was like a marriage, but one with separation clauses, which said that we can leave the marriage anytime that we want. [Laughter] Regardless, the household had to keep functioning on short notice. There was also an idea of keeping redundancies alive; that is, not to surrender our view of the U.S economy to the guys in R&S. And R&S didn't want to surrender its view of the rest of the world to IF, and so they wanted to keep that alive, so that was the element of redundancies, and the element of research that you wanted.

MR. PROMISEL. The international piece of the R&S model really did take the international divisions' forecasts. It was in the R&S model for the adding up constraints, but the forecasts for exports and imports came from IF and were inserted into the R&S model, which was adjusted to mimic the international forecast.

MR. TRUMAN. That was part of the mimicking process.

MR. PROMISEL. So the model was complete for the R&S side, with all the adding up constraints, but it used the IF forecast for the international side. Maybe when they did "what ifs" and other simulations, then they might have used their own equations.

MS. JOHNSON. They did the same thing in many respects with judgmental forecasts for consumption and investment and whatnot, right?

MR. PROMISEL. Right.

MS. JOHNSON. They would tinker. They would benchmark the model to the Greenbook to get a baseline.

MR. TRUMAN. It's an interesting, important, and relevant feature of the way the Board was organized in this area. From the start in 1950, IF was engaged in the forecasting process and therefore was engaged in thinking about monetary policy. In contrast, in many other central banks, the international department was basically focused on international relations, and to some degree following developments in other countries, but the external sector of the national economy was in the domestic department. That meant that our division was much more engaged in the monetary policy process than were international divisions at other central banks. And although it created some tensions, I always thought that they were relatively healthy tensions. I used to say that the job of Jim Kichline and me—and later Mike Prell, Don Kohn, and me—was to manage those tensions. The fact that you had two and then three research divisions whose

work often overlapped actually created a constructive, if somewhat competitive, environment. Sometimes the competition threatened to get out of control, but on the whole, it was quite healthy to have people in the international finance division thinking about things which were going on in R&S and later in Monetary Affairs. But in the forecasting process, it was pretty clear what we were responsible for. There were admittedly some complaints.

In the 1980s, we had the view—heavily influenced by Mike Dooley, among others—that the dollar was riding for a big fall. As the dollar rose to its peak in early 1985, we put into the forecast an ever-larger decline of the dollar, which of course implied an ever larger effect on forecasts for prices and real economic activity. I think Peter Tinsley wrote a paper that said that this feature of the international forecast was jerking around the domestic forecast more than was appropriate. I don't know how the paper got produced, but it must have been an interesting process. They didn't come and beat us over the head about it. In some sense, it came from the modeling people and not from Jim Kichline. As a result, we ultimately changed our forecasting process to include some equation-based input, including some elements of a random walk. We moved to a process that included a judgmental sense of the direction that we thought the exchange rate might take. We were informed to some degree by uncovered interest parity, but we demonstrated at the time that we could do better in the short run than uncovered interest parity. And then we would describe the forecast in terms of risk, so we did not have some important variable called the "exchange rate" jerking around the real side of the forecast all by itself. It took us a while to get there, and I don't think we made other major mistakes in the forecast process. There was an important lesson in all this with respect to cooperation.

The other part of the forecasting process was that the judgmental forecast tended to be driven by the top line or the bottom line, whatever way you want to think about it; Jim or Mike

had a view about the real GDP (gross domestic product) growth rate, and maybe also about prices in the aggregate, but real GDP was more relevant to international finance. For example, if we gave Jim or Mike net exports that didn't actually help in reaching his GDP target, R&S would bury an offset somewhere. A convenient place to bury too much or too little net exports was in inventories because the level of inventories was relatively unimportant in the forecast. Most commercial forecasts buried the reconciliation with their bottom lines in net exports, but we did not. And there was a certain back and forth between us and R&S as they would say, we're going to have a certain top line. This sometimes created a problem in making the various pieces add up among the different divisions. Within R&S, Kichline or Prell could, I assume, simply decree that they're going to chop inflation down, investment down, and so forth. But between R&S and us, it was sometimes more of a negotiation.

MS. JOHNSON. You have touched on a much bigger issue, and maybe this is the right time to move on. A slightly different way to restate the point you made a little while ago is that in many other central banks they're dealing with a thoroughly open economy and they would simply tell you, "We don't have a domestic department. We just have a group of international economists because we're an open economy. Then we have some political types and we have some systems types. We are here doing international relations, but we're an open economy and everything we think about and every aspect of our economic analysis is totally immersed in an open economy perspective." In that vein, you could describe the same phenomenon Ted just described, but using a slightly different world view, namely, that we had this strange R&S division that had this closed-economy view of life, and we kept trying to help them learn.[6] So I

[6] It is of note that the IF division was created in 1950 out of several sections in R&S. (That history was covered, Ted Truman thinks, in the interview with Bob Solomon.) That fact may have contributed to the arrangement by which the IF division continued to be involved in the FOMC process, including forecasting.

think issues—certainly going back to 1972 and moving forward—about how the view of the United States evolved from being only a little bit open to being a partner in a much larger global economy is right under the surface here of this conversation.

MR. TRUMAN. Well, the forecasting process pre-August 1971 when the U.S. closed the gold window and exchange rates floated for five months, or pre-March 1973 when generalized floating of the major currencies began—it was much easier. Back then, you didn't have exchange rates moving things around, so producing a forecast of X-M was pretty straightforward. There was some influence from prices, but the point is that countries' rates of inflation also were pretty close to each other. They were not identical, but they drove the real exchange rate process. So, in a Bretton Woods world where most exchange rates were fixed and pegged to the dollar, you could forecast exports and imports relatively straightforwardly; it was all about income and and a bit about prices.

I agree with Karen's point about other more open economies, although it is probably a little too strong for the Bank of Canada where the U.S. economy is followed by the domestic staff. In other central banks, certainly the Bundesbank, the Bank of France, and the Bank of England, she's right; basically, the international people had nothing to do with thinking about the domestic economy. On the international side, they may have had people who followed the IMF or the OECD (Organisation for Economic Co-operation and Development), and took care of the international relations side of things. But they were not intended to be highly integrated into the domestic monetary policy process. We were a little different in that regard, at least at the staff level; we had people who were more integrated into the domestic monetary policy process, all coming from the international side.

MR. PROMISEL. I'd like to make two points, one in answer to your question. Here is a chart of the current account as a percent of GDP. Until the mid-1980s, it was within plus or minus 1 percent. Subsequently, there were big moves, but it wasn't as if it affected the real economy all that much. This is not as the input into the forecasting process but, as an ex post matter, this is when the big changes in the external accounts really started mattering in the mid-1980s. This business about forecasting the decline of the dollar accordingly became important. To be fair, we were right eventually about the sharp and large decline of the dollar, but we were wrong for a long period of time.

MR. TRUMAN. Yes, that was the problem, and Peter Tinsley and others in R&S were right to call us on it.

MS. JOHNSON. On the other hand, the whole economics profession struggled with that problem and ultimately developed special models and special terms to describe that phenomenon.

MR. PROMISEL. In the mid-1980s, we were talking a long time about the dollar going down. It kept going up until—

MS. JOHNSON. Until it then went down.

MR. MARQUEZ. But not through regular market forces, correct?

MS. JOHNSON. The dollar turned before the Plaza agreement in September of 1985.

MR. TRUMAN. That's your version of the story, Karen. [Laughter] And I happen to agree with it.

MS. JOHNSON. Historically, you could point to some exchange rates that peaked prior to September, but the whole issue of what Plaza did is such a huge topic. It needs its own separate piece of the conversation.

MR. TRUMAN. I think concern about the external accounts and the trade and current account balance was progressive as the system broke down. My sense of the Board in the pre-Smithsonian (December 1971) world, or the pre-August 1971 world, is that there was much less international focus—although certainly there was a sense in which FOMC deliberations under Martin were affected by what was going on with the dollar and in particular the build up of official dollar claims on the United States, the effects were not large. The Federal Reserve was also a different world itself. You had the Martin-Burns changeover itself roughly coinciding with the change in the international monetary system. Therefore, it is difficult to figure out what was the source of change. Essentially you had the breakdown of the Bretton Woods system, which took a couple of years. Then you had the oil shocks, rapid inflation, and you had wide swings of the dollar, all going on at the same time, in the 1970s. That very much brought home to the Board and the FOMC the relevance of international considerations, whether oil prices or commodity prices generally. It took a long time for everybody to get their heads around that set of changes. The initial response to the oil price shock was to emphasize that it was a tax that was going to depress real GDP, and the Fed eased in the fall of 1973. Then, in March 1974, they moved the federal funds rate back up again to reach 13 percent in late May, from May to July, and then the rate came back down. So, in that sense they were wrestling with the monetary policy implications of the oil price shock.

We did the same thing in 1990 and the first Gulf War. The analysis by then had progressed to thinking about nominal GDP in this context. The question was how do you make the split between the real effects and the price effects? How much do you let go into prices? How much do you let go into real GDP? What do you think about keeping the growth rate of nominal GDP steady, which allows some of each, or do you let some further increase in nominal

GDP to flow through or the reverse? That was a slightly more sophisticated way of posing the question. It didn't give you an answer [laughter], but it recognized that there were the two forces involved. Now, if you worry about core price inflation, then you've got an even bigger problem: Some of the increase in energy prices will seep into core prices and you have to decide how much you want to tolerate.

One of the reasons why the 1973-74 episode loomed relatively large in my career at the Board was that I was involved in writing Burns' testimony in which he informed the world about the shift in strategy from fighting the recession in 1973 to fighting inflation in 1974. This was a time in which the FOMC didn't make announcements. It was during the transition to monetary targeting, and it wasn't quite clear what the target for the funds rate really meant in that context or how it was communicated to the market, or how it then got communicated from the market to the front pages of the newspapers and to the Congress. Burns testified in February 1974.[7] He basically told the Congress that inflation was a problem and now we're going to start fighting inflation. Ralph had asked me to participate in the writing process. It was very educational. It was the first time I had gotten involved in writing for someone else. I had commented on drafts before, but had not actually drafted. Lyle Gramley was the chief drafter but, because the testimony dealt with oil prices, the international division had more to do with that testimony than often was the case and Ralph had identified me to work on the project. (I think that Ralph thought that I would learn a lot from working with Lyle, which I did.) This was, I think, after Paul Wonnacott was briefly in the division in a senior position and would have worked with Lyle. Paul was here for about a year, but then had a big debate with Mr. Burns. They had a parting of ways, and he went back to (the University of) Maryland. [Laughter] So, I was the

[7] Statement by Arthur F. Burns, Chairman, Board of Governors of the Federal Reserve System before the Joint Economic Committee, February 26, 1974.

second string. The testimony experience was very instructive. The initial outline, which was prepared by Lyle, went through the various points that were going to be covered. Then, at the end, there was a single word "benediction," proving that Lyle and the Federal Reserve staff did have a sense of humor. [Laughter]

I also learned two lessons from working with Burns on that testimony. Lesson one was you can almost always find a fact to support your statement as long as you're willing to look hard enough and adjust your wording so that it corresponds to the fact. Burns was very fussy about that, making sure he had the facts to back up his statements. Lesson two was that he felt it was politically important always to mention unemployment. This was before we got fully into the dual mandate business. But he knew that employment is important to Capitol Hill, so his view was don't write a testimony that doesn't mention it, especially when unemployment is high─showing his political skills and sensitivities. It was an interesting experience.

MR. PROMISEL. We might be finished with the forecasting issues, and if so, there are a few pieces to fill in. I'm trying to remember who was there dealing with the capital account. I guess Bob Gemmill was in that same section, but it was before we started getting into thinking much about elements of the capital account, which never affected the forecast all that much.

MR. MARQUEZ. This was the mid-1970s?

MR. PROMISEL. Before Lois Steckler and Guy Stevens and other people.

Secondly, I don't remember whether we went back to look at the accuracy of our forecasts. As they later became more model-driven, I wonder whether that improved the forecasts. Exchange rate forecasting in the division was a big deal; you might want to elaborate on that at some point.

And then there was the rest of the world. As our trade forecast became more model-driven, we needed more explicit inputs on the rest of the world, so the World Payment section and then other parts of the division began forecasting in a more quantitative, more formal, way the rest of the world.

MR. TRUMAN. Those are important points. The capital account was covered from the USIT section (U.S. International Transactions), but in the 1970s there was no projection of the capital account items. Even from the very beginning of my career here, there was always a section in the Greenbook on capital flows. One of the first things I had to do when I was first here was to write that section and try to make some sense out of it. It was a difficult assignment. One wrote about the various lines describing what went up and what went down and about flows into and out of banks and nonbanks. But it was very difficult to tell much of a story. Part of the reason we covered this material at all may have been related to the fact that we had things like the interest equalization tax going on. We also had the voluntary foreign credit restraint program. We had all kinds of controls, so the capital account was clearly something that was relevant. We knew about capital flows. [Laughter] We talked about official reserves because that was part of the Bretton Woods–type world.

So, the capital account was always there. It didn’t necessarily lend itself to a story that integrated into the rest of the forecast, except that we used the capital account and its components in trying to produce the first MCM. Often in FOMC chart shows, I would have something about the capital account, probably because there sometimes were questions from members about it, so I figured that you had to look at the capital account. This was where I got taught a lesson by Lois Steckler that what you observe in the capital account data, such as they are, is all ex-post. The notion that you can read motivation into the fact that banking flows went

up, or equity outflows went up, or whatever it might be, was complicated, if not impossible, to discern because you were observing the interaction between supply and demand in terms of exchange rates and prices of assets. There are exceptions such as when banking claims on developing countries are being drawn down because of concerns about those countries and actual or potential crises. In Chairman Bernanke's famous speech about the savings glut, he talked about ex-ante savings.[8] It was an appropriate thing to do, but most people wouldn't think about it that way. They'd look at the ex-post data and draw conclusions, which is not really the right thing to do. It's really trying to deduce motivation out of an ex-post realization, where you actually don't know how supply and demand are behaving most of the time. But, capital flows were there all along, and we followed them. We didn't forecast them until much later, but attempted to cover them.

Every 5 or 10 years we did go back and look at the forecasts for accuracy. That certainly was part of the general culture here. It's an interesting question whether the accuracy improved over the 20 years I was at the Federal Reserve Board, controlling for the fact that the world probably was somewhat more volatile. I would like to think it did improve somewhat, but probably not as much as we'd like to fool ourselves to think.

Larry is absolutely right that the overall forecast became increasingly detailed. If one looks at the Greenbook forecast tables as of 1972, they were less detailed than the Greenbook forecast tables of 1998. I think we added to this process over the years and when I left the Board in 1998 the IF division had four tables in Part I of the Greenbook; two provided forecasts of foreign economic activity and inflation, and two provided details on the current account forecast. Initially it was inflation and economic activity in the other G-10 countries, individually or as a

[8] The Global Savings Glut & the U.S. Current Account Deficit, Remarks by Chairman Bernanke at the Homer Jones Lecture, St. Louis, Mo (April 14, 2005)

group; then as Mexico, Brazil, and Asia became more important, the developing countries were added as a group. Those inputs went into the USIT model, but they were used themselves in the various sections in the division to think about developments in Asia and the various parts of the world, and the implications for the U.S. economy. We had for all the major economies a rudimentary forecast. The various section chiefs, whether it was for the World Payments and Economic Activity section or for the International Development section, would encourage their country economists to be systematic in thinking about Brazil, Germany, Korea, or whatever the country might be.

To some extent, that helped to pull the whole IF division into the forecasting process. We were increasing the number of resources being devoted to the forecasting process. Some people didn't think that was the wisest thing to do. What difference does what's going to happen to Belgian GDP make? The answer is not much. On the other hand, it was also true that Belgium or any other given country is a laboratory for what's going on, so for that reason we did have people who were following Belgium, probably along with several other countries. The German Bundesbank did have interactions with the central bank governor of Belgium, they had a view of the outlook for Belgium, which could be informed by the OECD or the IMF. Initially, unless someone got really interested in it and did research into what was going on in a country, the process was one of taking the latest forecasts from international agencies or consensus forecasts and saying, "How am I going to fine-tune this forecast?"

MR. PROMISEL. There's another example of where our exchange rate forecast complicated our lives because it would be tempting to just take OECD forecasts for the small countries. But if the underlying exchange rate forecast that we had was very different from what the OECD had, which was typically an unchanged exchange rate—

MS. JOHNSON. For technical reasons.

MR. PROMISEL. —for technical reasons, then it was very difficult to justify taking their GDP or price forecast.

MR. TRUMAN. Yes. I recommend we reserve the foreign exchange forecasting until that subject comes up.

MS. JOHNSON. You've said already that the issue really was of capital flows and long-term versus short-term flows and who was holding the dollar and of people demanding U.S. gold and all that. We struggled in that period to come up with the right compilation from the balance of payments tables, which, after all, are just two double entry bookkeeping things. And my memory is of something called the "basic balance," which is the current account and long-term capital flows. Did the division or did you, either when you were here at the Board or when you were at Yale, actively engage in this attempt to figure out what concept we should be worried about in terms of this international balance?

MR. TRUMAN. I think people were worrying. A lot of it probably took place in the 1960s before I arrived at the Board. You had the Bernstein Report about how we should think about the balance of payments. We had these screwy concepts such as the liquidity balance, which actually was asymmetric. It treated U.S. liquid claims on other countries as US liabilities—they were part of the deficit. There was a big debate over that treatment and it was replaced, actually supplemented, by the official settlements balance which was the sum of outflows of international reserves, principally gold, and the build up official holdings of liquid claims on the United States. The whole issue of finding the right "balance" was driven by the gold problem.

And then you can think about capital flows, some of which are stable (don't fluctuate much quarter to quarter) and others of which are unstable (do fluctuate from quarter to quarter). That's where the basic balance comes in. So, you could think about long-term direct investment, and maybe some components of portfolio investment, such as purchases of equities, as part of the basic balance, and that was advocated as something that was more than just the trade or current account, and it's still used today. Goldman Sachs drives its exchange rate equation, its exchange rate forecast, by the basic balance, so this is a concept that is still around today. You can always choose what you want to put above the line and below the line. I don't think the basic balance was something that we particularly found useful. I certainly didn't.

I had, and still have, this little bugaboo about people who, even in the context of subsequent international financial crises, say, well, direct investment is stable and these other things are unstable; but that's just because of how we do the accounting. We count something as direct investment when the investor has as small as a 10 percent stake, which may not be a controlling stake. But the financing of that stake could be either onshore or offshore, and as the investor changes the financing from onshore or offshore it's going to have implications for the exchange rate of the country involved—but the stock of direct investment, as measured in the accounts, will be unchanged. It is true that, as a first approximation, there is some difference between short-term overnight borrowing by Korea's banks and foreign direct investment. But it is not quite as black and white in terms of thinking about pressures on the Korean exchange rate one way or the other as descriptions, like the basic balance, which said this is long term and stable and everything else is hot money.

MR. PROMISEL. On the other hand, Goldman generated a $16 billion bonus pool because it used basic balance.

MR. TRUMAN. I suspect Goldman does not use the basic balance in its own position taking, but who knows?

MR. PROMISEL. Could be. It's hard to say we're wrong or they're wrong.

November 30, 2009, Afternoon (Part 2 of 3 of the Interview)

[Interview resumed after lunch]

Early Projects and Reforming the International Monetary System

MR. SMALL. We left off this morning talking about your early years at the Board. You were in the Balance of Payments section. Let's talk about your career ladder to becoming the division director, and some of the projects, issues, and personalities that you worked with.

MR. TRUMAN. That's fine. Even though I was in the Balance of Payments section, because other things were happening, Ralph Bryant pulled me into thinking about reforming the international monetary system. During the summer of 1972, the Committee of Twenty was formed to consider reforms to the international monetary system. Robert "Bob" Solomon went on leave from the Board to become the vice chairman of the Committee of Twenty. Paul Volcker, the Under Secretary of the Treasury, and George Shultz, the Secretary of the Treasury, were working on what they wanted the United States position on the reform of the international monetary system to be. In May 1972, before I arrived in June, Chairman Burns had given a speech in Montreal on the topic, and Ralph involved me in thinking about it once I got to the Board in the middle of June. One of the first major papers I did here was with Charlie Siegman about the international monetary reform. We went through innumerable drafts, and I learned something about joint drafting. Charlie was a stickler as a drafter and I was too, so there were a few tense moments, but we learned a lot from working together, at least I did. Late in the two-year international monetary reform process, in the following September—1973—Ralph decided to create something called the International Monetary System section, which was partly a way of giving me more exposure, but also part of organizing the work on international monetary system issues, which were scattered around the division. I was the chief and Mike Dooley, Jeff Shafer,

and David Dodd were the other economists in the section. We hired as the secretary of the section, Margarita Serafini, who ended up being my secretary pretty much continuously for the rest of the time I was at the Board and then well into Karen's tenure as division director. That group basically existed for a year, from September 1973 to September 1974, as the reform of the international monetary system process first got started with a whole bunch of working groups on the adjustment process, on convertibility, on intervention, and on the SDR (special drawing rights). Then it all came to an end in the summer of 1974 with a report, which didn't really conclude much, but it laid the foundation for a partial reform in a subsequent amendment to the IMF articles.

One of the first working groups was under the chairmanship of Bob Solomon. In the spring of 1973, I worked for Bob for a month or six weeks at the IMF and then came back to the Board. So, de facto, I was not doing very much in the Balance of Payments Section at that point; I was doing ad hoc projects, and Ralph must have decided that he wanted to centralize this activity, even though by the time we got to September 1973, the whole process had failed; we just did not know it.

The basic deal was to trade a return to some form of "asset settlement" in which the United States would give up reserve assets (gold or SDRs) to redeem liabilities when they built up in the hands of other countries (as under the Bretton Woods system) in return for greater symmetry of the adjustment process on the part of other countries. When countries were in surplus, they would be required to alter their policies, including adjusting their exchange rates. But that deal was not going to be made. The United States didn't put enough on the table on the asset settlement side, or was too vague; and on the other side, the Europeans didn't put enough on the table on the adjustments side or were too vague about it.

The French were the leading party on the other side; there was a meeting, I later learned, during the summer of 1973 in which the French signaled that they would not accept what was on the table. The clue came to me when Ralph sent me to a C-20 deputies meeting with Dewey Daane and Paul Volcker in September 1973. Volcker made an impassioned plea for the approach then on the table, but I noticed while he was talking that the French deputy, Claude Pierre-Brossolette, was rather ostentatiously reading the *Financial Times* and, thus, signaled his disinterest.

The C-20 process soldiered on but then the OPEC oil price shock came along later in the fall of 1973 and that pushed people in other directions and the whole process got sidetracked. Like any other process, once it gets going, it has a logic of its own. So, we had this section in the IF division that would follow these developments in preparing for the various meetings for these working groups. Various people in the section were on these working groups, and then there were meetings of the deputies, to which Dewey Daane and then later Henry Wallich went. The Chairman would go to the full committee meetings. So, it was a big organization of special international and national meetings. But by the fall of 1974 that had come to an end, and Ralph—who was fond of doing reorganizations every 18 months or so [laughter]—reorganized again and I was promoted to assistant adviser and named chief of the Balance of Payments section. It must have changed its name to U.S. International Transactions by then; it is listed on my vita as that. Sam Pizer stepped aside, I think, and became a special adviser, or had a different senior title. In the middle of all this, they changed all the titles to "officer" because Burns said he didn't know who the advisers were advising, and it certainly was not he. [Laughter] So Sam was some sort of adviser, but he was no longer a section chief. Charlie Siegman, I think, at that

same time became chief of the World Payments and Economic Activity section. This was part of Ralph's broader strategy to build up the division.

MR. SMALL. You said something like it all fell apart once the oil shock hit. What fell apart?

MR. TRUMAN. The effort to reform the international monetary system, to put Bretton Woods back together again.

MS. JOHNSON. It was a search for returning to something like fixed exchange rates or pseudo fixed or sometimes fixed exchange rates.

MR. TRUMAN. The formula was stable but had adjustable par values with provisions for floating in particular situations—that was what was committed to in March of 1973. I always thought that was the European formulation, but I learned at Ralph Bryant's interview that it apparently was Paul Volcker's formula given his attraction to fixed exchange rates in the interests of promoting discipline over economic policies. In fairness to the discipline view, I thought it was more the insistence of the Europeans to have floating only exceptionally, but apparently that was as much Paul Volcker's preference, even though George Shultz was not particularly in favor of fixed rates himself. He was more a floater type, and Burns, I think, was more supportive of fixed exchange rates. So, the attempt was to put the Bretton Woods system back together again but with a better adjustment process and better control over international liquidity, using SDRs, and more balance in terms of policy discipline, in particular on the United States as the issuer of the reserve currency. That's where asset settlement came in, so there wouldn't be a big buildup of reserves in the form of national currencies, principally the U.S. dollar.

MR. SMALL. Discipline on the United States and asset settlement—

MR. TRUMAN. Right. Not principally via gold, but via the SDR. The system would be designed with SDRs issued by the IMF, and they would be the fundamental reserve asset in the system. Countries could have some working balances in foreign exchange consisting of a variety of reserve currencies, but they couldn't get too large, and the balances could be put to the issuing country, meaning the United States, but also the United Kingdom or Germany—Switzerland wasn't a member of the IMF, so it didn't count—to settle in SDRs. So that's where the discipline came in, on the debtor. Then you had to have something else for the country in surplus. Bob Solomon, as I noted earlier, taught me never to say surplus countries and deficit countries. You talk about countries with a surplus and countries with a deficit; you could sometimes be one and sometimes be the other; at least, some countries could sometimes be one and sometimes be the other.

MR. SMALL. For the countries in surplus sometimes, that was the reserve indicator?

MR. TRUMAN. Yes. The thought was that for any country on either side, if reserves went down, either in level or change, somehow defined, that might trigger adjustment actions for the country in deficit because you always could run out of reserves, except for the United States as long as it could issue dollar assets that were accepted, but then that's where asset settlement came in. So, the system could force us to run out of reserves. For the countries in surplus, you had to have some mechanism to force them to adjust: float, or penalize them if they didn't float. They could grow faster (that could also help) or grow slower (that could also help) depending on whether there were unsolved inflationary pressures.

MR. SMALL. And you said the United States put too much or was too vague—

MR. TRUMAN. Well, basically the United States was willing to entertain asset settlement convertibility, as it was called, but we were never very clear about how we were going

to run that part of the system. We were focusing principally on getting the countries in surplus to adjust, Germany in particular and Japan to some degree. The United States and the European positions were two sides of the same coin, but we never got together. There were two pages of the book. We were on the left-hand side and they were on the right-hand side. We were never able to join the process, maybe because we didn't pay enough attention to their side, even though I think Volcker, if he got enough on adjustment, was prepared to do something or give something more on convertibility or asset settlement. But they didn't give us enough on the adjustment side to really get started. Then the oil price increase came, and basically people started worrying about growth and how they were going to finance their oil deficits. The oil-producing countries—somewhat like today—were a whole different kettle of fish in terms of their buildup of reserves. We didn't quite think about them in the same way we thought about Germany. At least, I didn't. One question is whether we should have, but that's a different question.

MR. SMALL. Were the Fed and the Treasury on the same page on this?

MR. TRUMAN. We acted as advisers, and the Treasury called the shots. The Chairman was quite interested in these issues—Chairman Burns could get interested in all kinds of things. For example, he directed me to write him a memo about the implications of liquidating the IMF, closing it down. So, I went and read the IMFArticles of Agreement and figured out how if it were liquidated it would meet its liabilities. The IMF also had quite a lot of gold. And the price of gold had risen. So, the answer is you would have a lot of profits or capital gains to distribute.

The international monetary reform process came to an end in the middle of 1974. The Outline of Reform, as the final document was called, was handed off to the lawyers and the executive board of the Fund.[9] They ultimately drafted an amendment to the IMF Articles of

[9] See Annual Report (1974), International Monetary Fund, pp. 49–50.

Agreement, which contains some of the things that had been agreed to, like making the SDR the principal reserve asset in the international monetary system. You notice how successful we've been in fulfilling that commitment. [Laughter] They never did agree in the C-20 on the exchange rate matter.

Meanwhile, Volcker left the Treasury, spent a year at Princeton, and then in 1975 became president of the Federal Reserve Bank of New York. Volcker's successors at the Treasury negotiated the framework for the post-Bretton Woods exchange rate regime, the new Article IV of the Articles of Agreement, which sanctified floating more freely than the C-20 formula of stable but adjustable par values with provision for floating in particular situations. The framework left open the possibility of going back to a par value system by an 85 percent vote of the membership of the Fund and called for a stable system of exchange rates rather than a system of stable exchange rates, and mandated firm surveillance by the Fund over the exchange rate policies of members, with restrictions against manipulating your exchange rate to gain competitive advantage. That agreement wasn't reached until November 1975, the Rambouillet Economic Agreement at the time of the first G-6 economic summit.

Meanwhile, I'd become, as I said, chief of the Balance of Payments section, and I guess we changed its name by then. Ralph went on leave to Brookings in September 1975 and the Board set up a system in which John Reynolds was the acting director. He had a committee that worked with him—George Henry, Charlie Siegman, Sam Pizer, Bob Gemmill, and me. Carol Henry called us John and the Belmonts. [Laughter] We ran the division by committee for more than a year.

MR. MARQUEZ. How big was the division then?

MR. TRUMAN. When Ralph took over, the division had a newly authorized strength of something like 115 or 116. Ralph was constrained not to immediately go to that size, so by this time it was around 107. It was 110 plus or minus from the time I arrived in 1972, or at least by the time I became division director in 1977, until I left. There were periodic cutbacks. We would have some reductions in force, as we went through a budgetary restraint process. We'd lose 5 to 10 slots and go down to 100, and then go gradually back up to 110, 112, 113, so it was in that range.

Over time, there were two major trend shifts. One was the nature of human capital. We phased out statistical clerks, research assistants, and as much as possible secretaries—they didn't disappear as fast as everybody else—and we phased in more economists, so the split between economists and the others went from maybe 40/60 to 60/40 over time. We also had a huge shift from labor to capital. The human capital ratio went up in the form of more economists, and the computing capital went up, too, as everybody moved to word processors.[10]

MR. SMALL. Going back to this earlier discussion. The United States had a current account surplus from the beginning of 1973 to the beginning of 1977. During the period, when you were talking about the reform, we were one of the countries in surplus.

MR. TRUMAN. Current account surplus. The point is that the focus essentially was on the composition of the capital account. Even though we were in current account surplus, other countries were building up their official holdings of dollars via intervention because outflows of U.S. private capital were larger than inflows of foreign private capital. That is the big difference between how people are thinking about this question today and how they thought then. They say, "China and the United States today are just like Germany and the United States were in the

[10] My understanding from research done by Jaime Maquez after this interview was completed is that I was incorrect about the increase in the number of economists from 1972 to 1998. There was, however, a reduction in secretaries.

1960s and 1970s." Wrong! We were in current account surplus throughout most of that period, and the discussion was all about the composition of the capital account. Today it's about the current account deficit and the trade deficit. They're related, but there isn't, in my view, a direct link between the reserve currency role of the dollar today and our current account deficit. There also wasn't a link in the 1960s and 1970s between our current account surplus and our deficit on the official settlements basis.

MS. JOHNSON. But the question is still about composition.

MR. TRUMAN. Everything has to add up. But the important aspect of the Bretton Woods system—and would have been in the reformed system—is the composition of the capital account. Although there was a big capital outflow, and the overall capital outflow was bigger than the capital inflow as it had to be, because otherwise we wouldn't have capital account deficit along with a current account surplus. And a large component of the capital account inflow was official claims on the United States.

MS. JOHNSON. Some of them grudgingly.

MR. TRUMAN. Right, grudgingly. Germany was buying dollars, because Germany didn't want the DM to go up.

Becoming International Finance Division Director

While Ralph Bryant was at Brookings and didn't come back, relations with Chairman Burns were handled by John Reynolds. Burns didn't like to deal with lots of people, so big meetings with seven or eight people around the table were rare. But John would force them periodically. Burns would have breakfast and we would all get together and talk to him about current events, maybe because we were this committee, but most of the relationships between the division and the Chairman were through John. It was complicated because John was on dialysis

three times a week, so often he wasn't here, or when he was here, he was pretty tired. The structure was such that John and Bob Gemmill were the two people from the division who went to FOMC meetings. We shared around other responsibilities normally associated with the division director, within this group. It worked remarkably well, running a division by committee. There was a relatively high level of respect among Charlie, George Henry, and myself, who were the Young Turk types, and among John, Bob Gemmill, and Sam Pizer, who were the Old Guard types, at least in my time.

When Ralph chose not to come back, which we knew was a possibility, the Board started looking for another division director in the summer of 1976. The Board approached a couple of people from the outside, neither of whom I thought would be particularly attractive, at least for economists. They were non-economist types. I can't even remember their names. It's not particularly relevant. We were not consulted in this process. Maybe John was. And I suspect, by the way, that Henry Wallich was.

Henry Wallich was quite alone in handling international matters at the level of the governors in the 1970s. You had one international Governor: First, Dewey Daane, and then you had Henry—who had succeeded Dewey in 1974—coming to the Board from Yale, where I had been his colleague. We were not particularly close at Yale, but we were colleagues, which I suspect helped me somewhat. But in general Henry was a gentleman and very protective of the division. (He died in 1988 at the age of 74, having left the Board in 1986 in poor health. I organized a little festschrift for him that was published by Peter Kenen at Princeton. The writers were former students and colleagues and we were able to get it to him before he died. Dave Howard did a lot of the work.)

The other Governors in the 1970s and 1980s basically had only a limited interest in doing anything international. One Governor, I think, other than Henry, would go to the EPC (Economic Policy Committee) meetings at the OECD sometimes, or maybe deal with something having to do with Latin America. But basically, there was one Governor who handled everything international in those days. That Governor was principally related to the international division, and I suspect it was Henry who was primarily involved in resolving what to do with the division director position. I suspect that Burns consulted him or vice versa. It was clear that John Reynolds was getting weaker and weaker. John was a wonderfully generous man and probably sacrificed himself for the division during this period. I'm sure that in his few moments with the Chairman he would say, "We have to resolve this in a way that gets things done. I can't hang on too much longer." I don't actually know how they got to saying, "It's going to be Ted." I had been appointed associate director. That's when we had done another transformation in the context of Ralph's going on leave. I looked this up. John was the acting director, and I was associate director, and the other people were senior international division officers, as they were called. In that loose sense, I was slightly outranked, but I'm not sure.

I think what convinced Burns that I was all right were two things. One was a slight coincidence. Earlier we mentioned my father, David Truman. Burns had come to Washington from Columbia University in 1969 where my father taught, and my parents knew the Burnses socially—not well, but well enough. I had once been on a trip with the Burnses and my mother said, "You must say hello to Helen Burns for me because we used to pour tea for the Columbia students together." At the next opportunity, I did that while we were in Paris at another meeting, and she said to Burns, "You know, Bet, Ted Truman is Dave Truman's son." I never understood why, but Bet was her nickname for him. For the next six months he called me Dave [laughter];

so much so that Catherine Mallardi got very upset.[11] Finally, one day she chased him down the hall and said, “Dr. Burns, Dr. Burns, you know it’s not Dave, it’s Ted.” She got quite upset, as only Catherine in her own way could get upset, so I explained why he was calling me Dave. She said, “I understand now. It’s all right,” at which point he stopped. [Laughter]

The other thing that helped convince Burns that maybe I could handle this job was that, as we got into 1976, we had two crises. We had the United Kingdom sterling crisis with its balance of payments problems. The FOMC granted the British a drawing on their swap line on the condition that if they couldn’t pay it back within six months they would go to the Fund, and in the end they did go to the Fund. They had to have an IMF program. I drafted a letter from Burns to the Governor of the Bank of England, Gordon Richardson, to that effect. The availability of the Federal Reserve swap line was linked to a much larger package of temporary support from other central banks that was organized at the Bank for International Settlements. At approximately the same time, Mexico got into trouble. It happened to be one of their election years and cycles of external crises—Lopez Portillo was getting elected. Mexico had a crisis, and it also had to go the Fund. Chairman Burns got very interested in this case, and I did a lot of work trying to figure out what the problems were, how to fix them, and what their policies were. I and others in the division worked hard on those two crises—that probably helped convince Burns that maybe I had some merit.

United Kingdom and Mexican Financial Crisis in the 1970s

MR. SMALL. On the nature of these crises, what are the repercussions, why did we care?

[11] Catherine Mallardi was Chairman Burns’s secretary.

MR. TRUMAN. In the British case, sterling had declined a lot. Their inflation was high and their growth was low, relatively, and the British had this special problem that Britain was also an issuer of a reserve currency. There were these sterling balances, some of which had been there in London since the end of World War II, and they were a potential claim on goods and services or gold under the Bretton Woods system.

MR. SMALL. Foreign claims?

MS. JOHNSON. Of Commonwealth countries.

MR. TRUMAN. Australia, New Zealand, Saudi Arabia. It was broader than the Commonwealth, lots of Gulf countries also. And those balances were partially blocked. They could be used for certain purposes by the countries, but they were a potential overhang.

The United Kingdom also had capital controls, so the sterling balances that were held by other countries were not in general available. The question was how to manage them. On the one hand, the United Kingdom had a current account deficit, low growth, high inflation, pressure on sterling. Just letting it go and basically devaluing the sterling balances that were locked up in the Bank of England was a problem. And, it wasn't private claims on the United Kingdom, it was official claims on the United Kingdom, so it had implications for how the overall international monetary system worked. We still had enough of a view that the United States and the United Kingdom were in the monetary system together—"special relationship" and all that. That's basically the reason why we were particularly involved, as I remember it. But part of it also had to do with the nature of the policies in the United Kingdom, and the view was it was on an unsustainable policy course. The United Kingdom had to reverse course, cut its budget deficit, tighten the growth of its money supply, and push up its interest rates.

MS. JOHNSON. You've got to remember that Margaret Thatcher was on the horizon at this point.

MR. TRUMAN. Yes, she wasn't there yet, but she was four years later.

MS. JOHNSON. That's how she ended up there. During the oil crisis, the United Kingdom's inflation rate rose as high as 25 percent, so it had a bad set of years. The 1970s were not kind to the United Kingdom.

MR. TRUMAN. Moreover, given that the United Kingdom had locked up the sterling balances for years through restrictions—this was all part of the war effort—a proposed solution that involved stiffing Australia or the people or the countries that had stood by the United Kingdom during World War II, is one thing, as opposed to stiffing Citibank or whoever else it might be. So certainly, the British felt a certain moral obligation.

There were two parts of this process. One part had to do with getting the United Kingdom in late 1976 to go to the Fund and change its policies. Going to the Fund was an excruciatingly complicated process. It still is. For that generation, it was a bit like Black Wednesday was in 1992, when sterling pulled out of the ERM.[12] It was the end of the United Kingdom as a major player in the official international financial system, having to admit that it was just like Mexico. Italy had its economic and financial problems, too, at that time, but Italy was in a different category. So, you had the basic macroeconomic policy configuration, and this inflation rate that went to 25 percent, as Karen remembered, on the one hand; then you had the sterling balances, on the other hand. Finally, they made peace with the Fund.

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[12] The European Exchange Rate Mechanism was a system introduced by the European Community in March 1979, as part of the European Monetary System (EMS), to reduce exchange rate variability and achieve monetary stability in Europe, in preparation for Economic and Monetary Union and the introduction of a single currency, the euro, in January 1999.

Then, as the second part of this process, the British negotiated an agreement to backstop the sterling balances.[13] Burns was adamant that nothing would be done about the sterling balance until the British reached agreement with the IMF. Sterling had received a great deal of central bank support via swap arrangments in the 1960s, including two arrangments in 1966 and 1968 aimed at the problem of the sterling balances. The 1977 arrangement was essentially to provide a safety net against these balances being drawn down too rapidly. We were to provide a backstop to the BIS, via a swap with the BIS, which was financing the backstop for the sterling balances in case they were drawn down too rapidly. The U.S. Treasury in turn provided us with a takeout if our swap with the BIS was outstanding for more than a year. The aim was to maintain the short-term nature of the swaps in general. At the same January 1977, FOMC meeting, at which this arrangement was approved, the FOMC also approved a so-called "warehousing" agreement with the Exchange Stabilization Fund (ESF) of the U.S. Treasury through which we sold swap dollars to the ESF in exchange for foreign currency that they held. In principle, these were three separate agreements, but they were linked. We worked hard on those issues with people like Larry (Promisel) and Dave Howard. I attended a meeting in Paris in December 1976 with Alan Holmes on the sterling balances aspect.

In the mid-1970s, in the wake of the first oil crisis, a number of what we now call emerging market countries had balance of payments crises and had to go to the Fund. Mexico was the only developing country with which we had a swap line and there was a certain sense, at least in some circles, that we had a special relationship with Mexico. It was not an accident that Mexico had a swap line and no other emerging market country did. How it came into being was that they asked for it and Chairman Martin said yes—in 1969, I think. I think they were the last

[13] There had been two previous sterling balances agreements.

country added to the swap network before it was largely dismantled in 1998.[14] The United States had, obviously, an economic and financial relationship with Mexico, and in some sense the swap line was to backstop that relationship. We let Mexico draw only in the context of their going to the Fund for an economic program. It was complicated because they were in the process of having a presidential election. (We were having a presidential election as well, which also complicated things on our side.) I worked with Yves Maroni, in particular, trying to figure out what was going on with Mexico and writing memos to the Board and Chairman about what we thought they should do and what the problems were. Through that process, Burns got somewhat more confident in me, so when he failed to attract one of two or three other people to the Board to head the IF division, in the end he agreed to my being director.

I must have started attending FOMC meetings some time in 1977, but normally I didn't go to the FOMC meetings. Occasionally I went to one for little pieces, like the sterling balances discussion or something like that where I was involved in the policy issue, but I got invited to the March 1977 meeting—that was the annual organizational meeting in those days—and to my surprise I was named as an associate economist from the division. Subsequently, I must have had some conversations with Burns when I became director—I don't remember all of this—because one thing he did tell me was, "We're going to make you division director, but I don't want you to travel. I want you to be at the other end of the telephone." It was the same issue as with Ralph. Burns wanted to deal with one person. He didn't like the idea of having three telephone numbers to call. So, we organized an announcement that had John stepping aside. The committee in the division was reconfigured. I looked this up. John was a counselor, senior adviser type; George, Charlie, and Bob were appointed to be associate directors, Sam Pizer was a

[14] Note that the swap network was reestablished during the global financial crisis of 2007-09 and, in part, is still in operation among the major central banks largely to provide liquidity in the respective currencies.

senior international division officer, and I was the division director. That's how we got to where we were by the end of June 1977.

MR. SMALL. Burns was still Chairman throughout this.

MR. TRUMAN. He was because that was a period of so-called coterminous terms, as we are today. He had become Chairman in January 1970, a year after Nixon had become President. He was reappointed in 1974, for a term that expired in 1978; he had been very anxious to be reappointed and went right back to work trying to convince Carter to reappoint him.

MR. SMALL. Wasn't Burns making speeches quite early about the lending to Latin America? Didn't he butt heads with Walter Wriston about Citibank getting so deeply involved?

MR. TRUMAN. There are two stories you can tell. One story, which I think is factually wrong but is the conventional wisdom, says that OPEC put all its money into banks and the banks lent it to the Latin American countries.

MS. JOHNSON. That was called petro-dollar recycling.

MR. TRUMAN. Recycling, true initially, but actually OPEC drew down its money quite rapidly, so by the time you got to 1977 and 1978, there wasn't as much OPEC money in the banks anymore, according to the BIS statistics. But the banks had started this mechanism, the syndicated loan business, and were expanding their balance sheets so that the banks needed to replace the OPEC funding and thus had a buildup in liabilities from other sources as well as replace some of the liabilities to OPEC. The developing countries did not adjust in the face of the oil shock as the developed countries did in their own way, at different rates, some more successfully than others, bringing down inflation, taking a recession. We didn't do such a great job, but the British did even worse. On the whole, we did better than some of the emerging market countries who just continued to borrow because money was cheap.

Dollar loans were particularly cheap because U.S. dollar real interest rates were negative in that period: The U.S. inflation rate was higher than the short-term nominal rate for much of that period. Burns was concerned about this lending process. He wanted a more disciplined system, so he wrote a complicated speech that he gave at Columbia University about having a rule-based system, which would be centered in the IMF. The speech was not focused on the exchange-rate-regime role of the IMF but on its more general role as an arbiter. In that sense, he was well ahead of his time. He thought a lot about the issues, but in thinking about over-borrowing by emerging markets, he did not think about our role in the process, which we at the Federal Reserve facilitated because why shouldn't you borrow with negative real interest rates—but that's a different question.

Charlie and I worked on that speech quite a lot and discussed it with Burns. I think he saw it as elevating his stature. It was delivered in May 1977.[15] The speech presented a vision of the system as he thought it should really be. And it strengthened the case for Carter reappointing Burns, which Carter did not do, though we waited a long time. It wasn't until early December that Carter nominated William "Bill" Miller to be the Chairman. Then because of questions about his previous business engagements, Miller didn't actually take over until early March, and Burns didn't leave the Board until the end of March.

MR. SMALL. When did the Mexican crisis really hit?

MR. TRUMAN. The Mexican crisis was in the summer and fall of 1976 extending into December when the new president took office.

MR. SMALL. So it was different from the British crisis.

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[15] Arthur F. Burns (1977), "The Need for Order in International Finance," Address at the Annual Dinner of the Columbia University Graduate School of Business, New York, April 12.

MR. TRUMAN. They were both going on at the same time in the summer and fall of 1976. In one sense, the two crises were similar because they were caused by the global economy having gotten over-inflated, and they were two vulnerable countries that ended up in problems. Italy also had difficulties in the same period. Mexico and several of the other major emerging market countries—Argentina, for example—had moderate debt crises, though nothing on the scale of what came in the 1980s. Partly it had been a function of the fact that the global economy had had a recession in 1974-75. There was a big collapse in the global economy, and people borrowed to get over the hump.

MR. SMALL. Can you give a picture of how you handled financial crises? I'll present one and you can correct it: For Britain, you get together with officials from a couple of countries in the Fund or the World Bank and resolve it. Then for Mexico maybe you get the same officials and maybe a couple private bankers or whoever had lent money, but still it's a finite group in the room working on it.

MR. TRUMAN. In the 1970s, when we addressed the Mexican crisis, there was some private money involved, but the focus was on official financing because of the difficulties in getting the correct figure on the private financing. One result of the crises in the mid-1970s was to step up our own data collection on U.S. bank exposures and to pressure other central banks through the Euro-Currency Standing Committee (now the Committee on the Global Financial System) at the BIS to collect and share, via the BIS, more data on bank lending around the world.

MR. SMALL. And you had time to work with the problem? It wasn't like what we went through recently where it had to be done overnight?

MR. TRUMAN. Yes. Much of the borrowing was official; some of it was from private banks, private institutions—a recycling process. Those debts were sufficiently small in the Mexican case that Mexico could get a program and meet its financial obligations as it tightened its monetary policy and fiscal policy. Mexico was helped along because shortly thereafter it discovered a substantial amount of oil. So, it only half implemented the adjustment program. Then it floated away on its oil revenues and, in some sense, it had its own resource curse, as we say. [Laughter] The 1980s were a lot more complicated. The UK crisis was largely handled by the IMF, except for the sterling balances aspect. However, there was a lot of high-level politicking involving the White House and the Treasury and the German authorities.

Goals as Director

MR. SMALL. Let's get back to your directorship.

MR. TRUMAN. In 1977, I became the director of IF. Things proceeded much as they had because it was the same group. John was tremendously relieved from the great burden that had been placed on him by Burns. John loved the Board and he loved the division. He really did the best he could, and we did the best we could to help him, but there was only so much that could be done. Although he came into the office a few days a week, he didn't spend much time here after the transition and he died within a few months.

MR. SMALL. When you became division director, did you have ideas about new directions for the division?

MR. TRUMAN. No. I thought that some of my job, at least initially, was to carry on the Bryant vision. That meant, among other things, supporting the multi-country model and encouraging good research and analysis. I also adopted Ralph Bryant's habit of offering sherry to recruits, which probably was a mistake. It was designed to make them relax and say that

we're not a stuffy bureaucracy. But I learned later that some recruits thought it was some sort of test.

We organized IF as a place where economists on average spent one-third of their time doing research, one-third doing current analysis, and one-third working on ad hoc projects. Though we tried to emphasize that framework, it was pretty clear that it only applied in the medium to long term. As you got into your career, you had certain comparative advantages one way or the other, for research or policy work. This was substantially different from the R&S model, which drew a sharper distinction between the sections that did research and the sections that did current analysis, even though both types of sections would do ad hoc projects. Also, we were trying to attract a younger staff, so we would hire young Ph.Ds. into the U.S. International Transaction section and the World Payments section. And we would encourage them to turn their Ph.D. dissertations into publishable articles, even if they weren't in the Trade and Financial Studies section. The model was basically Ralph's model. It was attractive to me, and it seemed to work well. I didn't have a different vision for what we were trying to do, which was to upgrade the research activity and keep people happy.

There was always some crisis or urgent problem going on in the global economy and that was a problem for some because it sucked up time and resources.

One of the other distinctions between IF and R&S was that we had very few specialists. Even the people who were covering the United Kingdom, Mexico, Brazil, or whatever current reporting responsibility it might be, did not—with the possible exception of Yves Maroni—turn themselves into the greatest expert on the countries they were following. There were variations on this theme: Some people became very interested in the countries or areas they were responsible for covering and did a lot of research on the questions they posed. An example Larry

Promisel reminded me about was Ray Lubitz, who at the end of his career and life was chief of the World Payments and Economic Activity section, as I recall. He was an expert on the Italian economy. He wrote academic papers, attended conferences, and did some advising for the Italian government on issues such as their wage indexation system. Ray died suddenly of a massive heart attack at the office one Friday afternoon. That was my first personal experience with death in the "family." Lyle Gramley and Larry Promisel spoke at his funeral and I asked Chairman Volcker to have a moment of silence at the start of the economic and financial review the following Monday, which he did. But, in general, the model for economists in IF was much more of the generalist than the specialist. In R&S, you had people who were experts on housing, for example (although they might not remain as the expert in housing when they moved up the ladder). In IF, the sections were smaller, and people moved between sections quite a lot, in part because they wanted to and in part because Ralph thought it was a good idea to move people around in different sections if they wanted to move. We basically kept ourselves pretty busy.

MR. SMALL. Has the role of a division director changed over time? Maybe earlier when there weren't such strong economists on the Board, more was delegated to the division directors?

MR. TRUMAN. Well, I'm sure that the situation has not changed all that much—or changed all that much while I was at the Board. With more economists on the Board, they get more interested in what the staff is doing—at times too interested—but this is basically healthy. The world economy has gotten a lot more complicated since 1970 and it moves at a much faster speed than it did in 1970. So, as you've said, when you were dealing with the Mexican crisis of 1976, you didn't have to worry about solving the crisis before the Asian markets opened, as they do today. Even in the 1980s and 1990s, you also didn't really have to solve the crisis before

Asia opened. With the October 1987 stock market crash, the Chairman's statement that the Federal Reserve would supply all the necessary liquidity was put out not before Asian markets opened, but it was put out before New York markets opened. Joe Coyne got caught up in traffic coming in and couldn't put the statement out. [Laughter] I said, "We could put it out through the Treasury," and the Chairman said, "No, we can't put it out through the Treasury, this one is a Federal Reserve statement. You guys are going to have to call the newswires yourself and read them the statement." I think we got some equivalent person to do it or Joe arrived in time and put out the statement before our stock market opened.

In the late 1980s, the world economy was less global, and slower in responding to events, compared with what Karen dealt with in the millennium changeover or the events of 9/11. The Chairman knew, and we did, too, but he probably knew before we did or thought about it before we did, that some U.S. stocks traded in Japan. So, we arranged for the Bank of Japan to send us a fax at the Tokyo market close about how those US stocks had done. For a time, someone in our Financial Markets section would take those stock prices and give them to the Chairman at 8:00 a.m. as an indication of how the Japanese market had closed on U.S. stocks. Today this type of information is routine because of futures trading. Every time you turn on the radio, you hear what happens in the futures markets and what they are "predicting" for the opening of U.S. markets. It was a crude device to get some sense of whether something was going to happen in the U.S. stock market. I think that Chairman Greenspan was somewhat fixated on the stock market, per se. I don't think he really had a view that the stock market was the barometer of what was going on, but it was a source of potential anxiety.

Another example was when the Board used to announce discount rate decisions. This was before the discount rate was tied, essentially, to the Federal funds rate. Changes in the

discount rate were seen at least as a signaling device, somewhat of an independent instrument, though it had limited economic significance. The Board would meet in the morning, review the proposals from the Reserve Banks, and decide on what to do—but the announcement would not be made until after the U.S. financial markets had closed. At some point, people began to ask, "Why are you letting the Japanese trade on our news rather than letting the American market trade on our news?" Because the U.S. market was closed during the Tokyo day, or large parts of it were, we switched to having the Board meet before the market opened in New York when the Board was going to consider these kinds of things. Then the announcement of any change was before the market opened in New York, so that the subsequent U.S. trading was in the context of other aspects of the U.S. economy as perceived by the open U.S. markets rather than as perceived by the Tokyo markets when the U.S. markets were closed. We were aware presumably that the knowledge of the U.S. economy was not as deep in Japan as it was in the United States. So that's another example of how things went from taking your time to taking a position before "Asia opens." But there were some elements of Asia opening first, even when I was here, because you knew that New Zealand opened first, and there was some sense that, if the Fed had taken actions over a weekend, you wanted to get those actions in place for the Asian market, not nearly as elaborately as has been true recently, but there was a consciousness of the Asian market setting a tone of reactions to weekend events, and it was important to try to get the message out correctly.

February 1986 Discount Vote

MR. SMALL. Let's discuss the so-called Volcker "revolt" in February 1986, when a majority of the Board voted against Volcker and two other Governors to lower the discount rate.

MR. TRUMAN. This is an example where the old system of announcing discount rate changes was helpful. We had a period in which the dollar had peaked in February and March of 1985. The dollar continued to go down and got another kick, whether or not it was necessary, in the wake of Plaza agreement in September 1985. It continued to go down into early 1986. By February 1986, Volcker was nervous and uncomfortable with the pace of decline in the dollar; he did not want the dollar's decline to get out of hand. As he said after the Plaza meeting, one can have too much of a good thing. This change in the discount rate was against the background of a big collapse in oil prices from $35 a barrel to $15 a barrel in a fairly short period of time. And there was a mini-deflation scare or some talk about it. I don't think they used the word "deflation," but clearly inflation was lower.

Manley Johnson and Wayne Angell had just been appointed to the Board on February 7, 1986. (In addition to Paul Volcker, the other Board members included Martha Seger, Preston Martin, Henry Wallich, and Emmett Rice.) Martha Seger had been here since July 1984. A request came in from some Reserve Bank for a discount rate cut, and four of the Board members—a majority—voted in favor of the request. There must have been some inkling of what was going to happen because part of the discussion and the vote took place in an executive session, so only the Secretary of the Board was there, and, I assume, Steve Axilrod. I was not there.

MR. SMALL. This was an executive session of the Board after the usual Monday morning staff briefing?

MR. TRUMAN. This was before they had minutes on these things, I guess, or staff may have been excused. There was a discussion. Volcker argued that he was concerned that voting to lower the discount rate would destabilize financial markets, particularly the dollar. He said

"Maybe it makes some sense, but I'd like to be able to talk to the Germans in particular, and maybe the Swiss and the Japanese, about whether they would join us in lowering rates, so that we could minimize the exchange market impact of any action like this." He didn't win that debate. I remember that part of it. So, then he may have said, "We should go into executive session," because I left. [Laughter] I do remember that I sent a note to Manley Johnson, whom I knew because he had come over from the Treasury. I said, "You know, basically, that this is not the right thing to do." I was very concerned; it was clearly awkward even from my perspective.

I had lived through one of G. William Miller's few mistakes when he allowed himself to be outvoted on a discount rate change by a non-full Board; there was no particular reason why he had to do so. There was a 3-2 vote when the Board, I think, had seven or at least six members. Miller didn't think about the consequences of being outvoted on a discount rate change 3-2, and it had a big impact on the markets. This was in the summer of 1978.[16] I was in Paris and Jim Kichline also was not in Washington, and maybe even Steve Axilrod was away. The Chairman could be outvoted on some bank regulatory issue, or a bank merger issue; it happens from time to time. But in 1986, as in 1978, having the Chairman on the "wrong side" of a monetary policy decision, as the discount rate changes were then considered, was going to send a weird signal. And it looked weird to do this just a few weeks after the arrival of the two new Governors. They arrived on February 7 and the vote was held on February 24, 17 days after they had been sworn in. But I was not there when they broke up the meeting.

MR. SMALL. So you left and sent a note to Manley Johnson.

MR. TRUMAN. By messenger.

MR. SMALL. Why did you send it to Manley?

[16] The vote was on June 30, 1978.

MR. TRUMAN. Because he was the only person who was voting for the cut in the discount rate that I knew at all well. I didn't have very good relations with Preston Martin. I didn't know Wayne; he had just been here two weeks. But I did know Manley from his period at the Treasury. I had no idea what other people did in the wake of the vote. I do not know who changed their mind and how that happened. As is often the case in these things, several people say they changed their mind later in the day. It was pretty clear from the outset that there might be another round of voting.

Henry Wallich was not well. He had a brain tumor. Although he continued to work, he was not here all the time. And while his thought processes were clear, his speech was not so clear.

At the time, I remember Henry Wallich sitting in the Chairman's outer office. I sat with him for a while because the word came through that there was going to be a subsequent meeting in the afternoon. One or more of the Governors involved in the process thought better of doing this, maybe it was Wayne or Manley—or both of them—or a message came from Secretary Baker, who I understand had been told by Volcker at lunch that he might be seeing a resignation letter. So, the Board met again in the mid-afternoon. The senior staff were all there at that point, and the Board majority agreed basically that "We'll postpone the decision. You [Paul Volcker] will have two weeks to see what you can work out with the Germans, the Japanese, and the Swiss."

Today they normally would have issued a statement right away. But because they didn't issue such statements until the close of business, they had another eight hours until Asia opened. That's a sort of irony. [Laughter] They could make a decision and have the ability to change their minds before they issued the statement.

MR. SMALL. You said it was unusual to do this in an executive session. What would the normal timing be?

MR. TRUMAN. Normally, during all discussions about discount rate changes, the division directors would have been present—Steve Axilrod (super director), Jim Kichline, and me; and later Don Kohn, Mike Prell, and me. I wasn't here during the Miller discussion that I just mentioned, so I don't know what happened at that time. The Board often used a discount rate discussion as a proxy to discuss monetary policy; they were obviously related. Board members could share their views about monetary policy in the context of considering a discount rate change proposal from one of the Reserve Banks.

MR. SMALL. Prior to the February 1986 vote—in the context of Volcker and his relationship with Jim Baker—there was a G-5 meeting in London where the finance ministers got together and wanted the central banks to ease but the central bankers rebuffed them.

MR. TRUMAN. The Plaza was in September 1985. They normally had a G-5 meeting in the early part of the year. In those days, G-5 and G-7 meetings did not produce communiqués.

MR. SMALL. Were those finance ministers?

MR. TRUMAN. They usually were finance ministers, central bank governors, and the finance ministry deputies. Volcker, maybe because he fundamentally had a lot of self-confidence and because he was a tightwad, tended not to take staff to those meetings. Why take your staff to a G-7 or G-5 meeting if they're just going to sit in the outer room? They fly over and back for a meeting, and all they do is sit on the airplane or sit in the outside room. He thought that was a waste of the Board's money. He tended not to take people to those kinds of meetings, unless there was some issue that he particularly wanted staff there to help him with. So, there were no staff members involved when Volcker went to the Plaza meeting though it was

in New York and Sam Cross, who was then the manager of the foreign exchange desk, had been alerted. There were no staff members at the regular G-5 and G-7 meetings. I was with him at the time of the Louvre meeting. I don't recall why he decided to bring me that time. He just said, "This time I want you to be here."

There may have been some differences of view at the G-5 meeting in January. Baker had pretty strong views about exchange rates and interest rates. (Moreover, subsequent evidence suggests that he often pressed the Federal Reserve for lower interest rates.) Baker wanted to have some influence on all the policy levers would be the way to put it. So, there may well have been a consensus among the finance ministers that interest rates should go down. The Bundesbank and the Federal Reserve were highly independent central banks. The Bank of Japan, the Bank of France, and the Bank of England weren't. In some sense, the two principal central banks were the Federal Reserve and the Bundesbank. Some people say the stock market crash in October 1987 was caused by Baker's criticizing Bundesbank monetary policy, signaling a breakdown in international monetary cooperation.

MR. SMALL. After the revolt, it was written in newspapers that the revolt by the Reagan appointees on the Board was managed behind the scenes by Jim Baker.

MR. TRUMAN. The notion was that four people were committed to go on the Board and lower interest rates. I don't know it for a fact, but that was my reading and it seemed to be correct.

Volcker's relationships with the Board members were not good. Volcker is a wonderful man and one of the nicest people I've ever known underneath his gruff exterior. He wasn't particularly collegial in his style, although he could be very pleasant and interesting. He didn't go out of his way to engage in small talk, and his relationship with Preston Martin was horrible.

Preston Martin would give speeches denouncing Volcker's approach to the strategy of managing the 1980s debt crisis.

MR. SMALL. There's a famous story about Volcker and Martin. While Volcker was in Japan, Martin gave a speech and Volcker denounced it.

MR. TRUMAN. Martin gave a speech saying we ought to go for a new debt strategy. Volcker was in Japan, got asked about the speech, I assume, and responded. Martha Seger had her own views on most anything. Manley and Wayne were new Governors. Henry Wallich and Emmett Rice were also on the Board. Rice left in December 1986.

Board Members in the 1980s

Board members came to the Board with different expectations about what their role would be, including relative to the staff. Many of them saw themselves as analogous to members of the Supreme Court. "I was appointed by the President." "I was ex-president of …." "I was confirmed by the Senate." "I have no particular need, desire, or responsibility to tow the party line." "I'm an independent force, and I'll go off and give a speech if I want to give a speech. I don't have to clear it with the Chairman or inform Joe Coyne if I don't want to, or anyone on the staff for that matter. I write the speech on my own, or maybe with my assistant, and I go off and give the speech."

There were a number of Governors over the years when I was here whose attitude was at that extreme. "I'm my own person. I work on my own. I form my own views. I interact with whom I want to interact with." Some of these people would interact with you; but it was all on their own initiative—if they wanted help with facts or figures or help in writing speeches. And it was at their initiative whether they decided to inform the Chairman or the Public Affairs office that they were going to give a speech. I guess if they wanted a press release, they would give the

Public Affairs office the copy of the speech as they were walking out the door. It was not completely unusual to have members of the Board—to say nothing of presidents of Reserve Banks—giving speeches which, if not orthogonal to the line the FOMC was taking, were not quite consistent with that line. That was true for all the Chairmen under whom I served.

An interesting and remarkable period was in early 1981, after Ronald Reagan took office as President. There was a new Treasury Secretary, Don Regan, and there was a strict monetarist view coming from the new Administration. To over-simplify their view: If you ran monetary policy right, it would control inflation. "We can do whatever we wanted with fiscal policy stimulating the economy, as long as we had the appropriately tight monetary policy, meaning steady low growth of the money supply."

There was a lot of criticism of the Federal Reserve coming from the new Administration, led by Beryl Sprinkel. From 1981 into early 1982 was the period in which I thought that the level of camaraderie on the Board was the highest because the Federal Reserve, and even the FOMC, was being attacked by everyone. The economy was going into recession and interest rates were still high. Home builders were sending 2x4s to the Board, the farmers were circling the building in their tractors, and Beryl Sprinkel was criticizing the Fed for not being able to appropriately control the money supply. Although there were clearly differences of view among the 7 members of the Board and 12 Reserve Bank presidents, it was remarkable, to me as an observer, the extent to which they basically were mutually supportive. It was as if the wagons had been circled; it was a nice time to be here. [Laughter] It was understandable. You're under attack from outside, and you buried your differences to some considerable degree at that point.

MS. JOHNSON. I arrived shortly before that, in 1979, just as monetarism under Volcker was being thought about and then ultimately somehow put into place. There was some friction

about the extent to which monetarism had truly been embraced, whether it was a sham or a veil or politically expedient. There were believers and non-believers. And among the staff, there were conversations about whether the new operating procedures just made that specific, in terms of what were we really doing and what was the intellectual basis for what we were doing. So, I'm wondering how that filtered out to the comment you just made about the Board members.

Chairman Miller and the Carter Administration

MR. TRUMAN. Some years ago, I looked backed at the adoption of the new operating procedures and their aftermath. The sequence was that Miller arrived in March 1978 and left on August 6, 1979. He was here for less than 18 months. It was not a lot of time to get things rolling. During that time, Volcker, as president of the New York Federal Reserve Bank, was Vice Chairman of the FOMC. And at least in one instance during that period, Volcker dissented. Although policy moved in the right direction under Miller, it didn't move fast enough or far enough. The discount rate debacle was symptomatic of all that. But it's not clear that that made much difference. The policy was steadily tightening from March 1978 to August 1979. The federal funds rate moved up but not fast enough—certainly in retrospect—and Miller was not particularly resistant to the trend in policy; he had a different style.

Earlier, in the switch from Burns to Miller, the first FOMC meeting was very funny. I'm sure it's in the transcript unless it got edited out. [Laughter] Under Burns, the process was that you had essentially two go-rounds of discussion on monetary policy. First, the presidents and Governors said what they were thinking, and then Burns would talk. Then you would have a second go-round, at which point the presidents and Governors would mostly say, "We agree with you." With Miller's first meeting, they had the first go-round. Miller was keeping a scorecard. He added it up and divided by 12 and said, "I guess we're at X." This was a slightly different

approach to the meeting's procedures than the Committee was used to. That was fine because the Chairman runs the meeting, but presumably behavior patterns are going to be different if you're going to run the meeting differently from your predecessor and your first round of comments is going to really count. The meeting was on March 8 and there was no change in the funds rate. (It was raised from 6-3/4 to 7 percent on April 18.) And I'm sure that, after that happened, Steven Axilrod got to Miller and said, "Your view does count for a little bit more." But I think basically Miller had the right instincts in trying to be less dictatorial than Burns had been.

In the summer of 1979, the only time that I remember in my period here, the Board staff forecasted a recession. Not only did the staff forecast a recession, they forecasted a recession that didn't happen. [Laughter] So, by October, they had taken the recession out of the forecast. Interest rates hadn't moved up for a variety of reasons, and the Board's staff decided there was not going to be a recession because—speaking of the dollar, the dollar actually had weakened so much that real exports were growing, and that was going to provide some stimulus. So, by the time we got to October, there was no longer a recession in the forecast. But there was inflation. President Carter went to the mountain (to Camp David) and came back and gave a speech, which is called the "malaise" speech, even though he didn't use the word, and he asked for every cabinet secretary's resignation. He accepted Mike Blumenthal's resignation as Secretary of the Treasury, and soon thereafter moved Miller from the Fed to the Treasury. Miller went to the Treasury and the dollar kept tumbling. I remember calling George Henry from Chincoteague, where I was on vacation, and saying there was only one solution: They have to appoint Paul Volcker. It was one of the few forecasts I ever got right. [Laughter] And they did appoint Volcker in August 1979, though Volcker was the second choice.

Carter had been relying on Miller a lot for economic advice. Miller got involved with all kinds of things—energy policy, and so forth. Miller, as Chairman, also convinced the Treasury Department to issue what become known as Carter bonds, which Arthur Burns was not able to do. Miller figured out a way for the Treasury to cover the potential exchange rate risk by treating it as part of the cost of borrowing—

MR. SMALL. Could you explain Carter bonds?

MR. TRUMAN. Well, it goes back to the November 1st package in 1978, described below. Miller came in: The dollar was weak throughout this period and Miller said, "We have got to get the Treasury on the line to take more responsibility for the weak dollar." Previously, Burns had taken the same line and, in January 1978, Burns convinced the Treasury that it had to have its own swap line with the Bundesbank so that the Treasury could borrow DM from the Bundesbank, use the DM to finance intervention purchases of US dollars, and repay the Bundesbank later, rather than for the Federal Reserve to borrow from the Bundesbank and undertake all the intervention on its own account.

Carter bonds were foreign-currency denominated marketable U.S. government debt. They differed from Roosa bonds, which were used in the 1960s. They were just issued to central banks and finance ministries, denominated in the currency of the purchasing country but bought with U.S. dollars. Carter bonds were foreign-currency denominated U.S. debt sold in the market to raise our foreign exchange reserves and to, in some sense, put our money where our mouth was in terms of supporting the dollar because the Treasury would be on the hook for the exchange-rate risk. Thus, you would maybe want a tighter monetary policy so that your currency would appreciate rather than depreciate, so that when you had to repay the foreign currency that you had borrowed, you might make money rather than lose money. But there still

was the potential for the dollar to fall in value, and Miller convinced the Treasury that it could charge that potential exchange-risk cost of issuing the debt to the interest account of the Treasury rather than to the limited resources of the Exchange Stabilization Fund, which has a separate balance sheet, and thus the interest account could carry the full cost of the borrowing. By doing that, Miller was technically the father of the Carter bonds.

Miller fully anticipated the problems of the fall of 1978. He was in a meeting at the White House and was briefed on the Administration's plans to propose voluntary wage-price guidelines on October 24. He came back to the Board and said, "This is not going to work. It's going to be a disaster. We're going to have to have another plan." That's what gave rise to the November 1st dollar-support package, the biggest increase in the discount rate and the federal funds rate since the 1930s. Reserve requirements were increased. We announced we would issue Carter bonds. We sold gold and SDRs to obtain foreign exchange for intervention purposes, the whole ball of wax. Miller was very much the driving force behind doing this because he felt there was going to be a disaster, and he proved right. The wage-price guidelines were a public relations failure. So, that was Miller and later we had the transition to Volcker.

MR. SMALL. Nowadays we say Paul Volcker had to be appointed, as if Carter had no choice. Why was it so obvious in 1979 that Volcker was the guy, especially in terms of credibility in markets, when he had spent most of his career inside the Treasury and the Fed? I understand why he stands out now, but why was it so obvious back then?

MR. TRUMAN. I would give you two or three answers. First, he had a lot of experience. He had experience in the private sector at Chase bank. He had experience in the Federal Reserve in two previous incarnations in New York. And he had been Undersecretary of the Treasury. Second, he was well respected. He had a strong reputation in financial markets

and in global markets. He commanded substantial respect because of what he'd been through with the dollar in the early 1970s and so forth. And third, he was within the Federal Reserve System. He knew the problems and so he had the advantage also of not having to be some new guy. The alternative, they say, was Clausen, who later went to the World Bank but turned down Carter's office. Volcker wasn't regarded as a magician, but he was regarded as a sound money man. He had credentials and was certainly widely respected in global, economic, and financial circles.

MR. SMALL. Miller's relationship with President Carter was successful in some dimensions—the Carter bonds—but part of the story is that Carter comes down from Camp David and gives the boot to Blumenthal. Did you get a sense of the relationships between Miller, Blumenthal, and Carter? Was Blumenthal on the outs with Carter?

MR. TRUMAN. I don't have a good sense of it. Blumenthal had been there from the beginning. He was probably undeservedly associated with the weak dollar policy based on some remarks he made in Paris. In context, his remarks were not particularly extreme. He said that people are worried about the U.S. trade balance, and if you are worried about the U.S. trade balance then you've got to worry about countries in surplus, and maybe exchange rates will take care of those surpluses. He basically was making an analytical statement, and actually he said it as he came out of a meeting of the OECD Ministerial in which the Communiqué had said exactly that. He was just repeating what was said in the statement: If growth doesn't pick up in the rest of the world—this was in 1977—then we're going to be in trouble. But he had this reputation of talking down the dollar and being unconcerned about the dollar. Whether or not he was talking it down, he was associated with a benign-neglect policy, as it was called. I had no basis on which

to think that his relationship with Carter was not good, it was just that, if the team isn't doing well, you fire the manager.

Chairman Arthur Burns

MR. SMALL. Having been under the thumb of Arthur Burns for so many years, was the FOMC determined to show its independence or freedom of action when the next Chairman, whoever that was, came in—and it happened to be Miller. Was Burns overly dominant?

MR. TRUMAN. By the time I started participating at FOMC meetings in March 1977, there was a truce. That was seven years into Burns' term, so I'm sure that Burns had exerted his dominance earlier, which was a change from William McChesney Martin's style, as I understand it. But by 1977, Burns was getting his way. None of the FOMC meetings that I remember participating in were ones in which Burns would say, "We're going to stay here until you guys agree with me." [Laughter] Maybe they had anticipated that outcome, so that's what happened—I'm sure it did, so maybe by that time they had all accepted that.

Also, by that time, Burns had considerable influence over many of the appointments of the Board, so he controlled at least the Board and probably also heavily influenced Reserve Bank presidential appointments, too, including, actually, Paul Volcker in New York. Burns reportedly called Volcker when he was offered the job and told Volcker, "You understand you were not my first choice." I don't know whether or not that's true, but it certainly has been said, not that I think their relationship was particularly bad. Volcker spoke at Burns' memorial service, so it couldn't have been horrible. Maybe he had to speak at the service because he was then Chairman of the Federal Reserve, but, if they had really been on the outs, I think that would not have happened. So, I don't think there was a sense of rebellion. You had Chuck Partee on the Board, and other people had been appointed to the Board who were supported by Burns. I don't

know what the story was under Carter but, under Nixon and Ford, Burns had a lot to do with picking the people who went on the Board, and so he had people who probably he could get along with on the Board, so probably there was not that much conflict. There may have been some Reserve Bank presidents who were chafing at the bit. And there was certainly a view, maybe more so on the part of some of the Reserve Bank presidents than the Board itself, that inflation was really getting out of hand. And there was certainly the monetarist view associated with St. Louis and several of the other Reserve Banks. At the time, several Reserve Banks were strong advocates of one form or another of a monetarist view.

Fighting Inflation, Chairman Paul Volcker, and 1979 Operating Procedures

My interpretation was that Volcker accepted Friedman's proposition that inflation is everywhere a fundamentally monetary phenomenon. Certainly, once inflation gets above a certain level it needs oxygen in order to continue. Steve Axilrod designed this technique of controlling the one thing that the Federal Reserve could actually control—reserves—with the view to bring down the rate of growth of money using the new operating procedures to control the supply of reserves. That had the virtue of saying, as Karen suggested, that now our objective is to control reserves, and we could say, "Well, we're not in charge of interest rates," though the procedure had an interest-rate band in it. The band was 400 basis points wide, I think, at least for most of the period, and sometimes got breached, but Volcker was either very clever or very honest or both. If you read the transcript of his presenting the paper outlining the proposal sent to the FOMC and the transcript of the meeting on October 6, 1979, he was very uncertain. He basically said, "I don't know whether this is going to work, and I will give you no assurances, but it seems to me it's worth trying. We may have to abandon it and we may have to change it, but let's start in this direction and be with me."

MR. SMALL. Was it less than fully sincere?

MR. TRUMAN. I think it was sincere. It was very characteristic of him. Volcker has strong views but he was not generally one who said, "This is the truth, and I will pursue that truth."—in particular, when it was not at all certain that the plan would work. It is also the case that presenting this proposal in the manner he did helped to encourage some reluctant voters to go along.

MS. JOHNSON. Was it a fig leaf just to hide behind?

MR. TRUMAN. Well, they're two different points. One is that the presentation to the FOMC was honest to the degree that Volcker really didn't know whether this was going to be effective and what would happen. It was an experiment—I don't think he used that word—it was worth trying. In was not, "We're now going to nail ourselves to the cross of monetarism." It was related to monetarism because it had to do with controlling the rate of growth of money through controlling the supply of reserves, or of non-borrowed reserves. I think it was genuine, but he certainly had no way of knowing that it would be as successful as it was! [Laughter] He did not know that the federal funds rate would go to 20 percent; no one knew. The proposal was genuine as he presented it to the Committee. Was he in his heart of hearts a monetarist in the Friedman style? Absolutely not.

MS. JOHNSON. So the idea that Volcker would have gone with Friedman to the point of closing down the Federal Reserve and creating some kind of rule that generated an increase in the monetary base and said, "We'll do that forever and that's all we need,"—he would not have gone that far.

MR. TRUMAN. No, I think he was more pragmatic. When he left and Greenspan took over, I remember that there was a nice dinner at the State Department. Volcker got up and gave

a little speech—I think that's what it was. He said, "Being Chairman of the Federal Reserve Board is a really simple job. You just get up in the morning, you decide whether to buy or sell, and the market immediately tells you whether you're right or wrong." [Laughter] That reflects his pragmatism. Even when they used all these fancy tables, charting out what they were going to do, policy was hardly automatic pilot. But I think Volcker was perfectly willing to let the interest rate go where it was going to go.

MS. JOHNSON. One interpretation is that Volcker felt there was no real way of picking an interest rate path in order to achieve the disinflation that he wanted to achieve. He couldn't know what it was, and so he was going to use this as an indirect tool for letting the market inform him what the interest rate had to be to reach his inflation target. A slightly more cynical view is that Volcker thought he knew where the interest rate needed to be, but he didn't think he could politically pull that off, so he dressed it up in this other ideology of monetarism. And then third is that he truly became a monetarist.

MR. TRUMAN. We'll find out when we read his transcript. It's probably the first option. He knew it was a serious problem. He was quite frank, I understand, when with the President before his appointment and told him that inflation was the number one problem. In articulating the program to the FOMC, he said, "If I'm going to do my job it's going to be by defeating inflation. I'm not sure how we're going to do it, but that's what our job is."

MR. SMALL. You're talking about when he met with President Carter?

MR. TRUMAN. When he met with Carter, before the appointment. Volcker may well have cost Carter the election, who knows.

I was on an airplane from Helsinki to Hanover with President Carter in April or May 1982. Volcker and I had been in Helsinki at an Interim Committee meeting. I said, "Carter's in

town for something else," and Volcker said, "Well, I'm leaving early, but if you run into him give him my regards."

MR. SMALL. This is what year?

MR. TRUMAN. This is 1982. Carter came down the aisle of the airplane shaking everybody's hands like a good politician. He got to me and I said to him, "I work with Paul Volcker at the Federal Reserve, and he said to give you his best," and Carter said, "Yes, one of my best appointments." So, he was, at least at that point in time, proud of his appointment even though this was in April or May of 1982, and things were very bad in terms of the real economy. Two other stories about this period: One is that near the end of Volcker's term he testified before the Congress and he was asked whether he would have done the same thing if he knew all the consequences of the policy, and he said, "I'm not sure." If he had actually known that interest rates were going to 20 percent and unemployment was going to go to more than 10 percent and someone looked in their crystal ball and said, "There's going to be these consequences," whether he would have done the same thing? I mentioned that memory to him once and he said, "I don't remember it." However, he also doesn't remember the following story, one of my favorite stories about when he went to Belgrade in early October 1979—

MR. SMALL. Were you on that trip?

MR. TRUMAN. Yes, that was where the IMF and World Bank annual meetings were held. They were in Belgrade, so he did take a few people to that. Actually, I went to a premeeting there of Working Party Three of the OECD's Economic Policy Committee and—

MR. SMALL. Just to be clear, this is a few days before the announcement of the change in monetary policy?

MR. TRUMAN. Yes. Volcker went with Treasury Secretary Miller to Germany. I thought that it was an effort to have one more chance to say, "Bail us out so that we don't have to go through this." The dollar had recovered after November 1978, and then went into a new dive after the summer when Karen joined the Board staff [joke]. By that time, everybody knew that our situation was not just about the dollar, it was about what was going on here at home with inflation. Volcker told me it's not true that they were talking to the Germans about whether they would lend us some more German marks to intervene in foreign exchange markets.

MR. SMALL. Was that Helmut Schmidt?

MR. TRUMAN. No, it was the finance minister, Hans Matthöfer, and the central bank governor. I don't know whether or not this actually happened. Volcker wasn't clear about it. I do know that he told Otmar Emminger—he was the Bundesbank president then—about what he was about to do. Steve Axilrod was back here in Washington. He wanted to go on the trip, but he had to stay back here and write the memo to the FOMC. [Laughter] I was not involved in the proposal, but I knew a little about what the scheme was. Maybe Steve had mentioned it to me in the context of why he wasn't going to go on the trip. And I had long conversations in Belgrade with my counterpart at the Bundesbank by the name of Wolfgang Rieke, who was a good friend of mine, because he had been consulted by Emminger about this. We walked around Belgrade and tried to figure out exactly how it was going to work, what its effects would be, and whether it would be a big deal. So, I knew quite a lot about that.

At that meeting (in Belgrade), Burns gave the Per Jacobsson lecture; the title was "The Anguish of Central Banking," which focused on dealing with inflation.[17] The theme basically was that inflation is really not so much always and everywhere a monetary phenomenon. At the

[17] Arthur F. Burns (1979), "The Anguish of Central Banking," Per Jackbsson Lecture, Belgrade, September 30.

end of his remarks, he had a six- or seven-point plan for lowering the United States inflation rate. You repeal the Davis Bacon Act, which had to do with restrictions requiring union wages on public sector projects. You had a tax cut, a couple other things and in that context, you commit yourself to a program of monetary restraint, but only if you have the full support of your administration. It was a six- or seven-point plan of which monetary restraint was only the seventh point and even qualified in that regard.

Volcker came into the room in which Burns was giving this speech. He sat on the floor up against the wall, and he picked up a copy of the speech, as people like that do. He read through it, got to the concluding paragraphs, saw this list of what one was supposed to do, according to Burns, and tossed it down on the floor, and mumbled as only Volcker could, "I'm doing it all wrong." Then he got up and left. I didn't offer him a seat, so he was on the floor about six or seven feet away. I heard him, and I knew what he was talking about. No one else in the room knew. Besides he was mumbling. So, in some sense he was doing not what Burns said one has to do to deal with all these other problems in the economy, which Burns thought were causing inflation, the cost-push inflation view, and he (Volcker) was going to go on and be much more monetarist, or at least use a blunderbuss approach to deal with the inflation problem. And then the whole experiment was sabotaged by the credit controls. [Laughter]

MR. SMALL. When Volcker mumbled, "I'm doing it all wrong," did you take that to mean that he believed he was doing it wrong?

MR. TRUMAN. No, he was saying, "Arthur Burns is telling me that what I'm about to do is wrong."

MR. SMALL. Did that shake his confidence?

MR. TRUMAN. No, no, no. Volcker got up the next day or a day or two later and flew home a day early. Then they had the FOMC meeting. I came back with Henry Wallich and a Board car picked us up at the airport on Friday and the driver gave us our FOMC memos. We all came into the office for the meeting on Saturday, disguised by the visit of the Pope to Washington. It was a coincidence, but convenient! [Laughter] Not everyone was available, but they probably joined by conference call.

But the Carter credit controls (in March 1980) really destroyed the whole experiment, in some sense, and I think there's an open question whether the FOMC could have eased monetary policy a little sooner. My sense was that they actually decided to let up sooner than they did. They just didn't follow through, so they (the FOMC) really decided to let up in July 1982, and in some sense, it didn't get through to the market until November 1982.

The FOMC didn't make announcements in those days and we were operating under this money-targeting procedure, so it was a little hard to communicate that we were going to be a little less stingy in our reserve supplying. We didn't say anything, but I guess they put out the policy record after the August meeting, and that did convey some notion that they were going to be a little less tight, but it was nicely camouflaged by saying that they would tolerate M1 growth about their target. It wasn't expressed in words of one syllable. (The expected range for the federal funds rate at the July meeting was the same as at the May meeting—10-15 percent—but there were words saying that the FOMC would tolerate an overshoot in money growth. At the August meeting the consultation range was 7-11 percent; October 7-10-1/2 percent; and November 6-10 percent.)

MR. MARQUEZ. I sometimes read about this episode of monetary policy suggesting that it wasn't so much a decision to switch approaches, but a decision to stick with it: That in

seeing the consequences for everybody, Volcker said, "We're going to stick to it," and that is, I think, why he gets the credit. Did you have a sense that there was tension within himself about this policy switch?

MR. TRUMAN. He probably did have some doubts. The problem was that the inflation rate didn't go below five percent until 1983, so my sense was that there wasn't a lot of pressure within the FOMC to ease up. They learned a lesson: If you're in for a dime you might as well be in for a dollar. If you are going to slay the dragon, go off and slay the dragon. Volcker did become increasingly concerned about not just the United States but about the global economic consequences of all this. During that period, normally I did not give FOMC briefings, except when there was some special topic, and at the chart shows. But, at the November 1982 FOMC meeting—this was now into the global debt crisis period, but it was related—he called me in the afternoon before the meeting and said, "I want you to give an FOMC briefing on the international outlook, and I don't care how negative you are for the global economy because I want to help convince these people—members of the committee—that the world economy is headed off a cliff." That was probably one of my better briefings. I went to a ballet that night. When I came home, I wrote the briefing off the top of my head and didn't put it through the normal sausage-making process [laughter] that generally improved FOMC briefings, at least the technical quality of the FOMC briefing, but that briefing probably was clearer than most of the other ones I gave. That was one of the few examples in which Volcker was using international arguments—in the loose sense of that word—to help convince the Committee what policy they should adopt. I wasn't that explicit. All I gave was an outlook briefing; part of it on developing countries, part on developed countries where inflation also was high but coming down, and then particularly on some of the problems and risks.

MR. SMALL. You were division director before the new 1979 operating procedures came out. Under the new operating procedures, the Federal Reserve's money supply is set, so there's nothing left for the International Finance division director to do except to just let the exchange rate float? How did your work—your to-do list—change?

MR. TRUMAN. We went through the same process as before. FOMC meetings were the same. We had the forecasting process. You had chart shows and pre-FOMC briefings. Exchange rates were going up and down. The dollar didn't recover right away. We were dealing with the beginnings of the LDC debt crisis. In the spring of 1980, we were putting on the credit controls, et cetera. They were a surprise announcement, so that there was a lot going on at the Board.

Volcker had to go to New York to give a speech at NYU on LDC debt problems shortly before the announcement. Henry Terrell had just given a briefing on LDC debt problems and banking, and we adapted Volcker's speech from that briefing. It was one of the few speeches that Volcker ever gave while at the Board when he basically read it straight through. I don't think he changed a word because his attention was elsewhere. (From reading the speech subsequent to this conversation, it is clear that Volcker at least wrote the third-to-last paragraph.)[18]

Though we have been concerned with the financial integrity of U.S. banks in urging them to be prudent in their foreign lending, we also believe such a posture is consistent with the long-run best interests of the borrowers. I believe we could live with the recycling situation as it is today for a period of time, though it would be foolish not to expect some hard cases to emerge. But I also believe that our capacity to deal with this problem as time passes could increasingly be

[18] Paul A. Volcker (1980), "The Recycling Problem Revisited," speech at the Graduate School of Business Administration, New York University, New York, March 1.

stretched close to the limit. In that light, borrowing countries should lose no time in developing policies to maintain their credit worthiness. And it seems to me lenders and borrowers alike—that is the great bulk of the world—have the strongest kind of self-interest in actions to avoid appreciable further increases in oil prices at a time when adjustment and financing capabilities already will be increasingly stretched.)

The division also gave a special briefing in January 1980 on international trends and relative prices and external balances, the external debt of developing countries, and the exposure of U.S. banks. It was mostly done by Jeff Shafer. It was remarkably prescient about the crisis that broke 18 months later. It basically said that the global economy was going to slow down, that these countries have a lot of debt, the terms of trade were turning against them, the U.S. banks were heavily exposed, and things could be rather stormy. It took two years for the storm to start breaking, but we got it righter [laughter] than many other things we did during that period.

Volcker came to the Board from the New York Fed culture and from the Treasury culture. Those two cultures are not the same as the Board culture, which is dominated by egghead economists. So, Volcker didn't have a particularly high regard for the direct applicability of the research output of the Board's staff. He didn't say it was bad, he just didn't think that it was necessarily that important in the global scheme of things. I remember explaining to him the three-thirds approach to allocating the time of economists in IF. He said, "Good luck." [Laughter] Probably meaning, "I'm going to put you to work so much on the middle third, on ad hoc projects, that you're not going to have any time for the research third."

But at the Board, he acquired a great deal more respect for research. One of the salient events was when we came under heavy pressure about how we were doing under the new

operating procedures. We produced a two-volume study, partly to deal with the criticism from the monetarists who were saying we weren't doing it right, and partly dealing with other issues that had come up.[19] It was an impressive document and Volcker was impressed. We published the document. Maybe it was not the most important aspect, but it did a nice job of saying, "This is a serious effort, and the Board staff, the Board, and the FOMC have seriously considered it. This is not a big caprice that we're engaged in." That study of the new operating procedures, I think, helped to convince Volcker that there was value in the research grounding of traditional economic analysis, as well as understanding markets. He acquired from that—as well as other things—greater respect for the staff of the Board than he had when he came. Not that I think he was disdainful and certainly his relations with the senior staff were very good. He had a certain wryness about him, a sense of humor. He used to drive me crazy when we'd go to some international meeting and he'd insist on doing the International Herald Tribune crossword puzzle before we talked about substance. But it was the way he got his brain cells working.

MS. JOHNSON. During the period of inflation fighting, both the Federal Reserve and the Administrations involved had convinced themselves via different arguments that there existed a cheap way to cure inflation. Whether it was with "Whip Inflation Now" buttons, buying your groceries in the sale aisles instead of the full price aisles, or whatever, we had one gimmick after another. For the wage and price controls that Richard Nixon put on, some element of the people supporting them thought the controls were going to be a little bit like Dumbo's feather in the children's story that created an illusion that became reality—that the controls wouldn't actually distort anything and they wouldn't constrain anything because if you could persuade people that inflation was going to go away, that would bring inflation down.

[19] New Monetary Control Procedures: Federal Reserve staff study. Board of Governors of the Federal Reserve System, Washington D.C., 1981.

Expectations were the problem; if you could magically make them go away, inflation would stop. In other words, there's a cheap way, there's an easy way. We don't have to go through a recession. We don't have to go through any kind of financial pain. Would you say that as Volcker started down this path and stuck to it; he came to believe that the only way we're going to defeat inflation was to pay a fairly substantial price, and hence he was prepared to pay it; whereas others never believed that, and had always looked for the gimmick that would make it cheap and easy to do?

MR. TRUMAN. Well, Volcker didn't think there was an easy way out. There were people on the FOMC and among Board staff who thought that all we needed to do was to announce that our inflation target was 4 percent and automatically inflation would adjust to 4 percent. Everybody's behavior will accommodate to that expectation if they just believe us enough. That's the extreme rational expectations view that was held within the profession and was well represented here at the Board, as well as in some of the Reserve Banks. There was certainly that view out there in some quarters that it was going to be easy. It would be interesting to look at the forecasts of the FOMC during that period. My guess is that some of them showed more progress more rapidly than others. It would be the members of the FOMC, after all, since we're now after the Monetary Control Act, we're post the Balanced Growth Act, and the FOMC members did their forecast in every quarter. My guess is that once we started, there were some people who had inflation falling more rapidly than others, representing the divergence of views within the economics profession at the time. Nothing that Volcker said, at least in those initial transcripts, suggested fighting inflation was going to be quick and easy.

In contrast, my colleague at the Peterson Institute of International Economics, Mike Mussa, says that we let up. We did let the federal funds rate fall to 6 percent or whatever it fell

to in 1980 after the credit controls hit the economy. Well, that was because we were following the rules. We were targeting non-borrowed reserves, and their growth slowed dramatically, so we pumped in more non-borrowed reserves, and the funds rate dropped from 20 percent to whatever rate it hit, probably 6 percent. Then the controls went off, the economy went back to normal again, and inflation was still at 12 percent or whatever it was, and interest rates went back up to 15 percent. I don't remember that there was a lot of debate about abandoning this approach, which had only been going on for six months or nine months, and keeping the funds rate at 15 percent or whatever it was when the credit controls were put on in March 1980. No doubt that was advanced as an option. I can't believe that some member of the FOMC didn't suggest it. But because we weren't deliberately targeting the funds rate, the funds rate moved faster than the FOMC would have directly adjusted it! If they knew what was going to happen maybe they would've kept the funds rate up, but they had this somewhat indirect way of affecting both money and the funds rate, and they followed the procedures they had agreed to follow. When things went back to normal, the FOMC went back to normal. Then we had one short recession in 1980 and then the subsequent longer recession starting in 1981.

MR. SMALL. The one caveat to that was your earlier comment that when Volcker was asked "Would you have done it if you had known—"

MR. TRUMAN. He was asked that in 1987.

MR. SMALL. It's not clear that he did it with a full view of these costs. He evidently underestimated the costs. He didn't deny that there would be a cost because of sluggish expectations, but he might not have appreciated the magnitude.

MR. TRUMAN. Just to be clear about what I am saying: I interpret his answer, assuming my memory is accurate about it, not as saying that he wouldn't have done it, but rather

that he wasn't sure that he would've had the nerve to have done it. So, if you had told him precisely the sequence of events, and he had asked himself whether the Federal Reserve or the body politic or whatever could take this heavy dose of medicine, he might have decided that it was just too risky to the system—meaning with a small "s." Not that the problem wasn't serious, but that the risks to the fabric of society were serious.

MR. SMALL. It's also interesting to think about the risk to the Federal Reserve System. With the Triad and the Quadriad, you could argue there was less independence before Volcker than after. And what if he had failed? How much independence would the Federal Reserve have had if Volcker had gone down as a failure?

MS. JOHNSON. Although you do have to remember—in the context of this all being international—hat the British were at the same time doing the Margaret Thatcher thing. She became Prime Minister in May 1979, and adopted a policy of targeting and restrained growth in Sterling M3; and there, too, the Bank of England really bet its wad, or the government bet its wad since the Bank did not really have its independence then. I don't know that you'd say whether it won or lost that bet, given what happened afterwards, but it was in the air.

MR. TRUMAN. Yes, certainly. Even if you don't say our approach was pure monetarism, which I think it probably wasn't. Again, I don't think Volcker was a monetarist, except in the sense in which I think almost everybody almost has to be when inflation is well into the double digits. But it wasn't as if it was that orthogonal to some people's ideas about how central banks should operate under flexible exchange rates. And indeed, as you say, the Bank of England, under Margaret Thatcher, did pretty much the same thing. For the Bank of Japan, the picture was less clear because the Japanese inflation rate did not come down right away. Japanese inflation rates went over 20 percent in 1974, 1975, and they came down afterwards but

only to around 5 percent and then they went back up again. It took a while for the Bank of Japan to get religion, but it was following its own version of monetarism. The Canadians were even worse; they didn't get inflation down to about 10 percent until the early 1980s.

Catherine Mallardi and the Role of Executive Secretaries

MR. SMALL. Today is December 2, 2009. This is a continuation of the Board's Oral History Project interview of Ted Truman. Again, Karen Johnson, Larry Promisel, and Jaime Marquez are joining in on the interview. We're conducting this interview at the Board.

MR. TRUMAN. I got a call a few minutes ago from my wife Tracy with the news that Catherine Mallardi had died 10 days ago. There's a nice obituary in the *Washington Post* today, mostly picking up from when she retired from the Board in 1992.

Catherine was amazing at keeping balls in the air. She had a better political sense than I think 999 people out of 1,000 in this town have. She was extraordinarily nice, but she could say "tough" things, and she could say "no." The following story illustrates how nice she was: In December 1977, I was working with Chairman Burns on a speech that he was going to give at an American Economic Association meeting. I was going away for Christmas with my family to visit my parents, and we had booked a flight out of National Airport. Being the day before Christmas, I was concerned about holiday traffic. Burns wanted me at the Board to work on this speech. The concern was whether we were going to make our flight, and I expressed that concern to Catherine. She said, "We'll fix it. Have your wife and children take a taxi to the Board, and we will send you to the airport in the Chairman's car." It was a thrill for our son, who was then eight, because the Chairman's car had one of the first car phones in it. My son picked up the phone and called his friend saying that he was talking on the car phone. It's a

good illustration of how Catherine somehow managed to thread needles; she satisfied Chairman Burns and dealt with my anxieties at the same time. She certainly was an amazing person.

I worked with four Chairmen. It's got to have been even more difficult for an executive assistant to work with those four different personalities, and be as effective as she was. She had worked with Burns at the White House when he has chairman of the Council of Economic Advisors; maybe she was at the CEA with him as well. It doesn't say in the obituary. She then left to have her daughter, so she was out of the labor force for a while. When Burns came to the Board in 1970, he induced her to come back to work with him. Her daughter was then about 10 years old, so it was a point at which Catherine could go back into the labor force. She came back in 1970 to work with Burns, picking up where she worked with him before. Then she worked for Chairmen Miller, Volcker, and Greenspan.

MR. SMALL. Earlier, you mentioned a secretary who started with you when you were a section chief.

MR. TRUMAN. Margarita Serafini.

MR. SMALL. What's the role of the executive secretaries and how important are they at the Board, whether it's working for a division director or a Chairman?

MR. TRUMAN. That job family changed dramatically during the period that I was here, from 1972 to 1998. The position went from someone being a secretary who primarily typed and so forth, to a position that was much more office manager, requiring a whole different set of skills. It is said about Catherine Mallardi that one of the reasons she got her job was that she was the fastest typist in her class in high school. Being the fastest typist in your class would give you a leg up in 1950, when she came to work in Washington, but by 1998 typing skills were not the sole criterion for hiring and promoting secretaries. They needed to be able to type, of course,

and it was essential that they could read the handwriting of those with whom they worked. However, they didn't do that much typing even when working for a division director because we lived—as of the 1990s—in the world of word processors and computers, and economists typed their own work. It's important to get things typed fast and accurately, but I would say it's a fraction of the stuff that most executive secretaries now do. They're very much office managers.

And in Margarita's case, she managed both the life of the division director and the division as a whole. She made the same kinds of judgments that Catherine Mallardi had to make in dealing with the chairmen but on a different scale: Larry Promisel needs to see me, Karen needs to see me, I have an appointment, and there's an FOMC meeting coming up. She needed to balance those kinds of things, be nice to Karen and Larry at the same time, and help me set my priorities. I should add that both Catherine and Margarita were exceptions in another respect: They were always at work. Catherine of course managed the Chairman's schedule and so forth even as that responsibility became more complicated, but both she and Margarita were always busy typing letters or testimony or doing some small task that needed to be done. They were not shirkers and shirkers bothered them.

Margarita had one special advantage in that she was from Colombia. Speaking Spanish brought value in dealing with matters like the Latin American debt crises. The secretaries of the central bank governors in Latin America, at least in the 1980s, didn't necessarily speak English. Margarita would often work with Catherine Mallardi when the Chairman was calling some central bank in Latin America or when I needed to reach someone in that area. Her language skills turned out to be a definite plus for us. And she had, as did Catherine Mallardi, the capacity to get things done miraculously. All of a sudden you had to go to X country and you needed a visa. A visa normally took three days. Somehow, she would manage to get it done in a day,

through persistence and calling the right people. In Margarita's case, she had the additional problem of dealing with someone with a relatively short fuse, a person who could get, shall we say, very intense. I literally caused her a lot of heartburn but not intentionally.

Margarita worked with me first in the International Monetary System section. When it closed down, she moved into the Balance of Payments section, where I was section chief. She was not the section chief's secretary, but the section's second secretary at that time. Then, when I moved out of that section and became an associate director, she became my secretary again. When I became division director, the secretary who had been there under Ralph Bryant had already left; her first name was Davita, and I think her last name at the time was Hays. So, there was a vacancy, and Margarita moved with me when I moved into division director's slot.

MS. JOHNSON. Margarita was a wonderfully capable person and she became part of the institutional memory of the division. When the time came for Ted to leave and I took over, I leaned on her. She would know what we did for different occasions. She had been through it all before, and I hadn't. She was a resource for me about some aspects of being in charge of the division, the timetable of the Board's routine, and the timetable of other international organizations' routines in which we had a role to play. She'd been there and done that and she was very helpful.

MR. SMALL. I presume that becoming a senior secretary or an executive secretary is a fairly competitive position based on merit over tenure.

MS. JOHNSON. There's probably some of each. When Margarita chose to retire, we hired from the outside. So, it's certainly not true that the person that had the most seniority got to be the next secretary to the division director. It does not work that way.

MR. TRUMAN. Margarita, in effect, hitched her wagon to me and followed me through my rapid ascent. Some other secretaries in the division felt that she didn't deserve her position because they had been around longer. But Margarita was unbelievably effective. She was super organized, although if you took a look at her desk you wouldn't necessarily think that. She had her own ways of organizing and getting things done, always precisely on time. She worked late. There was some tension between her and some of the other secretaries of which I was aware. She was not very tolerant of people who didn't carry their weight. When someone was not doing something, her response was to do it herself; she wouldn't go beat them over the head. She'd figure that was someone else's problem. She would go do it herself. I do not want to be misunderstood, she worked very effectively with Sandy Clayton who was Larry's Secretary and with Bobbie Bakke, later Lear, who worked with George Henry. Margarita was remarkably effective, and I worked with her for 25 years. It was a bit like having a second spouse, and she and Tracy got along famously. This was even before her daughter was hit in the head by an errant automobile tire and was rushed to Suburban Hospital. I called Tracy, who worked there, and Tracy was at the hospital before Margarita arrived. The doctor told Margarita that he would have to operate immediately. Margarita collapsed in Tracy's arms, but Tracy set her down and went to her department to make sure that this was the best doctor. He was and Monica staged a truly miraculous recovery. IF was often a big family!

MS. JOHNSON. We haven't mentioned her strongest skill: She could read Ted's handwriting. So, when you'd get one of his notes, which was partially legible and partially not, you'd go to Margarita and she'd read it to you. Then you knew what you were supposed to do.

MR. TRUMAN. Although my handwriting was far from perfect, it was much better in 1972 than it was in 1998. Margarita followed the progression of the deterioration and had that

advantage. That's relevant to working with the Chairman too. It was difficult to read the handwriting of both Volcker and Greenspan. Catherine was good at deciphering it and I became quite skilled at it myself. It helps to know where they're going, what they're trying to say, to figure out what the words are.

MR. MARQUEZ. We used to call Ted's notes Teddy grams. This is before the email system.

MS. JOHNSON. It would appear on your desk or on your chair, depending on how cluttered your desk was.

MR. SMALL. And if you'd feign you couldn't read it?

MS. JOHNSON. At your peril. You went up and down the hall looking for someone to help you read it.

Exchange Rate Policy

MR. TRUMAN. Let's talk about exchange rates. In my view, exchange rates are a central issue for monetary policy because they're one of the more important prices in the economy, even in an economy as relatively closed as the United States. Exchange rates were as controversial an issue as anything else that the Board and the FOMC dealt with.

I will start with the organizational question, "What does the Federal Reserve have to do with U.S. exchange rate policy?" My view, which developed over time, was that the exchange rate—or the foreign exchange value of the dollar—was an important price, and that once it started moving in a big way in 1971, you had to worry about where it would be for analytical purposes and also because those movements need to be factored into forecasts (that's the economic forecasting side, which I'm going to get to later on).

But, perhaps, a more complicated issue had to do with the role of the Federal Reserve in exchange rate policy. Fundamentally, the way the various Chairmen that I worked with saw it, the posture on U.S. exchange rate policy was set by the Secretary of the Treasury and the Administration, with the advice of the Federal Reserve, often in the form of strongly held opinions of Burns, Volcker, and even Greenspan. But the framework was set by the Secretary of the Treasury—or by the President, if you want to think about it that way.

On the operational side, both the Federal Reserve and the Treasury had the legal authority to operate in the foreign exchange market to buy and sell foreign exchange. That authority for the Federal Reserve existed in the Federal Reserve Act from the beginning, but it had gone into disuse during the first decade or so of the Bretton Woods system. In the early 1960s, when pressures began to mount against the dollar, the Treasury wanted to revive the Federal Reserve's capacity to operate—buying and selling foreign exchange and executing cable transfers as they were called. Federal Reserve power to engage in "cable transfers" was the legal basis in the Federal Reserve Act under which the Federal Reserve had operated in the foreign exchange market in the past. There was a big examination of all this history in the early 1960s with memos and opinions by the Attorney General. In the end, it was concluded that the Federal Reserve did indeed have this authority, which it began to use again to a limited degree in the early 1960s. This resuscitating of the Federal Reserve's power to operate in foreign exchange was in the context of setting up the IMF's General Arrangements to Borrow (GAB) which commited the G-10 countries to lend to the IMF in addition to their quotas in the IMF in case the United States, in particular, needed to borrow foreign currency from the IMF. All of this was reported to the Congress—the approval of the GAB and the reengagement of the Federal Reserve

in foreign exchange operations—even though the ESF (Exchange Stabilization Fund) of the Treasury also had the legal authority to buy and sell foreign exchange.

The ESF came into existence in the Gold Reserve Act of 1934, which effectively eliminated the role of the Federal Reserve in foreign-exchange market intervention because the Federal Reserve no longer owned the gold. To the extent that there were any foreign exchange operations from the mid-1930s until the early 1960s, they were done by the ESF. Its dollar resources came from revaluation of U.S. gold holdings, but it did not hold any foreign exchange.

MR. SMALL. How does intervention differ from every country giving a certain amount of its domestic currency to the IMF and then the IMF placing those currencies into the market to change the relative supplies and demands?

MR. TRUMAN. A country's IMF quota, in Fund terminology, is the amount of that country's currency that the country is committed to provide to the IMF. Only a fraction of those countries' currencies is useful in foreign exchange operations or can be used in IMF lending. Consequently, the practice is that the country provides an equivalent amount of foreign exchange instead of its own currency when another country borrows from the Fund and the Fund calls on the first country's quota. So, even Japan wouldn't necessarily provide yen, it would provide dollars to the Fund to lend to Brazil when Brazil needed foreign exchange. South Korea would always provide dollars (or possibly yen) rather than won if it was called upon to lend to the IMF so that the Fund could lend dollars to, say, Brazil.

MS. JOHNSON. Even under the fixed exchange rate system, the IMF was not the institution that did the intervention to maintain the stated parities. It was the responsibility of the individual countries to do that. The money potentially available to lend to the IMF becomes a pool for all countries to draw on. In particular, those countries that are in good shape might

provide, through the IMF, loans to countries that have problems, so that those countries can address those problems, and then, in principle, repay the Fund.

MR. TRUMAN. The United States is a special case. Say that, under the fixed exchange rate system, France had a balance of payments problem, and was running out of foreign exchange reserves. France would go to the Fund and borrow dollars from the Fund or it might borrow Germany's deutsche mark (DM). France would get a loan from the Fund that would help it meet its foreign debt obligations, or intervene in the foreign exchange market, or just build up its reserves to increase confidence, perhaps in the context of a change in macroeconomic policies or a devaluation of its currency. That was the normal operation of the system. As the financial system evolved, countries would borrow in foreign currencies in the international capital markets. Consequently, borrowing from the Fund was not just for intervention purposes or to build up reserves to build confidence but also at times to help repay debt and meet their official foreign exchange obligations.

The problem was that, if the United States had gotten into trouble in the early 1960s, the Fund would not have had enough other usable currencies because the international monetary system operated primarily on the basis of dollars, sterling, and gold. If we needed to borrow foreign exchange from the Fund, the question was who would lend enough of it to us? The Fund didn't have access to enough potential resources from its other members (Germany, France, Italy) in the form of their currencies to lend to the United States, if the United States needed to borrow. So, the G-10 countries—Japan, Canada, the United States, and seven or eight European countries—constructed a superstructure, the General Arrangements to Borrow (GAB), so that

they could lend extra money to the Fund on top of their quotas.[20] Again, the lending would be in their domestic currency, but usually, except in the case of lending to the United States, the domestic currency would be converted back to dollars if it actually ended up being used. (The U.S. did borrow foreign exchange from the IMF on a few occasions during the 1960s, but those borrowings were generally used to buy back dollars from the European countries, not to intervene or to hold in our reserves. We borrowed in the 1970s to finance some intervention.)

The GAB was designed to provide extra resources to the Fund, primarily in case the United States had to borrow. In fact, the United States never used the GAB itself, but other G-10 countries did—Italy and the United Kingdom for example. I think it also was activated once for France.

The GAB existed from 1962, and its size was increased from time to time. And, in the context of the global debt crises in the 1980s, the rules under which the GAB operated were expanded so that IMF lending to countries other than G-10 countries could be financed through the GAB. Originally, the GAB was intended for use when the Fund needed resources to lend to other G-10 countries; it was supplemental but reserved for the Group of Ten countries. In 1983, that was changed so that the GAB could be used to finance loans to Mexico, Brazil, Thailand, Korea, or whoever might have a large borrowing from the Fund. That change was the result of an initiative that we at the Federal Reserve initiated. It began with an idea that I had been kicking around and a paper written by Henry Terrell. We sent the paper to the Treasury, with the blessing of Chairman Volcker, at least for interagency discussion. It was later adopted by the Treasury as U.S. policy. We expanded the GAB to allow the Fund to lend funds from the GAB

[20] The eighth European country, Switzerland, joined later. Switzerland was not a member of the IMF until 1992, but it had a parallel lending arrangement with the Fund, and it was a de facto member of the G-10 (even though it became the G-11 when Switzerland joined and was still called the G-10).

to all member countries. Such lending was subject to secondary decisionmaking by the G-10, which was controversial for some members of the IMF because such borrowings were not automatic and an inside “club” in effect controlled the use of these funds.

MR. SMALL. All of this makes sense in 1960 when you had fixed exchange rates and you were trying to defend them. But, if we were truly in a system of floating exchange rates in the 1980s—

MR. TRUMAN. But we weren’t in the system of exclusively floating exchange rates. Even when floating was legalized, some countries’ currencies did not float; indeed, most currencies did not float at first, and even the currencies that did float followed a “dirty” or managed float, including the United States. Just because a country nominally had a floating exchange rate, it didn’t necessarily stay out of the foreign exchange market. So, there was intervention even by those countries that were nominally floating.

In the late 1990s, in the aftermath of the Mexican crisis, the view was that this special pot of resources from the G-10 countries needed to be expanded beyond that group of contributors. There were other countries around the world that had large reserve holdings, in particular in Asia, which could contribute to the same or a similar pot. After a complicated set of negotiations led by the Treasury, but in which the Federal Reserve participated, we created what was called the New Arrangements to Borrow (NAB), which was a broader set of agreements working on the same general principles as the GAB. The NAB/GAB (because the GAB remains a compartment within the NAB) resources were a secondary source of funding to the Fund for use in its lending operations. Activation required a second level of decisionmaking following a proposal by the Managing Director of the IMF that could, in principle, be voted down by the members of the NAB even if it was supported by the majority of the IMF executive board. These changes were

recognized, and to an extent codified, a changing world. The G-10 was not what it was before; it wasn't the sole source of financial resources or influence.

Coming back to U.S. foreign exchange operations, the point is that the United States, for a period, was not in the foreign exchange business. The Treasury had dollars and gold, but it didn't have foreign exchange. The Fed didn't have any foreign exchange either, but it could borrow under swap arrangements. So, in the early 1960s, at the initiative principally of the Federal Reserve Bank of New York, with the blessing of the FOMC and, importantly, the Chairman, the Federal Reserve created the reciprocal currency swap network. Through this network, the Federal Reserve, under authorization from the FOMC, could borrow foreign exchange, short-term, from Germany, France, Japan, Switzerland or whatever country's currency it might need. The Fed could use that foreign exchange to buy dollars in the foreign exchange market or, sometimes, to buy back dollars from the foreign central banks, in effect providing the central banks cover for their dollar purchases.

All these modifications in policies and procedures were presented to the Congress, which insisted on knowing what the U.S. Treasury and Federal Reserve were doing if we were going to get into the foreign exchange business. The Congress demanded that the manager of the accounts of the FOMC and of the Treasury's ESF at the Federal Reserve Bank of New York, who conducted operations for both institutions, every six months submit and publish a report about U.S. operations in the foreign exchange market. It was called the Manager's report on Treasury and Federal Reserve Foreign Exchange Operations. Later, there was a shorter interim report that was published quarterly. Now there are just the quarterly reports. These reports described, in increasing detail over time, what had been done and why. We revealed all our activity. The reports are useful because they provide a nearly contemportaneous report on what

we were doing and on financial markets. In my day, they often involved considerable debate between the Manager at the Federal Reserve Bank of New York, the Board, and the Treasury.

MS. JOHNSON. The report included information on any outstanding swap operations.

MR. TRUMAN. —outstanding swap drawings by the Federal Reserve and other central banks. At least by the time I was involved, we always revealed any time a foreign central bank would borrow from us. These were all reciprocal arrangements with central banks in countries like Mexico, France, the United Kingdom, and others. In 1981, Sweden borrowed dollars from us. It was one of the last developed-country operations while I was division director. With respect to U.S. intervention, we revealed our transactions and we would put the numbers in. We didn't put the numbers in about what other countries were doing at the same time, though sometimes there was an indication of the aggregate scale of operations by other countries as a group.

MS. JOHNSON. Foreign central banks had other sources of foreign exchange, so seeing what they borrowed from us didn't mean that you would know exactly what they had done in the market. They held stocks of foreign currency of their own and they could borrow from each other. They could do a variety of things.

MR. SMALL. So, we published every six months. Suppose a country comes to us a week before our fixed deadline?

MS. JOHNSON. There was a lag in the reports.

MR. TRUMAN. The reports did not initially cover a calendar quarter though the schedule was changed later to be a calendar quarter. Initially, for example, at least when I was involved, the report was released in the middle of March and it would have operations from November, December, and January.

MS. JOHNSON. So, in the time span of exchange rate crises, it was an eon later.

MR. TRUMAN. Now, the report is published on "regular" quarters—it comes out about six weeks later.

MR. SMALL. There was enough delay that you weren't revealing that a particular country was in crisis?

MS. JOHNSON. Right, you weren't letting the markets know that tomorrow the borrowing country was going to need to sell the U.S. dollars they had acquired, or that the country was in need of borrowing from the Federal Reserve.

MR. TRUMAN. The policy in this area evolved over time. There was quite a lot of transparency about these operations from the very beginning, and the transparency increased over time. So much so that, later on, we included details on what we were investing in. Our modest amount of foreign exchange balances was invested, and we reported exactly the types of instruments that we were investing in. The report also reconciled the mark-to-market value of our holdings and the flows. You mark existing holdings to market and you had interest earnings, and that led you to the holdings at the end of the period.[21]

MR. MARQUEZ. Is this what Sam Cross and others from the New York Fed are talking about, when they went to the FOMC and said, "I'm requesting authority for you to approve the transactions that we have made?"

MR. TRUMAN. Not quite. There were two steps covering foreign exchange operations that shared a parallel structure with domestic open market operations. You had an authorization for what the Desk (the Open Market Desk of the Federal Reserve Bank of New York) could do

[21] Subsequent to these oral history interviews and in the context of the global financial crisis and the subsequent euro area crisis, the Federal Reserve's swap operations became much, much larger in scale and the reporting became even more transparent so that by 2012 drawings and repayments are reported once a week with a one-day lag.

in domestic markets. You also had an authorization for what the Desk could do in the foreign markets that included what currencies the Desk could buy and sell. The Desk couldn't all of a sudden decide on its own to buy Thai baht, for example. The authorization on the foreign side also included the authorization for having swap arrangements with the various central banks. The Desk also had a directive from the FOMC. On the domestic side, the directive changed every FOMC meeting. On the international side, the directive got changed every decade and a half approximately.

MS. JOHNSON. But they were renewed each year.

MR. TRUMAN. They were renewed each year. The directive laid out a framework for what the purposes of our foreign exchange operations were. The current directive, which I guess has been tinkered with a little bit, came into being in the late 1970s when we had moved finally to floating exchange rates. The question was when, broadly speaking, could the Desk operate under the direction of the FOMC? And the Directive laid this out. In addition, there was a set of complicated procedural instructions that, among other things, limited how much in the way of cumulative intermeeting operations could be done by the Desk without coming back to the FOMC as a whole or to a subcommittee that consisted of the Chairman, the President of the Federal Reserve Bank of New York, the Vice Chairman of the Board, and one other member for further approval.

In foreign exchange operations, the decision to go ahead might involve, in terms of lead time, at most a matter of hours, and so it was a question of the Chairman deciding whether it was appropriate. Sometimes the Chairman would say "you do it," giving the manager of the Desk the capacity to operate for a period of time. Other times, depending on the particular Chairman and

the circumstances, the manager had to get approval from the Chairman or the IF division director for every operation.

MS. JOHNSON. But the Desk did not have standing approval to operate in the market. They could not get up in the morning and decide, "I think we'll do it today."

MR. TRUMAN. Well, that's not entirely true.

MS. JOHNSON. Not a blanket standing every day of the year, always. The Desk did not have that kind of open-ended authority.

MR. TRUMAN. They did in large part until this codification of the arrangements in 1976 that was partly done at the insistence by Burns. Burns was unhappy that the manager would often get up in the morning and decide whether the Desk was going to buy or sell foreign exchange without consultation with Washington. So, one of his objectives was to rein in the Federal Reserve Bank of New York. It was a political judgment in both senses of the word: Political meaning vis-a-vis the Congress and political in the context of the politics of the Federal Reserve System. Burns felt that there had to be more control over the Desk.

On the other hand, there was often a sequence of operations. If, for whatever reason, it was decided to buy or sell foreign exchange on a given day, when the actual intervention would be more or less continuous, the Desk did not have to get authorization for every transaction. The procedural instructions set some limits on that process but, when time was short, the Chairman had the authority to decide almost anything. Some transactions had to be cleared, in principle, with the subcommittee and some other transactions had to be cleared with the FOMC, except in emergencies. Those emergencies included the swap drawings themselves. Later on, the swap drawings were all approved by the FOMC but, in principle, the Chairman or the subcommittee could approve them.

You had this situation in which the Federal Reserve Bank of New York was operating both as the agent for the Treasury in foreign exchange operations and as the agent for the FOMC. Both entities had the legal authority to operate, and, conveniently you might say, they had one "person" who conducted the operations—namely someone at the Federal Reserve Bank of New York. These interactions created a little triangle with three vertices, two in Washington and one in New York. There was, over time, some back-and-forth about how that triangle operated. But the Federal Reserve Board was involved in this process more or less continuously from the early 1960s.

MS. JOHNSON. Just to complete the answer to Jaime's question, there's also the ex post item that appears in the FOMC minutes.

MR. TRUMAN. You're absolutely right. After the manager did the transactions, just as on the domestic side, they would be approved by the Committee. So "the sentence" in the transcripts for the last nine years was empty because there weren't any operations. I guess there were swap operations more recently. But then there weren't any intervention operations on the international side. On the domestic side, there are always operations. The manager, in his actions, was following both the authorization and the directive, and the FOMC approved that he bought this and sold that; the FOMC, as a whole, in effect goes on record as taking responsibility, providing ex post oversight. It is a bit arcane. The FOMC could not formally disapprove a transaction though, in principle, it could instruct the Desk to undo it or it could express a view that would be relevant for future operations. If I remember correctly on a couple of occasions a member voted not to approve—or threatened to do so—the operations either because of some aspect of them or because he or she thought that we should not be in this business.

MR. PROMISEL. I hope you'll get back later to the organizational issues of the decisionmaking process within the System; even within the Board, the different divisions, the New York Fed, and the FOMC. But one aspect I want to raise now, because you use the term "parallel processes" for the domestic directive and authorization and for the comparable foreign structures, is that "parallel" is an overused word. It has often meant processes that converge at the end. But in this case, these processes were parallel in the sense that, even though you would think that the operations on the foreign exchange side and the operations on the domestic side are not independent—you're making reserves and money and it's the same business—in this case they really were independent and were thought of as independent, at least most of the time. The decisions based on the foreign Directive were not integrated directly with the domestic side.

MS. JOHNSON. There is the nagging question whether persons at the Board viewed exchange rate policy as separate and distinct from monetary policy; that the Federal Reserve, in conjunction with the Treasury, had an exchange rate policy decision, an option, a tool, that was distinct from monetary policy.

MR. TRUMAN. Let me just comment on the narrow point that Larry raised. The structures looked the same—authorization, directive, and ex post approval of the actions. For a good part of the period when I was here, there was both a manager for the domestic account and a manager for the foreign account at the New York Fed. In the late 1970s, those were combined under Alan Holmes for a period. He became the manager for both accounts. You had one manager in New York with deputies on both sides. Then it was again split apart. Then it was put back together again, which is the way it is now. So you had one manager in New York. In that sense, the two types of operations were coordinated. The operations were conducted by the markets group in New York. And as far as monetary policy narrowly defined is concerned,

foreign exchange operations involved supplying or withdrawing bank reserves to the market and were always offset. Because foreign exchange settles, or at least did in my time, with a two-day lag, you just rolled whatever effects it had on bank reserves into the supply of reserves or subtracted it from reserves. Foreign exchange operations were just one more factor affecting reserves. Whether you're targeting reserves or you're targeting the federal funds rate, the effects of foreign exchange operations were factored into how one executed monetary policy.

MR. SMALL. So they're sterilized.

MR. TRUMAN. They're automatically sterilized; sterilized in the sense that the impact on the supply of reserves would be offset. Now, from time to time, Steve Axilrod and Volcker, for example, in thinking about fine-tuning the Desk's domestic operations might say to themselves, "This is not the time to hit our target and let's shave our operations on the high or low side." In other words, to the extent that you were thinking about your target for reserves or your target for the federal funds rate, if you were simultaneously operating in the foreign exchange market to strengthen the dollar, you erred on the side of not having the federal funds rate undershoot and vice versa. So there was some super fine-tuning, but that was really the only direct operational sense in which the day-to-day or intermeeting operations of the Federal Reserve were affected—at least as I saw it—by foreign exchange operations.

A separate question is to what extent the FOMC, in setting its monetary policy, wanted to take account of the foreign exchange market developments. There were some occasions when that happened, but they were few and far between, in which the funds rate would be raised or lowered solely because of the foreign exchange market considerations.

Just to put a footnote here. The concern at times for some on the FOMC was that here we were off buying or selling foreign exchange with the right hand and were raising or lowering the

funds rate with the left hand. To what extent does what we're doing with the right hand compromise the message we're sending with the left hand and vice versa? The concerns were mostly from the right hand to the left hand. In other words, here we are supporting the dollar, but we're actually lowering the funds rate. Or here we are trying to prevent the dollar from going up, but we're raising the funds rate. For the market, the question was: Are we sending a confused signal—that is, are we stepping on the accelerator and on the brake at the same time? Or even to the extent that the Federal Reserve is involved in foreign exchange operations with the Treasury trying to strengthen the dollar, are we sending a message about monetary policy, and its subservience to foreign exchange policy (set by the Treasury) that we don't want to send? Are we contaminating monetary policy decisions with this sideshow about the foreign exchange market operation?

That was one of the reasons why, perfectly reasonably, some Reserve Bank presidents who were members of the FOMC and a few Governors, from time to time, said we shouldn't be involved in foreign exchange operations at all. They might have been thinking that foreign exchange operations really don't guide our monetary policy, and they certainly muddle the worldview about what we're doing with respect to our central objectives, which are communicated via the federal funds rate and expectations about where monetary policy was going. In effect, we were muddling the view of the Federal Reserve monetary policy and potentially allowing the Treasury Department to have undue influence over our monetary policy. So, we kept busy with issues like that.

A time when that concern was particularly important was in 1989 when we were tightening monetary policy and we were buying foreign exchange hand over fist in cooperation with the Treasury. Treasury would buy a dollar's worth of foreign exchange and we would buy a

dollar's worth of foreign exchange, which suggested to some that the FOMC was not really serious about the tightening because we were acting to keep the dollar down which normally is associated with an easier monetary policy. Some observers think that the Federal Reserve is acting alone in buying foreign exchange, but in fact we generally split the operations with Treasury. For every dollar's worth of foreign exchange that the Desk would buy, 50 cents would go into the Federal Reserve account and 50 cents would go into the ESF account, a practice that grew up out of habit after the Carter bond repayments.

Just to go back a bit, we had no balances of foreign exchange in 1960. By the time the Bretton Woods system broke down, the Federal Reserve had small foreign exchange balances, but there were big swap debts, about $1.5 billion, which had to be settled after we devalued. Then, in 1979, the Treasury issued Carter bonds (foreign-currency denominated debt issued on the open market in German marks and Swiss francs), the proceeds of which were used to build up U.S. foreign exchange reserves and which were then used, in part, to finance intervention. So, in 1979 and early 1980, when the Federal Reserve was selling foreign exchange or drawing on swap lines to sell foreign currency, Treasury was using the proceeds from its Carter-bond borrowings for sales in the foreign exchange market and subsequently had to rebuild their balances to repay the debt.

During late-1980 and into1981, Treasury bought back more foreign exchange than it needed. When Treasury paid off the Carter bonds, which was done at a profit, it ended up with small holdings in foreign exchange. The Fed also had small holdings in foreign exchange. At that point, you might have found the Treasury operating with its balances, and the Fed operating with its balances. That didn't really make much sense, especially if you're going to report to the Congress jointly. You certainly didn't want to have the Federal Reserve selling and the Treasury

buying at the same time. So, we needed a rule or guideline. This separation of authority raised questions when the Federal Reserve sells/buys and the Treasury doesn't sell/buy or vice versa. What message are you sending?

The convention was that we would buy and sell and split the proceeds with Treasury either on the selling side or the buying side. In fact, we reallocated the reserves at one point so that Treasury bought some of our excess balances, and the Treasury and the Federal Reserve had equal amounts of what are now euros and yen (we also got rid of some of the other currencies we held). But there were some instances, not many in my experience, in which we operated and Treasury didn't or vice versa. One instance was when Reagan was shot, which had an immediate negative impact in the foreign exchange market. To complicate matters, there wasn't time to coordinate with the Treasury and the Desk felt that they should operate. I agreed with that. I went to Chairman Volcker and said we should operate. He said yes. So the Desk sold deutsche marks at that time, without the approval or even the participation of the Treasury. In that case, ex post, Treasury bought into the operation, but there was no prior agreement to operate.

There were a couple of other times on the other side when Treasury wanted to operate and the Chairman, reflecting the views of the FOMC and others, didn't want to participate. In those cases, Treasury operated on its own without us. Those interventions when the Federal Reserve declined to participate were reported but that fact never really got picked up in the market. There were several other instances, most prominently in early 1990, when we did not join the Treasury in operating because Chairman Greenspan thought it was not a wise thing to do.

There were two reasons for the Chairman Greenspan's reluctance at the time. First, the Chairman did not think the operations would be effective. Second, and more important, the

Committee had approved, on my recommendation to the Chairman in the summer of 1989, a large study of Federal Reserve foreign exchange operations (discussed below).

MS. JOHNSON. This brings us back to Larry's original question. Now it has to be recast.

MR. PROMISEL. Do you want to say anything about whether there was some delegated authority from the FOMC to the Chairman on foreign exchange intervention?

MR. TRUMAN. I was describing the procedural instructions. There were several periods, from March 1973 until July 1975, when the United States did not operate at all in the foreign exchange market despite pressures from other countries for us to do so. The dollar was continuing to depreciate during that period and it was referred to as "the third devaluation of the dollar" by our foreign critics. The first one was with the Smithsonian agreement in 1971; the second one was in 1973 after the de facto move to generalized floating; and the third one was in 1975. Ultimately, the United States agreed again to go back into the foreign exchange market. From that period on, we were back in the market on our own judgment, meaning the Federal Reserve and the Treasury's judgment, through early 1981. We intervened quite frequently in the instances when there was downward pressure on the dollar, including in 1978 and 1979. We continued intervening whenever the dollar was under upward pressure in late 1980 and 1981 as the new Administration came in, with the Desk buying foreign exchange for both the Treasury and Fed accounts, initially to cover the Carter bonds. One might say we were sending a confusing message about Federal Reserve monetary policy because the dollar was going up and we were resisting that rise by selling newly-created dollars into the market at the same time we were fighting inflation. Allowing more appreciation of the dollar would have aided in fighting inflation. In April 1981, the new Administration's Undersecretary of the Treasury for Monetary

Affairs, Beryl Sprinkel, indicated that the policy of the administration would be minimal intervention. In May, he laid out the administrations's view in congressional testimony on which Chairman Volcker had an opportunity to comment. This speech modified our practices somewhat by saying that our policy generally would be not to intervene.

MS. JOHNSON. Benign neglect.

MR. TRUMAN. Not so much benign neglect.

MS. JOHNSON. That phrase became attached.

MR. TRUMAN. The phrase "benign neglect" actually dates back to the 1960s.

MS. JOHNSON. Yes, but it came back again.

MR. TRUMAN. It came back. Sprinkel's view was that intervening in the markets was not effective and was confusing. "Let the markets be markets." He was very much a free market man. Nevertheless, we continued to operate occasionally from May 1981 through early 1985. Both institutions continued to have the authority to do so. As I said, when President Reagan was shot, we operated. From time to time, the Desk would buy or sell foreign exchange, but one had to jump a high hurdle in order to convince Treasury to do it—but they were also under pressure from other countries whose currencies were weakening against the dollar and undermining their own anti-inflation policy. The pattern then was to share things out. And that's how the process continued.

But as Larry's question suggests, you had this process by which there were some procedural instructions about how the decisionmaking process would work. To answer Larry's question directly, within the limits established by the procedural instructions there were limits beyond which the Desk, at least for the Federal Reserve account, could or could not operate and those applied as well to the Chairman who generally was consulted on all operations—not each

purchase or sale but on days when we were buying or selling. But sometimes when we were intervening in large amounts, we went to directly the Committee for more authority without getting approval of the Foreign Currency Subcommittee of the FOMC that, as described, consisted of the Fed Chairman, the President of the Federal Reserve Bank of New York, and the Vice Chairman of the Board, and one other Governor. Some things had to be approved by them. If we wanted to have an even larger scale of operations between meetings, then we had to go to the FOMC to change the limit on how big operations could be in the period between meetings.

MS. JOHNSON. The short answer to the question of whether monetary policy was independent of exchange rate policy is that monetary policy was protected from being inadvertently or unintentionally changed by exchange rate policy.

MR. TRUMAN. In a direct way.

MS. JOHNSON. In a direct way. Monetary policy had its safeguards and a well-defined objective. That transforms the question into whether or not one believed that sterilized intervention would be effective in influencing the dollar. Instead of answering that question in a chronological narrative about episodes, I propose that we return to the underlying questions concerning how we thought about the dollar, and make sure that at some point we address intervention explicitly.

MR. TRUMAN. I think that's a good idea.

MR. SMALL. Yesterday you mentioned the economic summit at Rambouillet.[22]

[22] Our discussion never returned to the question of the revision to the authorization and directive in late 1975. That revision was finished in early 1976 after the agreement on the amendment of the IMF Articles of Agreement but before that amendment became effective. Because the FOMC had an authorization and directive covering foreign exchange operations during the period of fixed exchange rates and because the Federal Reserve still had the legal authority to operate in foreign exchange markets that it might want to use, the authorization and directive were revised to update and bring them into conformance with U.S. policy under the new regime. The new language in the foreign currency directive reflected these changes: "System operations in foreign currencies shall generally be directed at countering disorderly market conditions, provided that market exchange rates for the U.S. dollar reflect actions and behavior consistent with IMF Article IV, Section 1."

MR. TRUMAN. A chronology would help. First, you had the Bretton Woods system, which was the par value system. Then after the United States closed the window for official purchases of U.S. gold in August 1971, you had the Smithsonian Institution agreement in December 1971 and the associated devaluation of the dollar, which put par values back into place, at least as far as the exchange rate obligations of countries were concerned—the system of new fixed parities. That agreement collapsed in less than 18 months. First, the dollar was devalued again in February 1973, but the new par values in terms of the dollar could not be held. The result was that by March 1973 currencies were floating, even though the IMF articles of agreement said you're not allowed to float, that you're supposed to have a par value that would be defended. In fact, the floating was "dirty" in the sense that some countries including the United States intervened from time to time. From March 1973 to November 1975 at Rambouillet, and technically until April 1978 when the new Articles of Agreement were formally approved, you had a *de facto* system and *de jure* system that were not aligned. In effect, the agreement at Rambouillet was that countries could have pegged exchange rates, but they could also float. Countries had to declare what their regime was. The Europeans said that they would combine together, so their currencies floated together. The United States said that it floated the dollar. Other countries said they had a managed float; other countries said they pegged to the dollar or to the DM or whatever it might be. But you had to declare what your regime was. Regardless of what you declared—whether you were pegging or floating—you were free to operate in the foreign exchange market.

MR. SMALL. So the United States declared it was going to float and then the Fed said we need more authorization?

MR. TRUMAN. Not quite. Floating was not pure. There's only one country in the world in recent experience that has systematically pursued a pure float—that's New Zealand. Until a couple years ago, New Zealand had not operated in the foreign exchange market at all. Every other country has operated in the foreign exchange market, has bought or sold foreign exchange directly—apart from the fact that countries can and do borrow foreign exchange and issue bonds, which also affects the foreign exchange market. When New Zealand issues a dollar-denominated bond in the international market and repatriates the proceeds into New Zealand dollars, it is in fact changing the relative supplies of assets denominated in the two currencies; this is engaging in a type of sterilized intervention.

MS. JOHNSON. What you should understand, Dave, is that you're not using the words correctly. Under the par value system, you had an obligation to intervene in the market, except for the United States which had an obligation to buy and sell gold. The declaration that you were floating meant that you were laying aside your obligations. You never said that you were laying aside your options. You simply said that you were not going to behave as if you were obliged to maintain this exchange rate at a certain point.

Dollar Exchange Rate

MR. TRUMAN. In the context of the breakdown of the Bretton Woods system and the Smithsonian Agreement, it became very clear, and accepted wisdom, that it was complicated to talk about "the" dollar exchange rate. There was a tendency, by some, to think about the dollar exchange rate as being the dollar exchange rate with respect to the German mark. But it was pointed out, by people here at the Board and elsewhere, that the U.S. dollar's overvaluation wasn't all about the dollar versus the deutsche mark. It was also about a bunch of other currencies moving around too—sterling, the yen, the Swiss franc, and the French franc. Also,

our economic and financial relations were not particularly tied to one country. It would be one thing if we were like Canada, which has at least 80 percent of its trade with the United States and a large fraction of its financial activities tied to the United States. If Canada thinks about the exchange rate, it thinks about the Canadian/U.S. exchange rate.

Partly reacting to the New York Fed view that the exchange rate was just about the dollar relative to the deutsche mark, people here at the Board constructed an index of the foreign exchange value of the dollar against the other G-10 countries' currencies using multilateral trade weights, based on the gross trade (exports plus imports) of each country. They used the index a bit in the pre- and the post-August 1971 period, in connection with the negotiations leading up to the Smithsonian agreement although, because with pegged exchange rates after the Smithsonian agreement, the index never changed much day by day and it did not make any difference until the agreement began to break down, for example, when the British floated sterling in June 1972. But once the move to generalized floating in March 1973 occurred, the G-10 exchange rate index was what we tended to focus on in our presentations to the Board and the FOMC, which generated considerable tension, in particular vis-à-vis the FRBNY, which tended to focus on major bilateral rates with the German mark, Swiss france, or later the Japanese yen. We were asked by some member of the Board, "whose index is this?" The definition of the money supply was agreed upon by the Board and the FOMC; I think the Board formally decided that definition of money, but the FOMC was consulted. In contrast, the index of the dollar was constructed by the staff, and in some contexts, we described it as such. We used it to describe the dollar's movements in our briefings to the Board and the FOMC, and in our articles, but it had not been formally blessed by the Board. De facto it was blessed because no one that I know of complained. Periodically they said, "Shouldn't you consider this and consider that?" but they

did not complain. We used that index to describe overall financial market conditions because there were situations in which the yen was going up against the dollar and the D-mark was going down, or vice versa. And we used it to address questions involving U.S. trade and in our forecast. We could have used a more sophisticated approach in our forecasting, but our research suggested that the gain, in terms of the accuracy of our aggregate forecast of exports and imports, would not be very large. So, we used the same index in the trade-forecasting equations.

MR. SMALL. I was on the domestic side for a while. We had these different money measures, and we asked which is best. One approach was to decide, relative to the benchmark, the correlation with the price level in the long run. There were certain background calculations we did. What were the background analytics or empirics for this index?

MS. JOHNSON. The same kind of thing.

MR. SMALL. Against trade flows?

MR. TRUMAN. In forecasting aggregate trade flows. Another focus of our research was how changes in the exchange rate fed through to the price level. So those were the two major factors influencing our choice of exchange-rate index.

MS. JOHNSON. Also the relationships between interest rate differentials and the exchange rate, because of the theoretical link between them.

MR. TRUMAN. We had the nominal exchange rate index, computed as a weighted average with multilateral trade weights. But, because exchange rates respond to relative prices—if, for example, there's a lot of inflation in France relative to other countries, the fact that the franc is depreciating doesn't really change much. You want to think about exchange rates in price-adjusted terms. We had a big discussion about how we deflate the exchange rate to put it in real, or price-adjusted, terms. There was a series of discussions and debates about what price

index to use. Should one use wholesale prices, consumer prices, unit labor costs, or a normalized version of unit labor costs? We explored all these things just as they did on the domestic side. We ended up using consumer prices. Not necessarily because that was in all circumstances the best measure for each of the individual countries but because, on average, it gave the most consistent results. In the case of wholesale prices, they were less standardized across countries and they tend to reflect the international prices of widely traded goods rather than final retail prices. Consumer prices seemed to be a reasonable proxy for what we wanted. Similarly, we used the same weighting system for short-term and long-term interest rates, having tried other alternatives. We tried to relate movements in interest rates to movements in exchange rates. You had to think about how exchange rate changes fed through to changes in import prices and how these changes fed through to changes in consumer prices and other prices. When our exchange rate—the foreign exchange value of the dollar—goes down, it adds directly to increases in prices in the United States for imported goods as well as those competing with imported goods. A depreciation also adds to aggregate demand through an increase in real net exports.

Given the interest in the question, we had to develop for the Board and FOMC a rule of thumb about the effects of a 10 percent decline in the dollar on the rest of the economy. Our rule was that a 10 percent decline in the dollar would increase the price level by about 1.5 percent over three years. That rule of thumb, which we tried to recalibrate off and on over the years, eventually got smaller, even though logically you would think it would get bigger because our economy was becoming more open and there was more of a direct impact from imports. In fact, the link between exchange rates and domestic prices became harder and harder to find. In order to establish a link between the exchange rate index and the import price index, as measured, we

were very active in getting better measures of import prices rather than just using unit values. Starting under Chairman Burns, we pressed the BLS to collect data on import prices. Initially, you could find a direct link between the exchange rate and import prices, as measured, and a second link between import prices and consumer prices. But by the time I left the Board, we actually couldn't find the second link; however, we could find a statistical link between the exchange rate and consumer prices.

So that made the answer to the question of what is the passthrough, as it's called, of exchange rate changes to prices difficult to answer. Nevertheless, we continued to provide a forecast for the exchange rate to the domestic division (R&S), along with a forecast of import prices. The domestic division had to decide what it was going to do with it. Ultimately, the Greenbook forecasting process combined those two inputs—the exchange rate, on the one hand, and import prices, on the other. We also provided inputs on commodity prices and oil prices which fed into the forecasting process. The international division ended up forecasting the price of oil because we had more expertise on oil markets at the time, even though you might argue that it should have been done on the domestic side.

MR. PROMISEL. At one point that became an issue.

MR. TRUMAN. Yes, I'm sure it was. While I was here, there was an alignment between West Texas Intermediate, WTI, and the domestic refiner acquisition price, which was used as the basic input in the domestic forecast. But that was a statistical relationship. Maybe Bill Helkie, or his successors who were involved in that process, negotiated back and forth about how to think about these kinds of things. For the oil price, we convinced ourselves that, other than in the very short run, we couldn't outguess the futures market, even though the futures market does a horrible job at forecasting the future price of oil. But we didn't have anything

much better. From time to time, again in the near-term quarters, we made some adjustments based on what we thought was the balance between supply and demand. Ultimately, we tended to take the futures price of oil. The principal alternative was to keep the oil price unchanged in our forecast.

Exchange Rate Forecasting

There were additional issues in forecasting trade. What went into prices and what went into the trade equations? What was driving the exchange rate? We can talk about that or the forecasting process, though they are related. We went through several phases on that relationship while I was at the Board.

Initially, the exchange rate was, like several other elements in the forecasting process, treated as an assumption. We didn’t pretend that we were making a forecast in the sense of a standardized relationship. In the middle of the 1970s, Peter Hooper and John Morton developed an equation, which seemed to fit the data well and that, among other things, explained the nominal exchange rates using relative prices. If you’re talking about the nominal exchange rate index, you might have relative prices in there because they push exchange rates around. Similarly, you might include an interest-rate term. Hooper and Morton found that you could also have a term for the U.S. current account position, which is a modified way of thinking about portfolio balance considerations. As we had continuing or bigger deficits, we were building up more net liabilities abroad, and that was weighing on the exchange rate. So you expect the increase in supply relative to demand to bring the dollar down.

MS. JOHNSON. That was the cumulated current account.

MR. TRUMAN. Yes, the cumulated current account, adding the deficits up over a period of years. This variable was, in effect, treated as a portfolio-balance liability. That formulation

worked. It seemed to explain movements in exchange rates quite well, especially in the late 1970s because as we were getting bigger current account deficits, the model's prediction for the dollar index was that it would go down, which it did. And when the rate of accumulation slowed or reversed the dollar would go up. The equation seemed to explain quite a lot. Like many such equations, which were a combination of some theory and a certain amount of duct tape and bailing wire to approximate that theory, the Hooper-Morton model eventually broke down.

The work of Meese-Rogoff played a major role in all this. In 1979, Ken Rogoff came to the division from MIT. And we had on staff an econometrician, Dick Meese. They did a paper on exchange rate forecasting models, which initially was released as an International Finance Discussion Paper (IFDP) in 1981, later revised, and finally published in 1983. It is interesting and instructive how that exercise came about. We sought to involve other people in the division in the broader forecasting process, not just Kathy Morrissee, who was responsible for the trade forecast. When Ken arrived, he was invited in to participate in the forecasting process, which often involved debates about what was available in the literature to help guide our processes. There was a literature on exchange rate equations, and Ken was asked to look at this question in a systematic way. (This issue also had arisen after we had had some questions from the Board about our exchange rate forecasts.)

I thought it would be useful to have a more systematic way of thinking about exchange rates. So if I take credit for that paper—which I'm glad to do by the way—it is because I was in a way responsible. As often is the case at the Board, what started out as an ad hoc project to help us think about the forecasting turned into an important paper that discussed all the existing models—the monetary approach, the balance of payments approach, Hooper-Morton model, etc. Their conclusion was that none of these models did a very good job at forecasting. None of them

did any better than a simple naive model—the best forecast of the exchange rate three months from now is today's exchange rate. That was a better forecast than even the three-month forward rate derived from short-term interest rate differentials.

Their paper also indicated that, over a long period of time, maybe two or three years, there were other factors affecting the exchange rate such as the influence of changes in price levels on nominal exchange rates, meaning that monetary policy got in through the back door. And there may have been some weak evidence that the cumulated current account balance had some effect over the longer term on nominal exchange rates. On the other hand, trying to explain the exchange rate in two or three years was not a particularly useful exercise in short-term forecasting. The models did a bit better than naive forecasts two or three years out, but the results didn't provide much information about how you should think about what went on in between.

MS. JOHNSON. The nature of the testing they did was what's called out-of-sample forecasting. You could fit the model to a given body of data and then use it to forecast the future. It would appear because it's the nature of the fitting process that some models would do a better job of explaining the historical data used to construct them than others. Their stronger test was to stop that estimation process at a point where there was still more data available to them, use the different models so calculated to forecast data that hadn't been incorporated in the estimation, and see how well the models did on that basis.

MR. TRUMAN. The question is how well or how badly you do out of sample. That was really the point. I recall that, out of sample, using the completely naive model—that is, using today's exchange rate as the forecast—did better than anything else. That did have some influence on our thinking, though as I said in yesterday's conversation, the U.S. current account

narrowed after the big depreciation in the late 1970s and went into surplus in the early 1980s, according to current data. But then the current account went into a huge deficit as a share of GDP and our view was that such a deficit was unsustainable. As a result, we would forecast that there would be a big change in the foreign exchange value of the dollar. Ultimately, we were right, but we didn't get the timing at all correct.

We then learned—or at least I learned—that our approach to the forecast probably was not the best possible way to present a forecast to the Board and FOMC. We might be right in the long run, but that didn't tell you much about the short run. Moroever, the short-run forecasting errors mattered because other parts of the forecast could be jerked around by, for example, assuming that the dollar would be 10 percent lower a year from now. So, eventually we tended to use a forecast that went back to the spirit of Meese-Rogoff, starting with the naive hypothesis that tomorrow's exchange rate would be the same as it is today. We might take interest rates and other factors into account because, as Larry said yesterday, we then had a process in which we had to think about not just this overall average level of the exchange rate, which is where we started, but increasingly about other parts of the world and their exchange rates relative to the dollar. You had to be concerned not just about the average, but about what was going to be happening to the DM, the yen, or the Canadian dollar. The people who were in charge of following Canada, Japan, or some other country had a view about the exchange rate for their country; that view had to be at least considered in adding up an overall average exchange rate for the dollar.

MS. JOHNSON. Ultimately, those individual views, along with thoughts about the policy issues that would be posed by existing conditions, were considered in the forecast meeting. A forecast for the dollar emerged from the meeting, and we reconciled the inputs of the

individual economists to give them a path to use in many different ways that would be consistent with the division's outlook. Consistency loomed large in this process. Being right was a good thing, and we were not always right. But at the very least, we made vigorous attempts, and increasingly more complex computer-based attempts, to be internally consistent.

MR. TRUMAN. It was not just a process of coming up with a number to plug in a model, or a set of trade equations. It was a process of thinking about policy in other countries as well as policy in our own country. You thought about future monetary policies for Japan, Canada, or the United Kingdom. We forecasted implicitly for the FOMC, and explicitly within the division, the direction of movements of the Bundesbank and its interest rate policy. That was built into a process of our thinking about policies of other central banks (and the consequent economic outlook).

MR. SMALL. So the implication you derive from Meese-Rogoff is a view in which the exchange rate is driven predictably by certain factors, but we can't predict those factors. One such factor could be monetary policy. Therefore, there's room for the Federal Reserve to move exchange rates. Or one could go another way and say these are competitive markets, we can't predict them, and therefore we can't influence the exchange rate.

MR. TRUMAN. It wasn't that we couldn't forecast the independent variables. It was that, even if you take the independent variables out of sample as they appeared, they did a lousy job of replicating the accuracy of the in-sample forecasts.

MS. JOHNSON. There were uncaptured variables that had a bigger influence on the exchange rate than the variables that you put on the right-hand side, even when you put their realized values into the forecast.

MR. TRUMAN. It relates to the discussion we had yesterday. This happens to be one of my current bugaboos, and it's a standard problem with large-scale models. In thinking about the United States as an open economy, you have several exchange rates that are part of that process. Most of us believe that the exchange rate matters for inflation, aggregate demand, and the composition of aggregate demand in the U.S. economy. So, the exchange rate or exchange rates are relevant to thinking about the outlook for the U.S. economy. The problem that economists have today is that there is no systematic way of describing empirically that exchange rate forecasting process in one or more equations. What do the models here at the Board do? As a first approximation, they use uncovered interest parity. In principle, you can do this by using long rates and linking them to short rates. In 1991 Hali Edison and Dianne Pauls wrote a paper here at the Board that systematically investigated the interest-rate/exchange-rate relationship both in the aggregate and bilaterally.[23] They found that nothing works; there is no relationship. My point is that using uncovered interest parity to close these large models is cheating, even though this condition may be justifiable in theory. There are other ways of closing the models. You can say, "There's a risk premium" and you can try to model the risk premium and the effect of various factors on the risk premium. When we wanted to simulate what would happen if the dollar should decline by 10 percent, we had to fiddle with the risk premium term in order to get the dollar to follow the desired path. The division's new DSGE (dynamic stochastic equilibrium) model (SIGMA) tries to use a much more sophisticated approach to think about information in general as it influences the exchange rate.[24]

[23] Hali J. Edison and B. Dianne Pauls (1991), "A Re-assessment of the Relationship between Real Exchange Rates and Real Interest Rates," International Finance Discussion Papers 408 (Washington: Board of Governors of the Federal Reserve System, August).
[24] SIGMA is a multicountry open economy model developed in IF and used as a quantitative tool for policy analysis.

MR. PROMISEL. I have a few comments. Maybe you addressed this in the exchange rate forecasting section. First, one complicating factor is that expectations of future monetary policy affect the current spot rate, but the Greenbook forecast assumes unchanged U.S. monetary policy. So, we might have known that the market was expecting a change in policy, but we were constrained in the forecast to have unchanged policy. Reconciling that was often a complicating factor in our process for how much we wanted to constrain ourselves by the unchanged monetary policy assumption.

MR. TRUMAN. When I was here, an unchanged monetary policy was not always the underlying assumption in the Greenbook, in particular when we were targeting nonborrowed reserves.

MR. PROMISEL. At least an explicit policy assumption was essentially given to the international division. If there was a change in policy embodied in that assumption, it was not necessarily what the market was expecting. Second, to ensure consistency across the countries that we were forecasting, there was an adding-up constraint. The way that the consistency comes about across countries is that policies and developments are manifested in current accounts. And given the accounting, those current accounts should add up to zero. The surpluses and deficits should add up to zero. But in fact, they don't; there's a big discrepancy between the two, albeit one that was to some extent systematic. We spent a lot of time thinking about whether our various forecasts were consistent with respect to that discrepancy, because if we just let that be whatever it was then we couldn't be sure you were imposing consistency across countries.

MR. TRUMAN. There were times when we said that we might use the forecast to indicate the direction of the dollar but not necessarily have the dollar move very much because we didn't want to jerk around other features of the forecast. But how did we convey instances in

which there were risks? In the Greenbook, we often would articulate them and, in the beginning, we offered our view on the direction for the dollar, but we didn't provide a figure. Later on, as the Greenbook became more explicit about these things, we might refer to a number. So, we could be assuming that over the next six quarters the dollar would decline by 2 or 3 percent, which is not enough to move around much the other elements of the forecast. But if we felt there was a risk that it might decline by a lot more, then in a pre-FOMC briefing or to the FOMC itself, we would offer Greenbook simulations, alternative simulations, using the model to run simulations assuming a decline of the dollar by, say, 20 percent and trace out the implications for the economy given our assumptions about monetary policy.

MR. PROMISEL. I recall that the Bluebook had a much greater scope to define alternative policies, and we sometimes took advantage of that.

MR. TRUMAN. In those days, in the Bluebook, and again in the FOMC chart shows, the pre-Humphrey-Hawkins Report, or the Monetary Policy Report, there would often be alternative paths presented for one reason or another—a dollar alternative that was associated with another alternative, a big move in monetary policy or something like that, or some other feature of the economy that was being investigated. We had to come up with the associated movement in the dollar, if any, and that would be part of the process.

Exchange Market Intervention

The question we should now come back to is the issue of the effectiveness of intervention. In the historical context, we went from a Bretton Woods world, where countries had an obligation to defend their par values—their exchange rates—to a world in which there was a view that exchange rates shouldn't move around too much. There was an unwritten obligation to lean against exchange rate movements which were too large or too disorderly. This

view characterized the underpinnings of intervention operations throughout most of the 1970s. But then, as I described earlier, the Reagan Administration—Treasury's Don Regan and Beryl Sprinkel—came in and essentially said, "We don't want to get involved in this anymore. It's wrong. It's mucking with markets. We don't know better than markets. And we don't think it's particularly effective."

And as Karen mentioned earlier, there was an attitude of benign neglect of the exchange rate. Meanwhile the dollar was not going down, it was going up. This environment was helpful for us in controlling inflation in the United States, but it was unhelpful for other countries' inflation. European countries had lower inflation rates, but they still had perceived inflation problems and were saying, "You guys should be doing something about the exchange rate and preventing the dollar from going up." They did not call on us to change our policies, but wanted us to use foreign exchange market intervention to resist the dollar's appreciation. The G-7 summit in Versailles in June 1982, led to an agreement to explore these issues by the participating summit countries. The agreement was endorsed by the Treasury and Beryl Sprinkel, to his credit. He said, "We don't agree that this instrument is effective, but we're prepared to participate in a study of the effectiveness of exchange market intervention. We will learn from that study, even though we are skeptical about the effectiveness of exchange market intervention because assets are perfectly substitutable among the major currencies and changing the supply and demand of those assets doesn't have any effect. But we can look at the evidence such as it is."

So, the G-7 launched a study of the effectiveness of exchange market intervention. The group conducting the study was chaired by a Frenchman named Philippe Jurgensen, which produced the Jurgensen Report. Over an eight-month period, the group sought to investigate

several issues. At the Federal Reserve Board, we poured an incredible amount of resources into trying to determine statistically whether exchange market intervention was effective. I think it was time well spent.[25]

I was the principal representative for the Federal Reserve Board. We engaged the Federal Reserve Bank of New York in the process. Of course, there was a Treasury representative who was Dick Erb, who was then the U.S. executive director in the IMF, which was a bit odd rather than having someone on the Treasury staff, but Beryl trusted Dick. Also, part of the U.S. group was Scott Brown, who was then at the Treasury but who had worked in IF at the Board where he met and married his wife Kathy. We considered different perspectives on this broad topic.

One issue was to define what we meant by "intervention," as articulated in a paper co-authored by Don Adams and Dale Henderson. Many of the other central banks and finance ministries didn't think of intervention as sterilized or unsterilized. The U.S. academic world, and maybe some Europeans for that matter, thought it was obvious that intervention was sterilized because, if it's not sterilized, then it's sterilized intervention plus monetary policy.

I've seen statements in writing, including from people who are at this institution, that everybody knew that intervention was automatically sterilized. ("Everybody" may have been most U.S. academics.) That certainly was not true for all the representatives of the other six participating countries in this exercise. So, we wrote a paper on our thoughts about defining sterilization because it wasn't completely clear what was meant by that term. You could talk about it the way I did earlier as involving no change in reserves. You could talk about it as no

[25] The Federal Reserve's contributions to this study group are summarized in Dale Henderson and Stephanie Sampson (1983), "Intervention in Foreign Exchange Markets: A Summary of Ten Staff Studies," *Federal Reserve Bulletin,* vol. 69 (November), pp. 830–36.

change in the policy interest rate, which might be different depending on how one thought about relationships, or in lots of other ways. We also raised the question about what kinds of operations you should and shouldn't include in the definition of intervention. We also had a number of studies using daily data on exchange market intervention that we collected from the other participating countries under the agreement that we would destroy the data afterwards. Even though we had our own series on intervention as reported in foreign exchange conference calls every day, it was pretty clear to us that the information the Federal Reserve Bank of New York collected on the intervention of other central banks was not always accurate, probably because it wasn't subjected to the kind of data collection standards that are normally in place. It was not so much data that was collected but data that was exchanged.

The research results supplied weak support for the effectiveness of intervention via the portfolio balance channel but also acknowledged the possibility of a signaling channel for effectiveness.

We tried testing portfolio balance models along with a number of other approaches, including case studies of particular episodes. Three of those case studies were done at the Federal Reserve Bank of New York; other central banks contributed as well.

The finding was somewhat disappointing. By the way, there was an overall consensus on the conclusion, not a complete agreement. The conclusion was disappointing to people here because there was a view, maybe most clearly associated with Dale Henderson, that the portfolio balance approach ought to work.

MS. JOHNSON. The theory implicit in portfolio balance model—

MR. TRUMAN. That theory says that sterilized intervention doesn't affect monetary reserves, but it affects the supplies of dollar-denominated assets in the hands of the public

relative to assets denominated in other currencies—in particular, supplies of government securities, the safest assets. When we intervene and buy foreign currency, we sell Treasury bills to finance the operation. Our foreign currency assets increase, while those assets in the hands of the public go down, and we offset that increase by selling Treasury securities, which amounts to an increase in the supply of Treasury securities in the hands of the public. When the ESF (Exchange Stabilization Fund) intervenes, it finances itself in the Treasury market and so the intervention is automatically sterilized. Other central banks have their own ways of doing it, but the point is that, as the foreign monetary authorities are buying their own currencies, they increase the supply of dollar-denominated assets in the hands of the public, while reducing the supply of, for example, deutsche mark-denominated assets or yen-denominated assets held by the public.

In a portfolio balance model, one would think that the associated rebalancing would affect the exchange rate between the two assets. But because you have to make additional assumptions, the question became whether we were testing a joint hypothesis: whether these assets were perfectly substitutable and whether sterilized intervention was effective. Dale Henderson and Debbie Danker and others wrote one of the papers on that subject. They would have liked to have found that intervention was effective via this channel because it would have been nice to have discovered another independent instrument of monetary policy.

But we didn't find a lot of evidence of effectiveness. This result did not completely eliminate our belief in the effectiveness of intervention. There was a view, that we touched on in our earlier discussion, that intervention sends signals about policy intentions. Of course, it was a device to send signals so long as the signals were consistent with what policy intentions really

were. The effectiveness may wash out over a few weeks or days. But these short-term effects may sometimes be useful for other purposes, perhaps even for stabilization policy.

I considered myself an open-minded economist. I was going to take this project where the data and the analysis went. On the other hand, I also thought that the narrow view that intervention is never useful for any purpose, which was a caricature of the Treasury view at that time, was wrong. If I had a personal objective for this exercise, it was to restore some credibility in foreign exchange market intervention as an additional tool of economic policymaking, not necessarily monetary policymaking but economic policymaking, which broadly speaking was the result in the study as I read and wrote it. But the study also scaled back the views of other countries' authorities about how useful, how powerful a tool intervention was, although not everybody was convinced.

The study also established the fact that intervention has a number of roles to play other than just moving an exchange rate or even just preventing an exchange rate from moving over a short period of time. In that sense, it narrowed the debate substantially. The study didn't settle everything, though I felt it contributed substantially to the academic literature. I was able to get agreement within the group that individual central banks and finance ministries could publish the papers that we had submitted to the group. Almost all the papers written for the project, including 10 that came out of the Federal Reserve System, were subsequently published. The Federal Reserve issued its papers in a special set of staff papers. I consider it one of my major contributions to advancing the discipline—major relative to any other of my contributions; not on an absolute scale but on a relative scale. I was quite proud of what we did. I was proud of the result because we had, to a degree, resuscitated this tool. Not in the sense that it was a mechanism to control or closely manage the exchange rate and make it into an independent

instrument of economic policy, but that there was a role for intervention in the market from time to time.

Subsequently, the Treasury loosened up a bit about how often the intervention operations took place. And, of course, the dollar continued to move up. There was a turnover in Treasury personnel and views—from Don Regan to Jim Baker and from Sprinkel to David Mulford who was the Assistant Secretary for International Affairs and then moved up to be the Under Secretary for International Affairs when that position was created under Baker and Deputy Secretary Darman. The dollar peaked in February/March 1985 and started coming down. Sterling was under huge pressure and there was a G-5 announcement reflecting concern, which was the first public statement by a G-5 meeting. We did a little bit of intervention in early March. Then you had the Plaza Agreement in September 1985.

The Plaza Agreement was essentially engineered without much engagement of the Federal Reserve. I'm pretty confident that the Treasury machinations at that time were not done in consultation with Paul Volcker. He may have had some hints and allusions based on his conversations with Baker. But most of the information I had about what was going on came to me through my contact at the Bundesbank. Wolfgang Rieke, my counterpart, would call me up and brief me, and then I would go to Volcker and say, "I hear these stories about Mulford running around Europe and talking about doing something grand about exchange rate management." Volcker would say, "News to me" or "I don't know anything about it." In early September, at the last minute, he was pulled into the discussions of what led to the Plaza Agreement. The agreement was to act in concert to bring about a substantial decline in the dollar through intervention. Now the G-5 finance ministers and central bank governors didn't actually say they wanted a decline in the dollar; they said they wanted an increase in value of the other

currencies, which is the same thing. There's some debate about whether there was a target for the dollar and whether there was a budget for how much intervention could be undertaken by each country; there certainly was talk about both.

In fact, Volcker's principal contribution in this period was to worry that, given that the dollar had already come down substantially from March to September, once you started this train going down the track, you needed to be careful what you wished for. The Federal Reserve and the Treasury did a little bit of intervention initially, but then we stopped, and the dollar kept on going down through 1986 and into 1987, which we had been predicting all along. At this point, people got very nervous about the dollar's decline going too far or too fast, and the Treasury Department concocted a new agreement to stabilize the dollar. We knew more about that one—enough that we sent a memo to Chairman Volcker saying we didn't think that the dollar had declined far enough to correct our current account imbalance and that we were skeptical that a new exercise in foreign exchange market intervention in order to hold the dollar would be particularly effective in doing so, assuming that monetary policy was not going to be directed to this end.

I don't think I had a big opportunity to argue with Chairman Volcker on the subject. He read the memo and probably harrumphed at me. I think his view, as he described it to me subsequently, was supportive of the effort. His concern was not so much the implications of intervention for U.S. financial markets, or for the course of the U.S. current account, but rather the implications of further dollar depreciation weakening global growth. The decline in the dollar had gone so far that it threatened to be highly disruptive to the world economy.

MR. SMALL. Because exporting countries like Japan—

MR. TRUMAN. They would see their exports fall too rapidly. They wouldn't be able to compensate with other macroeconomic policies. The alternative view, as articulated in subsequent reports on U.S. motivation, was that the Treasury wanted to intervene to support the dollar so the Federal Reserve would not have to raise interest rates to prevent the dollar falling further or to compensate for the macroeconomic effects on the U.S. economy, which were actually there, in the form of growth and inflation. We continued to forecast stronger and stronger net exports in this period. The FOMC recognized that the dollar's decline added to inflation pressures, both directly through the exchange rate effects and indirectly through the aggregate demand effects. The view then was that we were approaching full employment.

The Treasury and the Administration may have been worried about the Federal Reserve raising interest rates and the implications for the 1988 election. Volcker's concern was that the world economy couldn't take a further decline in the dollar. We were right at least in one respect, which was that all this intervention was not effective in stopping the dollar's decline; the dollar continued to decline through the stock market crash in October 1987, which was partly attributed at the time to further disagreements between the United States and Germany, in particular, about monetary policy. By that time, Volcker had left in August 1987—his departure was announced in May—and Chairman Greenspan was here. We had a stock market break in October 1987, we eased monetary policy in reaction, and we continued to want to arrest the dollar's decline. It was one of the rare occasions in which the rest of the world wouldn't agree to help us through intervention until we did some things to put our fiscal house in order. So, there was a big fiscal summit to construct a down payment on fixing the budget deficit.

The dollar kept falling. After the fiscal summit agreement, the G-7 issued a statement in December 1987 recommitting to cooperation in foreign exchange markets.[26] It was the first such G-7 statement issued without a meeting. The dollar continued to decline through December and into early January. Then Sam Cross at the FRB of New York and his colleagues in other central banks staged a bear squeeze. In early January, they organized a fairly massive resistance to the downward pressure on the dollar, and that stopped the fall. You could argue about whether it was effective intervention, or it was just good timing, but it appeared to work. The dollar started coming back but, again, not instantaneously. Regardless of whether the results of this intervention reflect correlation or causation, the run stopped. Subsequent discussions of this topic of the effectiveness of intervention point to this episode. We intervened, and the dollar turned around, so *post hoc, ergo propter hoc*. Today there are many people, not the majority of the economics profession, but a nontrivial minority, who say exchange market intervention is effective at least in substantially altering the course of the dollar and the major currencies, if not to actually peg them.

When the dollar did turn around, there was a lingering view at Treasury that we were still operating under the Louvre agreement—with some notion of bands—or target zones—for exchange rates. And some people, including my current boss, Mr. Bergsten, continue to hold to the view that the target-zones lasted longer than into the fall of 1987. If it is correct, I didn't notice it in conversations with the Treasury or FRBNY about our motives in intervention at the time. But having eased monetary policy in the wake of the stock market crash, monetary policy turned around in 1988, and the dollar began to recover.

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[26] Between January 1985 and December 1987, the G-5 group of finance ministers and central bankers expanded to become the G-7 by including Canada and Italy. The G-7 already existed at the summit level.

We did one heck of a lot of intervention during that period. There was a huge buildup of our balances that was controversial within the FOMC because the Fed was tightening to contain inflation at the same time that we were resisting the dollar's appreciation. The United States was intervening on a scale never seen before. The amount of U.S. intervention in 1989 was about $19 billion. At the end of 1987, the Fed lowered interest rates, and then again in January 1988, but in late March, the Fed raised them. Interest rates continued to go up through the middle of 1989, but they came down a bit after that.

By the summer of 1989, the FOMC was restive. I proposed to the Chairman that he ask the FOMC to authorize a staff study of Federal Reserve foreign exchange operations. We undertook a multipronged study to look at the history of operations and their legal basis, but we did not re-examine the question of effectiveness because we had recently done that. The goal was to conduct a comprehensive review of this topic, which was done partly at the Board and partly at the Federal Reserve Bank of New York. I wanted to involve economists from the System because it was their bosses who often were most critical of our operations; we had a big conference here to discuss a large group of papers. I had concocted this idea with Sam Cross as a device to address some of the concerns of FOMC members about our operations.

As I mentioned earlier, one of the occasions on which we declined to operate along with the Treasury involved the yen in early 1990. The Chairman, I think wisely, argued with the Treasury against doing it to begin with on first principles of the lack of effectiveness under those circumstances. He wisely felt that teaming up with the Treasury and offering advice to the Japanese would be presumptuous and politically unwise, especially since the case for intervening in yen was pretty weak, in his opinion. In addition, he did not want us to be operating for the

FOMC before the Committee had a chance to review the study, which was scheduled the March FOMC meeting.

In March 1990, there was an extensive discussion of international matters and the aforementioned study. There were two matters on the table: renewing all swap agreements and renewing the warehousing agreement with Treasury. The warehousing agreement had existed for many years. Sometimes the ESF would have too much foreign exchange and not very many dollars on its balance sheet. If the ESF wanted to buy any more foreign exchange, it didn't have the dollars to sell. Dating back into the 1960s, but maybe it was later, the FOMC would agree to enter into an off-market swap transaction with the Treasury in which it would sell us its foreign exchange and we would sell the ESF dollars.[27] In principle, the swap would be unwound at a later date at the same exchange rate. In practice, it was regularly rolled over so that it was essentially permanent, hence, the term warehousing. But the exchange rate risk lay with Treasury, not with us. At the March 1990 meeting, we had to renew this agreement, which had gone up and down in size over the years. There was a vote on continuing this arrangement. There were three votes against doing so.

It was approved in the first organizational meeting of the FOMC, where you had to approve these authorizations and directives and procedural instructions on the international side. Two Governors voted against renewing the warehousing agreement with the other vote against coming from a Reserve Bank president. Certain presidents thought we shouldn't be in the business of foreign exchange market operations at all, so they routinely voted against renewing those authorizations.

[27] The warehousing agreement was reinstitutionalized at the January 1976 FOMC meeting.

To some extent, that view led to the unwinding of the swap network that we referred to yesterday. I thought the unwinding was finished, but Karen told us that she tried to complete the job by eliminating the swap arrangements with Canada and Mexico. Since 1982, we hadn't used the swap network very much, except for Mexico. And with the creation of the ECB and the establishment of the euro, we had to do something with the swaps arrangements with various individual euro area central banks: The Bank of France, the Bank of Italy, the Bundesbank, and so forth. At a minimum, we had to consolidate those arrangements into a single arrangement with the ECB. We talked to the Europeans. The FOMC's view was to do away with the swap arrangements, and the Chairman was sympathetic. He was tired of all those negative votes, I think. After some discussion in the FOMC, Greenspan said, "That will be my initial position, and we'll come back to you," because there might be a view on the other side arguing that we didn't want to disrupt international monetary cooperation.

We talked to the Europeans; they were perfectly willing to do away with the swap arrangements. We talked to the Japanese and, to my amazement, they were perfectly willing to do away with their swap arrangement. In my experience, the Japanese didn't ever want to say anything about reducing cooperation. That led the FOMC to agree to do away with everything, except the swap arrangements with the Bank of Canada and the Bank of Mexico. Those swaps were tied together in an agreement among the governments of the countries, which required six-months notice to terminate. So, we couldn't eliminate them at that time. The FOMC could terminate it, but it hadn't given the required notice. After I left the Board, Karen was to talk about unwinding the remaining swaps. But she was unsuccessful, fortunately, in my humble opinion.

This cooperative framework was quickly used again, in the context of the millennium changeover. It was repositioned, at least in principle, in that there was an exchange of telexes that set up procedures for activation, but I think it wasn't actually used. It was certainly used in the wake of 9/11. And it certainly has been used since August 2007 on a scale that would amaze me if I had been Rip van Winkle and had gone to sleep in 1998, awakened in 2008, and discovered that on December 31, 2008, the Federal Reserve had about almost $600 billlion credit outstanding to foreign central banks. I would have said the world has gone crazy.

I have one other point to make on the dollar index. One of the last things that I accomplished while I was here is that I pushed going beyond the G-10 countries in measuring the international value of the dollar, and I am pleased by that. It was pretty clear that the world was different if only because there were more exchange rates that were important to the United States and that moved around. The Financial Markets Section revisited the issue of the index, pursued research on this question, and recommended a mechanism that takes account of third-country effects. The fact that there are data for the balance of trade between Canada and the United States does not capture the fact that both the United States and Canada also compete in Europe. But Canada is small in Europe relative to the United States, so the new approach tries to take account of those third-country effects using a more sophisticated weighting process. We then had to decide what currencies to include in the index. We went quite broad. We got up to 34 currencies, which is now 26 after the introduction of the euro. The rule of thumb was to include all countries with which we had more than 1 percent of our trade. The redesign of the index was completed just as I left, and I think it was important. Thinking about the dollar exchange rate, while excluding Mexico, Brazil, and other important trading partners, was a little weird in the world of 1998, to say nothing of 2009.

MS. JOHNSON. The residual swap lines with Canada and Mexico were neither here nor there in opening up huge swap lines again with the ECB and the Swiss and the Japanese. So, the question remains—which I think will have to be addressed when all the dust settles—whether the right posture is to have the agreements on the shelf, so you can take them down quickly, sign them, and start something anew as needed or whether to have the framework in place but not actively used.

MR. TRUMAN. If I were Nathan Sheets, who's the current division director, I would argue that you should be honest.[28] If you're going to have it on the shelf—which is what the case was for Karen and Nathan—then you ought to admit that it's on the shelf, rather than having it as some little secret that the FOMC knows about but is not telling the world. This may become an issue in the current context, though it hasn't yet. Today, December 2, 2009, there are people in the United States Congress and in the general public who think that it was wrong to advance close to $600 billion in U.S. dollar liquidity to the rest of the world in the context of this global crisis. It's perfectly possible that the Congress in its infinite wisdom will say no more swap lines or no more lending by the Federal Reserve to foreign central banks. Indeed, the Ron Paul amendment to current legislation would at least open up those operations to full auditing by closing the monetary policy exemption. But that's just my view about it. If we're going to use this instrument, then we ought to be open about it. Moreover, if we're going to think about it as a potential instrument, we should at least think about it from time to time, to make sure that is in working order. That doesn't mean that you have to have numbers associated with it, but you probably ought to make sure that it's in working order and be open about the fact that, if you have another international financial crisis, you are in a position to use this thing. It also should

[28] Nathan Sheets was the IF director from September 2007 to August 2011.

be recognized that the existence of a swap arrangement with another central bank does not grant that central bank automatic access to the arrangement. That requires a separate decision.

MS. JOHNSON. The concept of the swap mechanism has changed over time. It has gone from being a tool directed solely at exchange rate management to something much broader. People need to think about it in that context, and then make some decisions.

MR. SMALL. From portfolio theory and exchange rates to plumbing and systemic risk.

MS. JOHNSON. Well, the nature of wholesale money markets in the world has changed. And it is in that context, with a whole lot of other things, that you should think about it.

MR. TRUMAN. Swaps are about three things: It is about intervention as a financing mechanism, it is a liquidity financing mechanism, and it is a loan. It is about intervention when the foreign central bank uses the dollar proceeds of the swap to buy domestic currency. It is a financing mechanism when it provides dollar liquidity for use by the foreign central bank that would not otherwise have been available. And it is a loan because we bear the counterparty risk inherent in the transaction.

Let me elaborate on the different functions that a swap drawing may have. When the Federal Reserve engaged in euro swaps with the ECB recently, the Fed in effect was facilitating the ECB's intervention sales of dollars, by giving them dollars. The ECB could have lent euros to their banks rather than lending dollars. And the ECB could then have gone into the market and said, "We will convert your euros into dollars in the market or off market." That's intervention. So, the Fed was facilitating intervention, or non-intervention, in that period, it seems to me. People didn't think about it that way. They thought about it in terms of the wholesale money market process, which is absolutely right and is the second function of swaps. Effectively, the Fed is helping to lubricate the international financial system, along with

wholesale money markets. If you look at the discussions raised in the FOMC in mid-1996, you will see that the possibility of needing to use the swap network for this purpose was very much on the mind of, and articulated by, some of the members of the FOMC at the time. They were thinking about the needs of Japanese banks for dollar liquidity during that period. That's my memory.[29]

Let me now give you an example of how a swap can function as a loan. When the United States, during the global financial crisis, was allowing a swap drawing by Switzerland, Sweden, Denmark, South Korea, and Singapore as well as Mexico and Brazil, the United States was taking a credit risk because it was advancing credit to a foreign government, even if this credit risk was deemed small. This was the use that was made of the swap arrangement the United States had with Mexico that was used in the mid-1990s. The last time the United States had used them, as I said before, for any country other than Mexico was 1981 for Sweden. All the subsequent cases between 1981 and, I guess, 2000 had been for Mexico, which is part of the reason why the broader swap network had atrophied. But it is an extension of credit to a foreign government cum central bank. All three elements are part of a swap drawing and you can't separate one from the other.

The FOMC obviously thought that the ECB was good enough credit risk—and the Swiss National Bank, the Bank of England, the Bank of Korea, and the Bank of Mexico. But the combined total of drawings was much bigger than I could have ever contemplated, though clearly special circumstances were involved. So, I think this topic and use of the swap lines will be revisited, and Karen is absolutely right that it will be interesting to see how it comes out.

[29] I have checked the record since this conversation and my recollection was correct.

Banks' Exchange Rate Risk and Herstatt risk

MR. TRUMAN. With exchange rates beginning to float and the expanded scale of cross-border financial transactions and exposures, financial institutions took on additional risks. You had to think about the additional risks that banks were taking on, and worry about the plumbing aspects of the financial sysgtem, which was in part the Herstatt problem. Herstatt risk arises when a transaction is treated as final on the books of one bank but is not final on the books of the bank on the other side and then the bank that was to deliver the funds fails or is closed. In the case of a foreign exchange transaction, the norm was to settle two days later. If some bank fails in the middle of a transaction—before it is finally settled—how do you sort out the consequences, in particular if the bank that was to receive funds had meanwhile contracted to lend them on to another bank? Herstatt, or settlement, risk is separate from foreign exchange risk. You can have a settlement problem in a transaction that involves one currency or two currencies. Exchange-rate risk refers to the total exposure of the bank to exchange rate movements when it holds assets or liabilities in more than one currency. Finally, when the system went to floating exchange rates, banks had more foreign exchange exposure as exchange rates moved. They could take losses. That possibility also existed under Bretton Woods, but it obviously existed in a much bigger way under floating rates.

This Herstatt-type risk of nondelivery of funds was largely handled as a regulatory issue in supervising the payment system. The System, the Board, and the division to some degree, were involved in that supervision, more so in the early and mid-1970s, before I became division director, than after I became director. The Board worried about the foreign exchange exposure of U.S. banks (the dollar exposure to the foreign banks was also a type of foreign exchange exposure of U.S. banks). It was less of a question of foreign exchange exposure than exposure of

the balance sheet to nonpayment by the foreign banks. Foreign exchange exposure had balance sheet implications, but they were small relative to the total balance sheet. The situation for U.S. banks was not the situation that you find in other countries where the banks are financing themselves in foreign currency as was the case, for example, of Korean banks in this latest crisis or banks of other countries. But U.S. banks had dollar exposures to those banks. Although the Federal Reserve approached, from time to time, the question of whether there should be regulatory or supervisory limits on the pure foreign exchange exposure of U.S. banks, they were never implemented. I think those exposures were reviewed in the supervisory process, however, and judgments passed if they were considered excessive.

IF did not get heavily involved in payment systems issues. The Federal Reserve Bank of New York and the payments people here at the Board took the lead. We were involved but not in the sense of driving the process. Someone like Jeff Marquardt, who went from the banking section of our division to the Division of Reserve Bank Operations and Payment Systems, worried about these kinds of issues. But I think it's fair to say that, while we in IF had some peripheral involvement, we were not a major player.

Responsibilities for Exchange Rate Operations

MR. TRUMAN. Before we leave the topic of exchange rates and how they figured in the work of the division, the Board, and the FOMC, I have one comment that partly relates to this topic and partly relates to the organization of the Board and its relations with the Treasury. On exchange market operational matters, there was a relationship between the Treasury and the Federal Reserve, and you had the New York Fed conducting the operations; it was a triangle.

When I arrived here, a lot of the authority was in New York, at least when the policy switch was turned on to operate in the market. New York tended to lecture Washington, saying

we didn't know or understand what they were doing, whether they were talking about the Treasury Department or the Federal Reserve Board. There were a lot of tensions between the Federal Reserve Bank of New York and both the Treasury and the Federal Reserve. It is not, I think, entirely an accident that Charlie Coombs's memoir never mentions Paul Volcker by name. He appears once, as the Under Secretary of the Treasury, but only by title. That was I think illustrative of the problem. The other source of tension was that Arthur Burns, for his own reasons whatever they were, as I alluded to earlier, very much felt that it was not in the interest of, let me say, the country, or maybe the narrow interest of the Board, to have the Federal Reserve Bank of New York on a long leash in this area. And so, he made considerable effort over time, including via the procedural instructions themselves that were adopted under him, to shorten that leash.

There were increasingly frequent conversations among the Board staff, the Chairman, and the Treasury Secretary, or the Chairman and the Under Secretary or myself, or other senior people at the Treasury, about exchange market intervention operations—in particular in the later period when operations were more spasmodic under the Clinton Administration, when there were fewer than 20 days of intervention. That was a great number of operations, relative to the frequency of intervention during the next eight years (during the George W. Bush Administrartion), when there were no operations, but it was small relative to the earlier periods. And increasingly it became an issue for the Board (Chairman and staff) and Treasury to talk about whether intervention was appropriate, rather than the initiative coming from the FRB of New York.

The volume of technical advice coming from New York partly reflected changes in personalities. In terms of staff overseeing foreign exchange operations, Sam Cross replaced

Scott Pardee who replaced Alan Holmes, who was a great improvement over Coombs in terms of conducting an open dialogue. Then there was Bill McDonough, who succeeded Sam and later became president of the Bank. He did not feel that his role was to be calling the shots on foreign exchange market intervention. There also was the internal debate here at the Board about where work on this topic should be located. It had always been in the IF division.

On November 1, 1978, I received a memo that said the coverage of foreign exchange market operations was to be transferred from IF to the Office of Staff Director for Monetary and Financial Policy headed by Steve Axilrod. This transfer without prior consultation or notice annoyed me greatly. But, there was logic in the move; it centralized monetary policy. Both foreign and domestic operations are all under the FOMC, and monetary and financial policies were centralized. So, there was logic there, which is the way I have always assumed Steve sold the reorganization to Chairman Miller. But there also was a certain amount of turf involved. Like anybody else who worries about his turf, I felt diminished. The daily morning call, involving the foreign exchange market, between the New York Desk and Board staff but not including the Treasury, was transferred to Steve's office. He was polite in working with us and we worked together reasonably well. Sometimes he would write a memo to the Chairman on the subject of foreign exchange intervention and propose that a memo should be sent to the Treasury Secretary. This was under Volcker during the Regan years. When Steve left and things were reorganized, I managed to have the function transferred back to IF, and it is fair to say that Don Kohn was not pleased. That has to do with turf and the relationship among the divisions. When the Division of Monetary Affairs was created, you had a three-ring circus, as I noted earlier. There was a certain amount of healthy tension and competition among the three divisions, along with a limited amount of turf battles. Though, as I think I said the other day, I saw the division

director's role to try to control that tension, as some of our colleagues would get into verbal fisticuffs with their counterparts in the other divisions.

Board's Overall Role in International Matters

I had the reputation of having expeience in dealing with a lot of international crises. I never quite knew whether I was cause or effect, nor did anybody else.

IF had an important role within the Federal Reserve structure, the FOMC structure, the monetary policy operations of the Federal Reserve and, to some extent, other aspects of Board operations, such as interactions with Legal and BS&R. But unlike on monetary policy, where in most respects the Federal Reserve's authority is absolute, in the international area, the Fed does not have much real power or authority in the area of foreign economic policy. The Chairman traditionally is the alternate governor of the IMF, confirmed by the Senate, and is one of the G-10 central bank governors. The group of G-10 central bank governors and finance ministers was set up in the context of the GAB creation in early 1960s.

We also had an interest in relations with international institutions—the OECD, the BIS, the IMF, and less so with the World Bank. Periodically, we were involved in international economic policy. For example, Chairman Burns was quite interested in trade policy and, consequently, related analytical and factual questions would come to us. We interacted with the Treasury Department, as it is responsible for international financial policy in the executive branch, and to a lesser extent with the State Department. We had an arm's-length relationship with the intelligence community; I always called that community "our friends across the river." But we didn't have much actual authority over international economic policy, which meant that our primary role was that of an adviser. Nonetheless, international economic policy importantly affected the international environment in which the Federal Reserve operated.

MR. SMALL. The Federal Reserve was a formal member of the BIS (Bank for International Settlements)?

MR. TRUMAN. The Fed was not a BIS member until 1994. That's a separate topic.

We participated in BIS and OECD meetings, and some meetings at the OECD involved R&S. In particular, the director of R&S at least for a time was the vice chairman of the OECD's Committee on Financial Markets. But that committee was probably less important in terms of policy dialogue than the OECD's Economic Policy Committee (EPC) at that time. Usually a Fed Governor and sometimes a senior staff person attended the EPC meetings. (I did on occasion when I was otherwise in Paris.) Traditionally, when I arrived in 1972, the IF director had represented the Board at Working Party 3, which technically is a subcommittee of the EPC at the OECD (made up of the G-10 countries, essentially). Representation alternated back and forth. Henry Wallich wanted to do it, and did so for a while. Then he stopped, and I did it for a while. Then, just before I left, Alice Rivlin got herself appointed to this role, and I attended as Rivlin's backup. But for much of that period I was, on and off, the representative of the Federal Reserve at WP-3 meetings at the OECD. We also participated in meetings of other so-called working parties and other groups at the OECD, but those groups rarely involved representation at the level of a Governor or a division director. So, we were involved to some degree in representing the Board in international meetings.

There was one qualification to my statement about the nature of FRB and IF involvement in international economic policy issues—that is banking. (It was not primarily on my watch in IF, but the division played a substantial role in the drafting of the International Banking Act of 1978 and the thinking behind it.) Foreign banks in the United States needed approval from the Federal Reserve to operate, and we in IF had some role from time to time in the granting of such

approvals. But this influence was small relative to that of the legal and supervisory areas. It was not as if IF had sole responsibility or even primary responsibility for much in the area of international economic policy affecting banks.

It should be noted that there was the Euro-currency Standing Committee at the BIS, now known as the Committee on the Global Financial System (CGFS) once the euro became a currency. It was started in 1971 and was concerned about the Eurocurrency markets and their influence over monetary policies and developments. It was the forum that took the lead in coordinating the collection of international banking statistics and instituting changes in those data collection efforts. Initially, Henry Wallich was our representative. When he no longer could do it in the mid-1980s, I started going and that continued until I left in 1998. The Committee was the first and, for a long time, the only forum that discussed what are now known as macro-prudential issues. More recently, the stature of the CGFS has increased and Federal Reserve Board members such as Roger Ferguson and Don Kohn have chaired it. That is an illustration of how the world has changed.

MR. PROMISEL. There was also a group of monetary experts that met at the OECD. Steve Axilrod and Don Kohn, when he was on the staff, went to those meetings a lot.

MR. TRUMAN. Those meetings were partly a way for the OECD to get its hand in monetary policy. My point is that we in IF were involved with the CEA, Treasury, and occasionally with the White House, the State Department, the IMF, and the BIS. We covered a wide range of issues and institutions. That’s some background for our involvement in various international economic and financial crises.

International Economic and Financial Crises

It's probably useful to think about international economic and financial crises as a progression. The crises of the mid-1970s, in Italy, Mexico, and the United Kingdom, were traditional foreign exchange crises.[30] The governments of those countries had not borrowed extensively in the private international capital markets and their private sectors also did not have a lot of cross-border liabilities. The countries had current account deficits that were not sufficiently financed by net capital inflows; this put pressure on their exchange rates and foreign exchange reserves used to defend those exchange rates. The policy prescription typically involved adjustments in economic policies to eliminate the current accout deficits and financing the government so it could intervene in the foreign exchange market and defend its fixed exchange rate, which in some cases had been devalued. There was a special feature in the British case involving holdings of sterling balances, which threated to run off. The Italian crisis in the mid-1970s was more classic as they ran out of reserves, even though it was not reserves that they were using to pay off debt, but reserves that they were using to defend the lira in the foreign exchange market.

In the latter half of the 1970s and into the early 1980s, many of what we now call emerging market countries—increasingly the sovereigns—borrowed on international capital markets, especially from banks via syndicated lending at low interest rates. Few foreign-currency bonds were issued by emerging market countries in that period; that was the province of developed countries and their corporates. Originating banks would syndicate these loans, or

[30] Our interview did not cover these early crises in much detail, but for the record we were very much involved in the U.K. crisis in 1976 in part because of the importance of that country, its remaining sterling balances held by other countries, and the "special relationship." In some respects, our, or at least my, involvement in the Mexican crisis was even more intense. Yves Maroni and I prepared many papers for Chairman Burns on the subject. It was on the job training for me, and I suspect I did well enough that in mid-1977, Chairman Burns recommended that I be appointed Division Director.

pieces of them, to other banks around the world. Most of the loans were floating rate notes tied to LIBOR and expressed in dollars. LIBOR tended to be at zero, if not negative, in real terms, because U.S. inflation was creeping up. As you might guess, the incentives were all to borrow, and many emerging market countries did so, in an environment in which they also had fixed exchange rates almost exclusively.

In the 1990s, things were more complicated. Domestic banks were borrowing (often U.S. dollars) from foreign banks, but there was also a lot more external borrowing by private debtors in the countries involved, and a lot more international bond market issuance by sovereigns. By the time you got to the Mexican crisis in the mid-1990s and the Asian financial crises at the end of the decade, you had borrowing abroad by both the public and private sectors, in varying degrees. And the borrowing wasn't all from banks; a lot of it was in the capital markets. That changed the character of the crises: they went from being foreign exchange crises in the 1970s, to sovereign debt crises in the 1980s—where the sovereign debt was owed principally to foreign banks—to widespread debt for the country as a whole, sometimes, but not always involving the sovereign, in the late 1990s.

In the wake of the oil shock and related small-scale crises in the mid-1970s, for example in Mexico in 1976, there was some recognition that these debts to banks were building up. There was pressure from the Congress about international lending exposures. People at the Board, including some in IF, started to think about collecting data not just on a balance-of-payments basis (flows across our border), which were data on banks located in the United States and their claims and liabilities abroad, but also data on the consolidated claims of both individual U.S. banks and U.S. banks as a group on individual countries abroad. For example, we needed to

follow loans from Citibank to Mexico, whether they were booked in New York, London, or the Cayman Islands.

The system was set up in the United States in the late 1970s. It was what was called the Country Exposure Lending Survey. It was designed as a supervisory tool to monitor the international lending activities on a consolidated basis, in light of the problems that had emerged on a small scale in the mid-1970s. The United States was among the first to set up this system, and we gradually convinced other major countries to follow suit.

MR. SMALL. Where did the push for this come from?

MR. TRUMAN. It came from the small-scale 1970s crises.

MR. SMALL. From Arthur Burns?

MR. TRUMAN. No, in fact, it came in part from the Congress, from Senator Frank Church (D-ID) and people who were worried about these 1970s-style crises. We had American financial institutions lending abroad, and we did not have adequate data about their loans, which could affect the stability of our financial system.

MS. JOHNSON. The oil shocks had come along by this point. The initial response to the first oil-price shock was to think that the world system can't possibly handle this. What's going to happen? Then people realized that the recipients of these now much larger flows of payments for their oil had to do something with their new assets. They had to hold some form of a convertible currency. So, it turns out that they had to hold the same ones as everybody else held. What did they do with them? They put them in banks. Initially, it was viewed as a good thing: banks lending these dollars, and perhaps other currencies too, back to the countries who were now struggling to pay their oil bills. It was the way we kept the world together. But there were lots of worries in the air from the very beginning about what the oil price was doing, what

the cost was doing to everybody, especially small poor countries, what it was doing to the stability of the financial system. It wasn't like everything was hunky-dory and suddenly this problem arose. It was in a world full of problems.

MR. TRUMAN. The positive way of putting it is that funds were being recycled. The negative way of putting it, which actually was a concern of Burns, is that the flows were coming into U.S. banks. The U.S. banks in particular were lending them out to other countries. So, the credit risk lay with our institutions. Even though we (the U.S. banks) had an asset, we also had a liability that did not match the corresponding asset and which we, the country, were going to have to pay, or for which we were potentially at risk. Moreover, Burns had a version of that scenario that was not particularly attractive. He didn't trust OPEC. Political motives could get involved. We would end up on the short end of the stick. (For the record, the simple story that OPEC put its surplus in foreign banks and that continued to fuel a lending spree by banks for years and years is incorrect. Initially there was a build-up of OPEC deposits in "western" banks but after a couple of years those deposits declined while the lending continued to increase.)

Burns was concerned about the U.S. financial system, broadly defined, acting as an intermediary in this process. Once the 1979 change in operating procedure came along, dollar interest rates went up in nominal terms and in real terms, and the global economy slowed down, as IF had projected in a presentation to the FOMC. The crisis gradually came to a head in 1982, but there was a hiccup—to use one of Paul Volcker's favorite words—for Brazil in late 1980 or early 1981. Brazil had trouble refinancing its debt to foreign banks but got through it. Brazil had cut back spending, tightened its belt, reduced its needs for international borrowing, and was back in the market within six months or so. This experience colored the initial phase of the subsequent crisis.

1982 Mexican Financial Crisis

Mexico was a more severe problem, partly because of how its political system operated. Mexico had a severe case of the political-business-cycle syndrome because the way the PRI candidate for president got elected for one six-year term was for the incumbent president to pump up spending in the period leading up to the election—which the PRI-candidate always won, usually by 70 or 80 percent. So, it was not an accident that there was a devaluation of the peso and a crisis in 1976, an election year. The previous devaluation had been in 1954. In 1982, there was another presidential election coming up. The PRI leadership was at least sensible enough so that they often designated a candidate in advance. Lopez Portillo was the current president, and Miguel de la Madrid was designated as the successor candidate. Mexico often changed the finance minister at the time the new candidate was designated, and so in March 1982, they changed the finance minister to Jesus Silva Herzog, and changed the central bank governor of the time to Miguel Mancera.

It was pretty clear at that point that economic and financial conditions were getting dicey. The Bank of Mexico and the finance ministry contacted us and the Treasury and visited us regularly to give us updates about their plans and concerns. These meetings were held usually on Friday, and they had lunch here at the Board with the Chairman. Mexico had introduced a small devaluation in February, so it was a question of how they were going to make it through to the election, which was in July, and to the inauguration of the new president, which was in December. They had a long transition.

From the periodic updates by the Mexicans, it was pretty clear that the Mexican situation was likely to end in a crisis of some sort. In April 1982, Volcker went to a BIS meeting, and he took me along. This was a case when he took me along because there was something important

and I could be helpful to him. Volcker rarely went to BIS meetings; normally Henry Wallich went. At the dinner with the G-10 governors, Volcker said that there was likely to be a problem. He told them that, in his view, Mexico was skating on thin ice, and that it could be a serious problem.

Through that period in the first half of 1982 when the Mexicans were having trouble, Mexican law required the Bank of Mexico to hold a certain amount of foreign exchange in order to back its currency. But currency demand was going up and holdings of foreign exchange were going down. At the request of the Bank of Mexico, the FOMC periodically would approve a swap drawing in which the Bank would be able to draw on the swap line and deposit the proceeds overnight at the Federal Reserve Bank of New York. In effect, this process would lock up the proceeds of the swap overnight at the end of the month when the check on the backing was made. The backing requirement was in terms of gross holdings of foreign exchange rather than net holdings. There were a number of these window dressing swap arrangements that occurred in the winter, spring, and early summer. In today's world, the FOMC's approvals of these window-dressing drawings, described in the Manager's report as meeting Mexico's liquidity needs, would be frowned upon. But the world was different in 1982. Then, in July, there was another request, and it was pretty clear at that time that Mexico might come to us and want to have a real drawing not just a window-dressing operation, which was discussed at the July FOMC meeting. The drawing was approved in principle, but Mexico ended up not asking for it.

MR. MARQUEZ. It was July.

MR. TRUMAN. Yes, but Mexico asked for a real drawing a few days later, and that opened a new chapter. The Federal Reserve, with the Treasury's agreement, offered Mexico a

drawing on the swap line, with the understanding that, if it was not able to repay, it would go to the Fund to get a program to repay. This offer was made and accepted with the knowledge of the Treasury, who had its own swap line with Mexico, but Treasury had tighter restrictions on its use than we did on ours. In fact, Treasury gave us a comfort letter, saying that they approved and would in effect bail us out if the Mexicans did not comply.

A few days later, in early August 1982, Mexico called and indicated to us that the country was in desperate straits. That gave rise to the Mexican Weekend. There were two sides to this development. In the short run, the U.S. government scrambled to put together a support package as best it could—enlargement of our swap line, drawing on the Treasury swap line, some assistance through the Commodity Credit Corporation, something from the Ex-Im Bank, and a forward purchase of oil for the U.S. strategic petroleum reserve. That was the short-term effort. The longer-term effort involved mounting a multilateral support swap arrangement to bridge to an IMF program, which by then Mexico had agreed to go negotiate. Part of this longer-term strategy involved managing, along with Treasury, relations with Mexico, and helping to coordinate this bridging arrangement to the IMF program, which involved the BIS.[31]

I remember calling the deputy governor of the Bank of Japan and saying, "Mexico is in big trouble." He said, "It doesn't affect us." I said, "That's not true. Go look at your data and see how large the exposure of Japanese banks is to Mexico." There were some data available through the BIS collection process, but they understated exposures of the various national banking systems. They were the balance-of-payments type of figures, based on the residence of the bank, but they were figures, and they revealed that every major industrial country's banks had a substantial exposure to Mexico. We were the largest, probably 40 percent of the total, but

[31] The BIS coordinated the participation of other major countries to backstop the BIS in a facility that was parallel and linked to the U.S. facility.

it was clear that, if Mexico was unable to repay its loans, it was going to be a severe shock to all major banking systems around the world, not just to U.S. banks, just as Volcker had warned the G-10 governors in April. As a result, other governments and central banks had an incentive to participate in this bridging operation.

Mike Bradfield, the Board's general counsel, and other members of the legal staff constructed a multilateral swap arrangement backstopped by oil receivables or at least by the flow of payments for oil through the Federal Reserve Bank of New York. It wasn't really collateral, but it added some assurance of the means of repayment. The questions were: whether that was going to work and whether anybody would ever pull that trigger to divert payments for Mexican oil from Mexico's account to the account of the creditor central banks. Many of us worked long and hard over this, often pulling all-nighters just to get the agreement in place.

While the IMF was trying to put together an economic program for Mexico, the outgoing president of Mexico gave his annual address in which, to our shock and surprise, he slapped on exchange controls and nationalized all the banks. He also fired the central bank governor (Mancera), but Silva Herzog (the finance minister) decided to stay. The president brought in a new central bank governor with a bent that we today would call left-wing radical (Carlos Tello). The country lurched in the direction of socialism, but the Fund did conclude some negotiations, and the president began to back off. The incoming president, Miguel de la Madrid, brought back Migel Mancera as the cental bank governor, and a more conventional approach to managing the crisis was put in place.

The Volcker Plan

Mexico was just the start of the crisis period. External financial crises followed in Argentina, Brazil, and Eastern Europe (which was not a big deal in those days and to some

extent had crises before Mexico). Volcker decided about the first of November that we needed to have a systematic approach to these problems. Because I was involved in the Jurgensen group discussing foreign exchange intervention and was off in some far corner of the world in a meeting, Volcker worked with others—including importantly Charlie Siegman—to draft what became known as the Volcker Plan.

The Volcker Plan systematized the existing approach: bridge loans from the major countries, IMF programs, and support from the private international banks. It was truly a global debt crisis. My sense at the time was that Yugoslavia and the Philippines were included because the former was closely linked to European banks and the latter to Japanese banks. The response to the crisis reflected the dedication of the staff in general, and of the IF staff in particular. Our colleague Charlie Siegman is an Orthodox Jew and, on winter weekends, he would leave early so he could be home before sundown. He didn't drive on the Sabbath, but he would go back to work on Saturday evenings if he needed to. So, in order to keep working on this particular weekend, he spent Friday night at the Board and worked with Volcker on Saturday without having to leave the Board. I offered him my office with its three-cushion couch, but Charlie is modest and undemanding and was content with the two-cushion couch in his own office.

Volcker took his plan to the White House on Monday or Tuesday of that next week. They blessed it and the plan went forward with Treasury's involvement. There was a certain amount of tension because Don Regan and Beryl Sprinkel were not as convinced of the importance of this matter as was Volcker. (Sprinkel said all the countries needed to do is to control their money supplies.) But the Treasury staff was convinced. In particular, Tom Leddy who was a deputy assistant secretary, and Tim McNamar, who was the Deputy Secretary at that time, increasingly got involved in these issues. The same pattern played out for a number of

countries: Mexico, Brazil, Argentina, Venezuela, and, Yugoslavia, and the Philippines. It was helpful that Yugoslavia was a European candidate and that the Philippines was an Asian candidate for treatment under the Volcker Plan: It was a way of saying we're all in this together. We didn't go off and offer them the chance to sign up for the Volcker Plan, but they ended up self-qualifying for it.

Afterwards, there were a bunch of other countries that came along. It was all basically the same. Then, once you had an IMF program agreed to, there usually was not enough money available from the IMF to cover the debt payments immediately coming due—an important point that I forgot to mention. Part of the overall pattern in the Mexican deal was, after the Mexican Weekend, to call immediately on the banks—the private sector lenders—to suspend their insistence on principal repayment as long as the Mexican government was continuing to meet its interest payments. Then the principal payments were renegotiated as part of the financing of the package. But the Fund didn't want to go forward with its part of the package until this debt restructuring was in place, which involved getting banks around the world to agree to the restructuring and often to put up new loans. It turned out that Brazil had even more banks with loans to it than Mexico. I don't recall what the number for Mexico was, but I know that, in the case of Brazil, it was about 500 banks around the world in countries that you barely knew about and certainly names of banks you never heard of.

It wasn't generally the case that the 79th largest bank in the United States was threatened by default by Mexico or all these countries together. But it was true that the largest banks in the United States were collectively threatened by default, and that all the largest banks in the world were threatened by default. In other words, if debtors stopped payment, and these banks had to

write down the debts owed to them to zero, at least temporarily, they would be technically insolvent.

MR. SMALL. If you're worried about moral hazard coming out of all this, how much of a hit did the banks take?

MR. TRUMAN. Nothing initially, because they participated in the debt restructuring. They signed up to the restructuring and agreed to advance additional money, but it was sometimes a little painful getting them all to agree. There was a certain amount of moral suasion needed to persuade the banks to do the restructuring and to participate in the new money exercises.

The banks organized themselves. They had committees representing the major banking systems around the world—Japan, the United Kingdom, Germany, France, Switzerland, and the United States. Not all of the countries at the outset, but in the end, it turned out that almost all of committees would one way or another be organized by Citibank and Bill Rhodes. Rhodes turned out to be a master at this game, partly because he was persuasive, partly because he had a big Rolodex with all the right people's names in it. In the initial phase, it was not at all difficult to get the largest banks to participate because it was in their self-interest, and we helped solve the collective action problem for them by saying "We've already put in some upfront money, in the form of swaps and bridge loans. We're going to put money into and through the international financial institutions. This is your part—but, of course, the choice is yours." So, part of the moral hazard question was conveying that "you're in this too," rather than taking your money and running; you at least have to keep these loans on your books. It was not a bank bailout; the banks wanted to get out, but with our moral support, their peers, who had sold pieces of the loans to the smaller banks, would not let them out.

MR. SMALL. After the fact, a critic now could say—

MR. TRUMAN. They did at the time say that this was a bank bailout and we were creating moral hazard by rescuing the countries. Quite frankly, I was never convinced that any lender lent or borrower borrowed in anticipation that it would be bailed out by the public sector. This is why I'm not disturbed or surprised by anything that has been going on in 2008 and 2009 in terms of bank rescues.

MS. JOHNSON. Not to mention 1995 and 1997, when people said you blew it.

MR. TRUMAN. Well, in 1995 and 1997 it was principally not the banks that were the lenders. That's the point about how the crises differed.

MS. JOHNSON. But the bailout notion and the role of the IMF and whether you should force countries into bankruptcy or forced debt reductions rather than bailing them out all came back to haunt the subsequent discussions and crises.

MR. TRUMAN. What came to be known in the Asian crisis as the issue of "private sector involvement" was addressed in the 1980s in the first instance by saying, "You're participating in this by rescheduling on the one hand and committing to new loans on the other." In other words, there was new money and the old loans were rescheduled, stretching them out initially for a year and then, later on, in a multiyear rescheduling. Through complicated negotiations, which I'm sure Paul Volcker explained in his interview, the agreements ended up as loans at the magic interest-rate number of LIBOR plus 13/16, which was a compromise between 12/16 and 14/16 and became the standard. Banks provided new money and they were adding to their exposures. Now, some banks snuck out and didn't participate, so in effect they got bought out. But initially almost every institution did participate in a pretty big way though it

was painful; no one wanted to get back into this lending business right away, which is why the later crises took a different form.

And the other side, which is probably relevant to today though impossible to replicate, is that there was regulatory forbearance. The accountants were persuaded that, as long as these countries were meeting their obligations, rescheduling was not an event of default. Banks didn't have to put these transactions in a special category, and we didn't insist that they immediately go out and increase their reserves against these loans.

MR. SMALL. It was not marked to market?

MR. TRUMAN. There wasn't a market. An informal market developed later on. There developed a secondary loan market for these bank claims. But initially there was not a market.

MR. PROMISEL. Forget mark-to-market: There was no fair value accounting for banks.

MR. TRUMAN. That's right. Later on, there was a secondary market for this bank debt, but not at the start and never with any clear rules. And then after the market developed, there were people who said that the banks should mark to market—the same debates as we have today (2009). The problem was that these were essentially exit sales on the one hand and vulture purchases on the other hand. It was not a true market, although there was, no doubt, regulatory forbearance that supported some prices.

MR. SMALL. Regulatory forbearance supported by Chairman Volcker?

MR. TRUMAN. Led by Chairman Volcker.

MS. JOHNSON. And other major central bank heads.

MR. TRUMAN. But particularly Volcker. Volcker corralled the other bank regulatory agencies—the FDIC and the OCC—into signing joint letters reflecting the interpretation of the authorities that banks would not be required to write down their claims. In November 1982, he

gave a speech in which he declared the position of the regulators, including a paragraph that was cleared with the chairman of the FDIC and the Comptroller of the Currency. They didn't really like it, but it was cleared, at least loosely speaking—i.e., they saw it before he said it and in principle had an opportunity to object. The speech was about attitude. The realistic concern was that the world was in the middle of a recession. If you want to put it in today's terms: Should a financial crisis affecting all the major banks in the world be allowed to further adversely affect economic activity and growth throughout the world?

The world was then much more banking system oriented than capital markets oriented. The potential was there to make things a lot worse. This was a case in which macro policy influenced regulatory policy, though people today tend to think about macro-prudential policy the other way around. Most regulators in that environment had an instinct that these were bad loans. The macro prudential consequences of marking down these loans were not absorbed by the green eyeshade regulator who's saying my job is to make sure this particular institution at the micro level is honest about its books.

The Baker and Brady Plans

Things didn't get a lot better in the second round. The second round started when Jim Baker took over as Secretary of the Treasury in 1985. Generally, he was much more involved in international economic policy issues than Regan was. Baker thought that it was time to have a more comprehensive approach to this problem because it was going to last for a while, and Volcker agreed with that. Baker came up with a plan, with our advice, but we were much more a consultant rather than a leader on the Baker Plan. It was a restart of the process involving restructurings, new money commitments, and greater involvement of the World Bank in terms of establishing the conditions for long-term growth.

There was considerable tension between the Treasury and Federal Reserve in the development of this plan. The Baker-Mulford Treasury was not 100 percent comfortable with the leadership role the Federal Reserve had played initially in the global debt crisis, and they were prepared to go on their own. At the end of September 1985, Baker unveiled his plan at the IMF meetings in Korea. At the last minute, they gave us a copy of the speech and Volcker worked on it on the plane on the way over. He then handed it to me to transmit it back to the Treasury. Of course, the Treasury Department couldn't read Volcker's handwriting. I tried to transcribe it using a primitive word processor. I didn't do very well, but it was mostly done in time. I then tried to participate in the redrafting of the speech, at which point Mr. Mulford threw me out of the room.

So, the Baker Plan was much more a Treasury initiative than was the Volcker plan. The Federal Reserve was not against it, but we had our own views about how one talked about these issues. The problem with the Treasury's plan was that they, and we, wanted to start off again with Mexico as the model. Then Mexico had an earthquake setback, and next the oil price collapsed, as we discussed earlier. Figuring out what the financial needs of Mexico were with the oil price going back down to $13 a barrel—and the price of Mexican oil was even lower than that—was a problem. So, they were not ready to step up to the plate. As a result, the Baker Plan, which actually covered 15 to 17 countries around the world, including countries that you don't today even think of as being major international borrowers—such as the Ivory Coast—never quite got the traction that was intended.

This led to chapter three—namely, the Brady Plan, elements of which had been put forward by the Japanese at the annual meetings in Berlin in 1988. The Miyazawa plan involved the partial guarantee and write-down of debts. The U.S. position at the time was against debt

forgiveness on the grounds that doing so would inhibit subsequent access to commercial bank financing from abroad.

Mulford wrote a masterful denunciation of the Japanese proposal for Secretary Brady to deliver in Berlin. (Brady had succeeded Jim Baker as Secretary of the Treasury when Baker left to run Bush's campaign.) Then the Bush Administration came up with a version of the Japanese plan. By that time Alan Greenspan had become the Fed Chairman. He was quite engaged in many of these issues. And there were some other countries that got into trouble again, like Brazil. The Brady Plan involved essentially converting loans into securities after marking down the face value. Under the Brady Plan, banks had had claims on countries, which they replaced with tradable securities that also earned an interest rate. But in order to go through this process, the country had to have an IMF program that qualified it for the plan and international financial support. The securities had up to a 30-year maturity with various combinations of write-downs: either a below-market interest rate, which might have a step-up, or a write-down of the principal value of the loan. The principal was backed by zero-coupon U.S. Treasury securities that were purchased by the relevant country and held, in most cases, at the Federal Reserve Bank of New York. If Mexico did not pay off in the year 2019, then the 30-year bond would mature and the proceeds would be used to retire the principal. These securities were also, in general, backed by a guarantee of payment of up to 18 months of interest, also held at the Federal Reserve Bank of New York. Initially that was the entire plan. We prevailed upon the Treasury to have a broader menu allowing some banks that might want to do so to continue to advance new money in lieu of taking the write-down.

In the ex post analysis—there was a lot done at the Board—it wasn't clear that, relative to the price prevailing by that time for these loans on the secondary loan market—which by that

time had become quite well developed—the countries did any better than if they'd just been able to borrow the money and buy back their debt. The haircut was small, if not nonexistent, relative to the various alternatives. There were some debt buybacks by some countries, but the problem with them is that existence of such a program tended to drive up the price of the debt in the private market. There were also some swaps of debt for equity in public enterprises, which was also a relatively inefficient de facto use of funds.

But the Brady Plan did unlock the process in two respects. One, once a country went through this process, as various countries did, it essentially was able to set its sovereign debt problem aside: That part of its financing needs was taken care of. Two, an international bond market evolved for these countries, for better for worse, which meant that they stopped borrowing from banks and started borrowing on the international capital market. All these pieces of paper said, "and by the way these bonds can't be rescheduled," because the buyers liked that. The original commercial bank loans also, in principle, couldn't be rescheduled as well. And some Brady bonds have been rescheduled!

One important institutional aspect of all this was that the Federal Reserve Bank of New York acted, in most cases, as the agent holding the zero-coupon bonds and the funds guaranteeing interest payments. There was some controversy about whether the Federal Reserve should do this because normally central banks don't get involved in commercial transactions. It's a preplay of some of the debates that have been going on in the last year or so. So, here's the Federal Reserve Bank of New York going out and establishing a long-term relationship with Mexico, for example, raising the question of what kind of liability is the Federal Reserve incurring.

The Legal Division, with input from BS&R (Division of Banking Supervision and Regulation), sent a paper to the Board stating that, because this is foreign activity of the Federal Reserve Bank of New York, the Federal Reserve Act requires Board approval of the Bank's role. So, these plans all had to go through the Board, and the Board laid down in advance certain principles about direct Federal Reserve participation. The main principle was the existence of an IMF program. So, when it came to Brazil, which did its Brady deal without an IMF program, the rule said the FRBNY should not be the principal collateral agent. So, Brazil had to go to the BIS to be its agent. When it came to Nigeria, I was very suspicious about the honesty of the Nigerians. I didn't want the Federal Reserve involved in dealings with Nigeria. My views prevailed, and we let the Bank of England do that one.

It was a complicated problem because here we were in principle committing the System to do something that was ultimately going to be paid off when we're all dead, or at least many of us who were involved would be dead. At a minimum, we would have been retired for a large number of years. Subsequently, most of these Brady bonds have been bought back in one form or another prior to maturity, releasing the collateral.

The International Lending Supervision Act of 1983

Coming back to what Karen said about the brouhaha in the early 1980s, the controversies were huge partly because the plan involved an increase in quotas in the IMF. Sound familiar—like the London summit of 2009? The GAB was enlarged and the arrangement was changed so that it could be used to lend to the IMF not only for progams for GAB participants but also for other countries such as Mexico and Brazil; this was a very hard swallow for some. We had a Democratic Congress, a Republican Administration, and a country in recession (or just coming out of one) in the fall of 1983. The only way to get legislation through the House Banking

Committee was to attach it to a housing bill and have a chapter titled the International Lending Supervision Act of 1983 (ILSA). The Administration agreed to swallow that even though it didn't approve of the housing bill.

One of the issues was that the banks that made these loans received fees for negotiating loans and managing the syndicates; these fees were booked up front, boosting current net income and, as a result, creating the wrong incentives for lenders. ILSA stated that "thou shalt spread the fees over the life of the loan." It sounds familiar when you put it that way. Second, ILSA called upon the Chairman of the Federal Reserve and the Secretary of the Treasury to open negotiations with major foreign financial authorities on creating and raising international capital standards, which ended up being Basel I. Both of those provisions mandated reforms.

The important reform ended up being the Basel capital standard because one of the views was that banks, going into the crisis, had inadequate capital to absorb these risks. Also, there was this "level playing field" aspect—in particular with regard to the Japanese banks—which had next to nothing in capital. Or at least that was the way we perceived it.

MR. SMALL. But these Brady bonds seem to have sped up putting the new debt into the open markets, making the problem worse the next time you—

MS. JOHNSON. No, no. At the time, while the Fed is doing all these things to solve the problem, and the Treasury and the other central banks were working on the problems, the whole world is talking about much wider-ranging aspects of this. There were academics who were urging the indebted developing countries to default.

MR. TRUMAN. And some did.

MS. JOHNSON. Some did. The IMF was becoming the world's enforcer and there were demonstrations against it.

MR. TRUMAN. Debt collector.

MS. JOHNSON. So part of the reason an IMF program was put in as a precondition for a Brady deal was because it contained reforms of policies in the country in question. Fundamentally, people believed that the reason this crisis happened is that nobody had fully adjusted to the change in the world's oil price, that these countries used borrowing to take the place of economic adjustment. Here's another echo of some of the current problems. And look where it got us. So, the IMF's role was to correct the fundamentals by pushing changes in policy onto the indebted countries and extracting their pound of flesh that way while we were being so "generous" with new financing.

MR. TRUMAN. It was called "conditionality" and—if you think about it—it was dealing partly with the moral hazard question.

MS. JOHNSON. Yes. It was because no country would ever voluntarily submit to it.

MR. TRUMAN. Because most of these countries had large current account deficits and fixed exchange rates, they had to adjust. That is, they had to adjust their macro policies to have smaller fiscal deficits and smaller external deficits, along with a tightening of monetary policy and, although it wasn't always insisted upon, to have in the future a more flexible exchange rate regime. That was less of a feature of the post-1980s crisis than it was the next one. So, there were economic reform elements that were involved in the Mexican crisis in the mid-1990s as well as the 1997-98 Asian crises.

And looked at from the perspective of today, I like to argue, and I think it's fundamentally correct, that the 1980s debt crisis was the crisis that was closest to what we've gone through since 2007. It occurred in the context of a global recession. It was, in some important respects, made in the United States through macroeconomic mistakes of U.S. policy.

In the 1970s, we allowed inflation to get too high and had to put our economy through the wringer of a disinflation process via a recession that along with our high interest rates impacted the rest of the world. It was made in the United States by the excesses of the financial system. And in the face of the global slowdown, these other countries in the 1980s had no capacity to run easier monetary policies, or to run easier fiscal policies to try to cushion the effects. One result of what has happened over the intervening 20 years is that when these countries got to 2007 and 2008, they had a lot more room to maneuver in monetary and fiscal policy and more flexibility in their exchange rate. So, that if they could tolerate it, they could let their exchange rates adjust down or up, particularly down—and had more of an own shock absorber for the crisis, which is much more global in its nature this time around. All these reforms started in the 1980s and those countries were much better prepared for the crisis of the 2000s as a result of the experience.

MS. JOHNSON. U.S. academics in particular reveled in the broader debate. There were some macro-international economists who made their fame from the 1980s debt crisis. There was a feeling among some that the reason the debate had taken on the character it had, and the reason it became such a difficult public policy problem, was because the crisis threatened the banking system.

People remembered back to the 19th century and said to themselves well what happened in the 19th century is that there were lots of bonds: American railroad bonds, and Argentine bonds floated in London, defaulted all the time. Hardly anybody got their money back from buying those goofball bonds in the 19th century. There were lots of crises and defaults. But the markets themselves handled those crises. You didn't have central banks and you didn't have rescues.

How come we have to have all this now? Why is the American taxpayer having to pay now? And the answer was, because the banking system was threatened. A few argued that if only the borrowing had been done more broadly and in the capital market and had been less bank-intensive, we could have just let it happen on its own. We wouldn't have had to do all this rescuing. The borrowers would have taken their lumps and the lenders would have taken their lumps and it wouldn't have had to become a public policy issue.

MR. TRUMAN. A largely unintended consequence was, on the one hand, you had burned the banks, so they were not going to lend as much as they had in the past. On the other hand, you had opened up the capital markets to these sovereign borrowers. Before I came to the Board, I had done some work on the topic of sovereign bond debt with Dick Cooper and written a paper for the UNCTAD (United Nations Conference on Trade and Development). The paper was published in a different form with Dick: The paper, written in the 1960s, looked at the question of the difference between international finance through banks by means of syndicating Euromarket borrowings—which is basically what these things were called, Euro-market borrowings—or through the capital market, given that at that time you had both channels opening up. In the 1960s, there were countries returning to the capital market, as they had before World War II, as well as to the syndicated bank lending market. We went to New York and had a meeting at Goldman Sachs, as I recall, to ask the question of whether you should subsidize a return of borrowers to the capital market through some mechanism at the World Bank. We were told to forget about it: "We're already in the syndicated Euromarket loan business, that's the wave of the future." And they were right.

The period that I had examined with Dick was the 1930s. There were a huge number of defaults on syndicated bond issues and many countries did not get back into the market for

decades. There was a lot of brouhaha in the United States about this, with special laws (that still exist) providing that countries that don't pay their debts can't be eligible for this or that benefit—the Bondholders' Protective Association was active and so forth. The negotiations in the 1920s and 1930s collapsed with large—more than I think scholars in the 1980s realized—global macroeconomic consequences. But Karen is absolutely right that they were saying if the banks were not involved before the crisis of 2007-08, you wouldn't have to do what was done, which I think, in retrospect also might not have been the case, but it would be somewhat easier for the authorities to step aside.

1995 Mexican Crisis

The crisis in Mexico in 1995 was another repeat of 1982 in several respects. The year 1994 was an election year; Mr. Zedillo was elected. (There also had been a smaller crisis in 1988, also an election year.) Again, Mexico had an exchange rate that was out of line, though it was a slowly crawling peg exchange rate, and a growing current account deficit. We thought that Mexico was headed for a problem; Mexico knew that, but its president wasn't willing to acknowledge the problem in advance of the election.

In the fall of 1993, we had been concerned about whether the NAFTA (North American Free Trade Agreement) legislation was going to pass and had constructed, at that time as a contingency, a multilateral swap arrangement in case there was a run on the peso in the context of that vote. NAFTA didn't pass by much. The NAFTA legislation passed the House by 34 votes in 1993. We had the new version of the swap mechanism effectively ready to go, and when the Mexican presidential candidate and presumptive next president, Luis Donaldo Collosio, was assassinated in March and the peso came under pressure, we activated it. The swap line wasn't drawn on, but we announced that it was activated, which provided some

support to the Mexican authorities. Subsequently, we set up another multilateral swap agreement, in July. The condition that we put on its possible use was that, if Mexico had to draw, it would have to adjust its exchange rate policy. Mexico's view was that a drawing meant it had "to think about" adjusting its exchange rate policy. But Mexico never drew, so the different interpretation didn't become relevant.

Mexico largely skated through 1994, which was a period in which the Federal Reserve was raising interest rates. On November 15, 1994, the Fed made a large 75-basis-point move and Mexico made the tactical mistake of not following us, which led to a run on the peso. The Chairman and the Treasury talked with Mexican officials and we considered what the options were. It was decided that Secretary Bentsen should call the finance minister, Pedro Aspe, and say we think you have to devalue, but Aspe said no. We said that it was only a matter of time.

About 10 days later, Larry Summers called me and said, "We said a crisis was going to happen, and nothing's happened." I said, "Just wait." In the middle of December, Mexico did devalue by a fixed amount, which held for about 18 to 36 hours. Mexico said that everything was fine and policies did not have to be otherwise adjusted; in particular, it didn't have to go to the Fund for assistance. By early January, Mexico agreed it had to go to the Fund, but it was a very different crisis from those in the 1980s; a lot of the liabilities were government debt in the form of short-term peso-denominated instruments, called cetes. These were marketable instruments and in 1994 a variation on the cetes began to be issued that were exchange rate-linked; they were called tesobonos. They were denominated in pesos, but their value was indexed to the dollar.

MS. JOHNSON. So, with tesobonos, the Mexican government would make payments in pesos, but it had to pay a peso amount that had been grossed up by the change in the exchange rate.

MR. TRUMAN. Yes. Moreover, after paying off the debt in the peso amount required, the investor could turn around and sell those pesos instantly for dollars in the foreign exchange market, putting further pressure on the exchange rate, and end up with short-term obligations such as U.S. Treasury bills. So, Mexico had much more of a capital market problem than a problem with bank borrowing, though its own banks were also very weak. These marketable instruments, the tesobonos, were held by lots of different institutions.

MR. SMALL. This situation was more robust to shocks because you're borrowing in the capital market—

MR. TRUMAN. That was the logic. Yes, the system was more robust to shocks because the instruments were more widely held. In 1995, Mexico did not pose the threat to the international financial system that it did in 1982; nor did the Asian crisis for that matter. Mexico did pose a threat to the international economy. The Treasury perceived that Mexico had been the poster child—in a positive sense—for economic reform around the world. I perceived that as well and the Chairman agreed.

MS. JOHNSON. Mexico had done everything people had told it to do.

MR. TRUMAN. Well, not quite.

MS. JOHNSON. Listening to the IMF, opening up its markets.

Speaking in this instance to the point Ted made a minute ago about comparing the 1980s events versus those in the 1990s and to the present crisis; the 1980s crisis threatened the U.S. banking system. The 1995 Mexican crisis was a distinct phenomenon so I won't speak to that.

The U.S. economy probably benefited from the Asian crisis in the 1990s, despite our fears and despite many memos written by me entitled worst case, worst-worst case, about what bad things could happen to the United States as a consequence of the Asian financial crisis. However, you want to quibble about the numbers, the United States did not receive anything like a big negative shock from the fact that Asia had a financial crisis, as was thought to be the risk in the 1980s crisis.

MR. TRUMAN. Let me illustrate with a couple of points. There was a big direct hit from the Mexican crisis to the U.S. real economy in 1995. The FOMC recognized that; it was in the process of raising interest rates and stopped. It raised rates for the last time on the 1st of February. Why did the United States step in? Because we saw Mexico as a poster child for economic reform around the world, and the United States had just done NAFTA. Those were the two reasons. And it had some implications for the U.S. economy if things got even worse than they were.

By that time, Jeff Shafer—formerly part of IF, who had left the Board, gone to the Federal Reserve Bank of New York, left the New York Fed, and went to the OECD for about 10 years—had come back as Assistant Secretary of the Treasury for International Affairs under Larry Summers. Jeff called us up, knowing us all well. He said, "Can you write us a worst-case scenario of what happens if we do nothing to help Mexico?" So, we wrote a memo that constructed a worst-case scenario with various dimensions: banking consequences and real economic consequences. We also had a scenario that involved a sequence of defaults and, therefore, macroeconomic consequences for the United States and the world economy. One line in that memo said, "And in the worst-case scenario, the hit to U.S. real GDP could be on the

order of two percentage points," an estimate that we had run through our models. We may not have said "on the order of" but, instead, "could be as much as two percentage points."

The important word that I want to emphasize here is we said "could," because this episode bears on the question about the role of policy analysis. That sentence appears in Bob Woodward's book about the Maestro but with the word "would" not "could," notwithstanding the fact that I had an interview with him and said, "The sentence said 'could.'" Woodward declined to change his text unless I could produce the memo, which I could not because I was then at the Treasury. The memo was designed as a worst-case scenario. And I didn't have any trouble with that. It wasn't exaggerated because it was consistent with the sequence of events that we laid out in that memo. I personally thought it qualified as a worst-case scenario. The memorandum did have something to do with the decision by the Treasury to attempt the Mexican rescue. The memo went to other economic officials in the government including at the White House and CEA as background for a meeting at which a recommendation of the first Mexican rescue was agreed. This was just at the transition between Secretary Bentsen and Secretary Rubin. In fact, Rubin was confirmed by the Senate on the evening of the meeting at which the rescue proposal was decided in January 1995. So, Treasury (Rubin and Summers) went to President Clinton to get his approval. And Treasury announced a proposal to do a loan guarantee for Mexico.

Treasury proposed to get the Congress to approve this guarantee of Mexican government borrowing on the international capital market. It was called a loan guarantee, but really it was a capital market guarantee, following a model that had been used to support Israeli borrowing for housing construction. So, we would provide the guarantees of their debt, but it required an act of Congress to do this.

And for the next 48 hours after the President said yes, Greenspan, Rubin, Larry Summers, and I—as one of the bag carriers—went and consulted with the Congress about this arrangement. Initially the leadership said yes. In fact, what we laid out was $20 billion in loan guarantees and Gingrich, I think, recommended that we double that amount. But ultimately the rank and file in both the House and the Senate said no. This was right after the 1994 congressional election and there was a change in leadership, and the Gingrich revolution in the House. The leadership on both sides of the aisle initially said yes, and they told President Clinton that they supported the proposal. But it turned out they couldn't handle their troops. So, the prospects of this legislation were getting worse and worse. That was in the month of January. We tried the old-fashioned way: We went to the banks to see whether they could put together a syndicated loan for $3 billion, but there was no appetite for doing that. They weren't as exposed as in 1982, but they were involved. Their solvency was not affected or threatened by a Mexican default on the tesobono obligations, but they would have been in a full-blown global financial crisis. The banks did try to line up a loan facility on their own, but it didn't materialize.[32] The Fund came in and was prepared to put in a large program in place, but things were not going well in the Congress at all.

One of the division's contributions was the worst-case memo mentioned earlier. On a flight from a G-7 deputies' meeting in Paris, I also outlined to Summers that there was at least in principle another way to do the Mexican rescue without going to the Congress for approval. I said that if the Treasury wanted to do so, it could use the ESF and have a large swap arrangement with Mexico. On the other hand, the ESF only had a certain amount of dollars in it, roughly $12 billion. We had put on the table a $40 billion loan guarantee program. The Fund was going to

[32] In retrospect, we might have tried to organize a standstill and rollover of the tesobonos as has been done in more recent cases, but as far as I recall no one suggested that and it would have been a novel approach at the time.

put in a program of $7.5 billion. The ESF plus the IMF was only about $20 billion. The ESF had $12 billion of dollar assets in it, but it had $20 billion or so of foreign exchange assets. I said to Larry that, if the FOMC agreed, the ESF could warehouse its extra foreign exchange (not pesos but Japanese yen and German marks) with the Federal Reserve and get dollars: Take the DM or yen and sell them to the Federal Reserve with an agreement to buy them back later. The ESF now would have more U.S. dollars. Then the ESF can lend the dollars to Mexico. That was the second, or third, round of this attempted rescue. Again, the Chairman agreed to this idea without much consultation with the Board.

This phase of the rescue happened very quickly, and things got very messy very fast. The Chairman was scheduled to testify before Senator D'Amato who had turned from positive to negative on the Mexican rescue. Jeff Shafer from Treasury was also testifying, and a State Department official may have been testifying as well. They were sitting in one of those large committee rooms in the Russell office building as I recall. Senator D'Amato was ready to pounce on the Treasury Department, but we knew that the White House was about to announce this change in policy. And the FOMC was going to meet that afternoon. I had made one of the few really intelligent management decisions I made as division director. We had a chart show scheduled, and sometime earlier in January I decided that Peter Hooper should be responsible for it. So at least I was not worrying about that. Outside the hearing room, I was on a cell phone asking, "Has the White House announced the new approach yet?" And as they were waiting to testify, I would go back into the hearing room and whisper in Greenspan's ear, "Not yet, not yet." Eventually, the White House announcement came. Just as some Senators can be when they get on their high horses, D'Amato started by excoriating Jeff for "sending us some mere Assistant Secretary when he had asked the Secretary to testify. This shows the disrespect of the

Treasury Department for the Senate and so forth. You're not worth the clothes you're wearing." Greenspan had pretty good relations with both sides of the aisle. He said, "Mr. Chairman, this is an upstanding servant of the people. Stop slamming on him." The Chairman voluntarily came to Jeff's defense as an individual, and I was very proud of him. The rest of the hearing was a bit of an anti-climax as the entire program had just been changed.

After the hearing, we came back to the FOMC meeting, in which I had to present our part of this new Mexican scheme. The FOMC meeting didn't go well. It was a rare FOMC meeting. Generally, there was no item on the agenda that had not been so thoroughly digested that the outcome of any discussion is largely predetermined. And if it was controversial, Greenspan made sure that he asked the relevant staff, usually Don Kohn, to check with the other Board members and the Reserve Bank presidents to make sure that at least a substantial majority of them were willing to go along. The FOMC process was such that if someone said something to influence policy, it wasn't policy as decided at that meeting, but policy that would be decided at the next meeting or the meeting thereafter. At least that's how I perceived things. At this meeting, something arrived on the agenda with essentially no notice. Consequently, at this two-day meeting you had more free-flowing discussions and debate than any I ever witnessed.

That FOMC meeting reflected in part some philosophical differences and some raw partisan political differences. It was pretty ugly. Part of the discussion was a repeat of the earlier discussion we had about the role of the Federal Reserve in foreign exchange operations—on warehousing. "Why are we doing it for the Treasury? Aren't we making it easier for the Treasury? Is it even legal to warehouse for the Treasury given that we're advancing credit to the Treasury Department?" There were limits on how much we could advance directly to the Treasury in an emergency. At that point, I guess it was $5 billion.

There were also questions about the program and the Federal Reserve's role—reasonable questions, it seemed to me. Not necessarily all the answers were treated by members as reasonable. I gave a briefing on the Treasury's new approach in the afternoon of the first day of the meeting, January 31. Then at the end of the FOMC meeting the next day—this was a pre-Humphrey-Hawkins Monetary Policy Report meeting—the Committee came back to the topic, discussed the program all over again, and finally took a vote on increasing the warehousing from $5 billion to $20 billion. The transcript probably comes close to a record for the most redactions in any transcript that is now, as of December 2009, in the public record. I don't know that for sure—I have no knowledge about what's gone on during the recent period—but up through the ones that were released as of earlier this year, I think this FOMC transcript probably comes close to the most redactions.

A lot of the questions were directed at me personally in pretty harsh terms, in part I was being criticized for facilitating cooperation with the Treasury. And the comments were directed at the Chairman as well, but more indirectly by addressing me. There had been some general briefing materials on Mexico sent to the FOMC in the period leading up to this event. There were also two special conference calls, one at the end of December 1994 and one in mid-January 1995 devoted to the Mexican situation, and we had touched upon the drawings and the swaps in general. So, it wasn't as if the FOMC had been kept entirely in the dark about what was going on in Mexico and what was being planned. Mexico had drawn on the swap line, and I think Karen and Larry had a paper on Mexico that went to the FOMC as background describing what the situation was and how we saw it. But this particular solution to the problem came out of the blue and had not been cleared, largely because it had only been decided 24 hours previously to do it. So, a lot of the criticism was directed at the Chairman for how he had managed relations

with the Administration and the Congress. He spent the month of January on Capitol Hill and, as I said, he was testifying that morning with Jeff Shafer before Senator D'Amato. In some sense, I was used as the scapegoat, a whipping boy. And, well, that's what my job was.

MR. MARQUEZ. So the tension wasn't so much with Mexico as such as it was the apparent loss of independence vis-à-vis the Treasury?

MR. TRUMAN. Yes. I think the controversy had to do with lots of different things. There are Federal Reserve districts—San Francisco, Dallas and Atlanta—which have some exposure to Latin America. I don't remember where Bob McTeer was on this particular case. He may or may not have been in favor, but he was certainly sensitive to the Mexican situation. I think there was a view that "Mexico is none of our business, it shouldn't be any of our business, it compromises our independence, we shouldn't be involved in foreign exchange operations anyway," which also to some degree had to do with compromising our independence. The analogy would be with controversies about some of the things that the Federal Reserve has done over the last 18 months, in 2008-09, in cooperating with the Treasury. We were cooperating with the Treasury and that, in the view of some, was not wise for the Federal Reserve System to do.

Then there were some issues on the substance, including moral hazard concerns: "Let Mexico go. We shouldn't rescue countries as a matter of public policy, whether or not the Federal Reserve is involved." There were two dissents from the decision in the end to increase the potential for warehousing with the ESF, and in the decision temporarily to increase the swap line with the Bank of Mexico—Governor Lindsey and President Meltzer. But most of the FOMC went along with various degrees of holding their noses. Again, it was not that there was no support. Greenspan was there. Bill McDonough was involved in all this. There were other

members of the Board who were reasonably supportive. Alan Blinder was supportive in the end. He had been uncomfortable that he was not much involved in some of these negotiations, and subsequently took his unhappiness out on me. But in that meeting, he was broadly supportive.

MR. SMALL. During the recent financial distress, you heard a lot expressions like "a market freezing up or seizing up," "an elevated risk premium." In 1994 and 1995, a fair amount of the debt was out in the markets. Were there similar precursors of—

MR. TRUMAN. Some, because there were ripples. Argentina ended up in trouble.

MS. JOHNSON. Yes, but there wasn't in that episode—contagion.

MR. TRUMAN. I would say that Argentina was affected by contagion. This was, after all, called the Tequila crisis. In my view, contagion is like the flu; the weaker are affected. Argentina had some policy weaknesses, and it was affected. Indeed, a modest rescue effort was mounted to aid Argentina, and interestingly the Europeans fell over themselves to be supportive despite the fact that many of them were highly critical of what was done for Mexico in the IMF, where the IMF program had been increased by an additional $10 billion as part of the new approach.

Thailand Crisis

MR. TRUMAN. Rather than markets freezing up, there was an increase in risk aversion. It showed up in credit spreads going up. This probably is a nice segue to the next chapter: downward pressure on the Thai baht. I can still hear Larry Summers up there on Capitol Hill during the 1995 Mexico crisis trying to convince Congressmen and Senators saying, "This crisis in Mexico has even increased the pressure on the Thai baht, Mr. Senator, I bet you never knew that the name of Thailand's currency was the baht." Probably Larry didn't know it either until he was told that the Mexican crisis had put pressure on it.

There was considerable pressure on the baht in 1995. Thailand was a country that felt contagion because it had a fixed exchange rate, a current account deficit, and it was living beyond its means in that it was spending at home or abroad more than its income could support on a sustained basis. In 1994 and 1995, Mexico was a classic debt crisis because it was living beyond its means.

MR. SMALL. The current situation seems to be more, "If Mexico goes bad then this guy, somewhere in a totally different market, might be holding Mexican paper, so I can't trust him, and if I can't trust him—"

MS. JOHNSON. In 1998, there was a liquidity crisis in world money markets that was a precursor to what we have experienced now. There was a study done on it.

MR. TRUMAN. In addition, if a crisis triggers an increase in risk aversion toward lending to one emerging market economy or region, it is likely to have spillover effects on other emerging market economies and to a greater extent if their circumstances are similar. On Thailand and Mexico, let's be chronological. The answer is they were not similar to what has been going on in 2007-09: The crisis was in Mexico and not in the United States, so the epicenter was outside the United States. And by applying the tourniquet the way we did, the spread of the crisis was minimized. Then we had the Asian financial crisis, which started, effectively, in 1996. Thailand had a fixed exchange rate for the baht and a large current account deficit. That was a problem. We knew that it was unsustainable and we wrote about it. We had increasingly recognized that Asia was important in the world. I went to meetings with Larry Meyer in the spring of 1997 in Tokyo with five Asian countries at which we and the Treasury said we would like to talk about the problems in Thailand. But the other countries in the meeting were reluctant to talk about Thailand without representatives of that country being present. Tom

Connors continued on with Governor Meyer to a meeting in the Philippines where Thailand was represented. There the U.S. representatives said, "Let's talk about the problems in Thailand," and Thailand said, "We're not talking to anybody." As in Mexico in 1982, this crisis was fully anticipated in policy circles but not fully anticipated in its magnitude. Nonetheless, the fact that there was a high probability that both countries would go over the cliff was well anticipated.

Although the Thailand case was a national financial crisis, with a fixed exchange rate and the country living beyond its means in the sense of an unsustainable external position, the sovereign wasn't directly involved financially. It didn't have a large amount of bonds outstanding, and it didn't borrow extensively as a sovereign in the international financial markets. It was Thai banks and private borrowers in Thailand that were borrowing in the international markets and got the country into problems. And the same was true in Indonesia, and Korea. In Korea, it was largely the domestic banks borrowing from foreign banks, whereas in Thailand and Indonesia, it was predominantly domestic corporate borrowers largely borrowing from foreign banks. There was a variety of participants and instruments—banks and nonbanks, bonds, trade credit, and many other types of credit involved.

The Asian crisis largely involved the private sector. Of course, banking systems in any country are, at a minimum, quasi-public utilities and, in some cases, they're more than that. Sometimes they are government-owned entities. In the case of Thailand, the government offered some partial guarantees to depositors and ended up giving still more guarantees. This raised the question of how much a sovereign can stand behind its banking system and remain credible itself. In that sense, we were dealing with a full-blown financial crisis in the first round in Thailand, which had a different character from earlier crises: Thailand had a fairly large IMF program, it had a certain amount of parallel bilateral lending from other countries, in which we,

the United States, didn't get directly involved. We, the United States, declined to participate because the ESF was still operating under a legislative constraint that, as part of the aftermath of the Mexican crisis, limited the size of its lending without going to the Congress for authorization. We did cheerlead the efforts to organize other regional bilateral lenders.

Korean Crisis

The United States didn't get directly involved financially at all in Thailand and only a little bit involved financially in Korea and Indonesia in the form of what was called the second line of (financial) defense which was never activated. Except for Korea, there was little or no way of organizing the private creditors with claims on private borrowers in the countries because there were too many of them with a diverse nature around the world and they were largely lending to the private sector in the countries in trouble. (There were some efforts made in particular in Indonesia, but they were more like moping up operations than rescue operations.) Korea was an exception because Korea had a relatively closed financial system and most of Korea's foreign exposure was of Korean banks to international banks. Korea was the last of the three countries into the soup, following Thailand and Indonesia and not counting the Philippines, which immediately after the outbreak of the Thai crisis extended its existing IMF program. (Malaysia also had troubles, and consulted with the IMF, but in the end, did not want and did not need IMF support.) Initially, Korea had an IMF program that was thrown together quickly. It did not restore confidence. Consequently, the bleeding continued through the banks; there was also Korean government support for their banks, but that support was not entirely credible.

Tim Geithner, who was then Assistant Secretary of the Treasury for International Affairs, and I had gone to Korea before the start of the Korean program and talked to the authorities. This was a time when they were denying they needed to go to the Fund. We went to see the

central bank governor who explained to us that Korea said it had about $20 billion in reserves, but they actually had only $3 billion because the rest was deposited in Korean banks to replace funding that was withdrawn by foreign banks. We asked the governor why the new finance minister, who had just been appointed, said they didn't have to go to the Fund. The governor told us that it was because the new finance minister had not seen the books yet. Sure enough, 18 hours later the new finance minister had seen the books and convinced the president that they actually did have to go to the Fund and have an IMF program. (This was in the middle of a presidential election campaign in Korea.) It was a little complicated putting together a big program because you couldn't have too fancy a program if the country said it had as much as $20 billion in reserves. (The same problem occurred in Thailand where that country's net foreign exchange position was very small because of large forward sales of foreign exchange that the Thais did not report.)

In any event, the Korean program didn't work because the claims on Korean banks were coming due, Korea was just paying and not adjusting its policies. So, money was coming in from the IMF through the front door and going out through the back door, as it were. In that case, it was pretty clear what could have been done and it was something that Tim and I had recommended for consideration by Alan Greenspan and Bob Rubin before the start of the Korean program. This was a case in which we could have some private sector involvement in the financial solution because we knew where the leak was. We could attempt to put a stopper in that leak and solve the problem. They rejected our idea as too risky in term of triggering runs on other similarly placed countries, such as Bazil, Russia, and Turkey, which in fact did later need international financial support.

In December, in desperation, we went back to our respective principals with that idea again and they then said that it was worth a try. We got the foreign banks to agree to a standstill agreement and then to a rescheduling of the short-term claims on the domestic banks into longer-term claims. I conducted a conference call every day for about three months with other central banks whose banks were involved in Korea, to see whether the foreign banks were living up to their commitments to the standstill.

MS. JOHNSON. This was a collective action—

MR. TRUMAN. Right, it was a collective action problem. But this time you could go to the banks.

MR. SMALL. I thought you said Korea was a closed system.

MR. TRUMAN. The Korean financial system was open only to the banks. There wasn't a lot of buying of Korean equities or domestic Korean bonds by foreign investors, but the one part of the financial system that was open was the Korean banks that borrowed abroad on a short-term basis and operated abroad—they had big operations, including in the United States.

And this was an instance in which the Federal Reserve was well ahead of the problem because Korean banks were very active in the United States and there were a lot of Korean firms that were active in the United States. Both Board staff in IF and BS&R had noticed that some of these Korean firms were having financial problems. Some of them had failed—both small firms and conglomerates (the famous chabols)—and BS&R was concerned that this was going to affect Korean banks. So, they intensified their supervision of Korean banks operating in the United States and, to some extent, ring-fenced their short-term assets in the United States to make sure that they matched and were sufficient to service their short-term liabilities.

I remember going on a trip to Asia before the Korean chapter of the crisis broke, again with Tim Geithner. He had just gotten a memo from his staff, which had talked with the IMF about Korea. The IMF said everything was fine in Korea and he gave the memo to me to read. I indicated that was not what we thought. Both BS&R and IF knew that there were these problems with Korean banks. But as often was the case we did not how big those problems were.

Korea, the country, was borrowing abroad principally through its banks—both the head offices and offices in other counties—and it was all short-term borrowing, which meant that it could run off, or not be rolled over, very quickly. In fact, the run had already started before Thailand's crisis broke out in early July. Then the run intensified because this was a case of increased risk aversion but not a seizing up—an increase in risk aversion with everybody pulling back. It didn't affect relations among most foreign banks, but it was relevant that the Japanese banking system was in full collapse because of their domestic non-performing loans that had been put on the books in the boom period of equity and land prices in the late 1980s. They were the major banks pulling their money out of Korea essentially on instructions from the Japanese government. It took us some time to convince the Japanese authorities to reverse the instructions they had given to their banks to pull their funds out of Korea.

MS. JOHNSON. There was a huge incentive to be the first guy out the door. And that's what this standstill and rescheduling exercise was designed to prevent.

MR. TRUMAN. In 1998, we had a second round with the Russian default and other things going on in financial markets that Karen was referring to. Then we had some substantial seizing up of financial markets. Different people have different views about whether Long-Term Capital Management was the cause or the consequence of this period of crisis. It was some combination. Basically, credit relationships broke down and credit was not being extended.

During that time, the Board set up—and extended as I was leaving—a monitoring system of various indicators of the functioning of markets.

MS. JOHNSON. And, in part, eased monetary policy because of the economic and financial effects of the crisis. There were all sorts of questions about how, through the 1990s, market innovations and market changes, hedge fund behavior, all sorts of things had changed the dynamic by which different parts of the markets interacted. There were also puzzles of the sort you referred to: "the problem is over *here* but the manifestation is over *there* somewhere. How come?"

MR. TRUMAN. In September 1998, Greenspan had a little paragraph in his speech in San Francisco about no country is an island and therefore we need to signal an interest rate cut. (This paragraph had been drafted and cleared with FOMC members who were at the Kansas City Bank's annual conference at Jackson Hole.) However, after the next FOMC meeting later in September, the market was disappointed with the size of the cut. Consequently, the FOMC approved an intermeeting cut in the funds rate in mid-October. After the second cut, I left the Board.

MS. JOHNSON. Just for clarification, the point I made previously about a worst-case memo in the United States not having a lot at stake pertained to the 1997-1998 developments, not Mexico in 1995.

Policy Response to Crises

MR. PROMISEL. The policy response to these crises was controversial, not just with the academics but internally as well. There was a lot of debate about the costs of keeping these countries going versus urging them to default, or using the IMF. What does it mean for a sovereign to default? How do you do that? How can you deal with the legal complications and

can provisions in the IMF articles help in some regards? There was a lot of discussion about alternative ways of dealing with these issues.

MR. TRUMAN. I think that's right. And, in the spring of 1998, in response to interest on the Board, we had an economic consultants' meeting on approaches to the Asian financial crisis. We deliberately had people with very different views. I organized it a little differently than normally. I didn't want to get the Chairman involved in chairing it, which he tended to do, at least when I was here in recent years. That was not a good idea. The event was more for the Board, it seemed to me, to hear these people. So, with the Chairman's permission I asked Dick Cooper to chair the meeting; Cooper is a somewhat elder statesman type. We had Joe Stiglitz at one end of the table and Stan Fischer at the other end of the table. They were at loggerheads about how the Fund had mismanaged the crisis but were well behaved at the meeting.

Stan was the First Managing Director of the Fund; by that time, Joe had gone to the World Bank as chief economist. But Joe was highly critical of the approach that had been taken in terms of macroeconomic policy in the countries in crisis. Oversimplifying somewhat, Joe said that these countries are having recessions, so why are you making them tighten their monetary policy, much less their fiscal policy—although there wasn't much fiscal policy tightening involved. There also was the basic moral hazard question that had to do with how you involved the private sector. One way to deal with that aspect is to just not bail out the country and its creditors. That is somewhat analogous to debates today in 2009. You make the creditors take some of the hit via private sector involvement—taking on further exposure, taking write-downs, or some such approach.

Then you had the question of the role of the Fund, which was a big debate starting in the early 1980s. When is the optimal time to default? Should these countries just default and get it

over with and not borrow from the Fund? What is the price that will be paid for default? What is the role of capital flight from these countries, which was another aspect of this topic? Mike Dooley and Bill Helkie did an important and influential paper on measuring capital flight. They tried to explain that many aspects of these 1980s problems were a lack of confidence in the policies of the governments involved, and so private citizens basically were taking the money out the back door when the official money poured in the front door.

The whole question was how countries should manage their debts: whether it should be the banking system participating via a write-down, whether it made sense to do debt buybacks. And then there was a version of the debate that asked, "How could you institute an international bankruptcy regime?" There were two themes. One was how do you institute an international bankruptcy regime. The other was can you use an existing instrument? That's what Larry referred to: Article VIII, 2(b) of the IMF Articles of Agreement, which governs imposing restrictions on payments. Could you use that mechanism as it existed or as it might be reinterpreted by the IMF Executive Board as a device to sanction internationally—because it was supposed to sanction internationally—a standstill agreement?

MR. SMALL. Against a country or against a group of banks?

MR. TRUMAN. By a country against its creditors. There was a lot of legal back-and-forth on not only this. There were a lot of legal debates. We all had a lot of engagement with our Legal Division colleagues both on possibly setting up these arrangements, which legally had to be reasonably sound and defensible, and thinking about some of these broader systemic issues.

Another approach was that, in the wake of the Mexican crisis in 1994-95, there was an international exercise initially involving the G-10 central banks' representatives meeting in Basel. Later it was expanded to a joint central bank−finance ministry G-10 study group. A

report was produced called Working Group on the Resolution of Sovereign Liquidity Crises. The group was chaired by Jean-Jacques Rey, who was at the Belgian National Bank. The group looked at what the lessons of Mexico were and whether there were some mechanisms that could help to manage these crises. So, the lexicon, on the one hand, was crisis prevention and, on the other hand, was crisis management—what devices could you use in crisis prevention, in the pre-crisis period, that would help you in the crisis management period.

One of the recommendations—although not a particularly strong one—was that, when you weren't dealing with banks—in which case you could get into a room to negotiate a standstill—but when you were dealing with marketable instruments, you ought to have instruments that you could, in principle, more easily restructure. In my view, this dichotomy between bank creditor and non-bank creditors was an exaggeration because you couldn't get all the banks in the room either. The distinction between a lot of banks lending to a country and marketable debt is true, but not as stark as some people put it. The proposed approach when dealing with marketable debt was to have what was called a "collective action" clause where a subset, involving a large majority but not all of the lenders could rewrite the terms of an agreement rather than requiring 100 percent participation by those holding this debt. The change might be to say, "We will now change the terms from due next year to due over the next five years, or change the interest rate." The aim was to facilitate the renegotiation of debts.

All of this was with respect to debt issued under international or foreign law rather than the domestic law of the country. Subsequently after I left, when Karen Johnson was the director of IF, that particular proposal for collective action clauses was embraced by the international financial community and now is standard boilerplate in most sovereign borrowings under foreign law.

MR. SMALL. Is there some standard like 90 percent would have to agree?

MR. TRUMAN. My memory is that there's no standard. It's some figure between 75 percent and 90 percent; if you go to 97 percent, you might just as well be at 100 percent. Most of the provisions are in the 75-to-90 percent range. And there are other dimensions such as the question of to which terms the clause applies. It was a very interesting intellectual process.

In the first round, in 1995-96, the argument was, if you have this provision, then you're going to raise the interest rate on the debt, making it more expensive for countries to borrow. You expose lenders to the possibility ex post that the terms might be changed, and without their permission. Then the buyers of the instruments are going to raise the interest rate that they charge. The other side of the argument was that the price of easy renegotiation was lower than having a default and ending up where, because of holdouts, all of the holders of Mexican bonds, for example, don't get paid, say, for three years initially and then for five years. You might be better off having an out-of-court settlement. That's why it's called a collective action clause because it helps to partially resolve the collective action problem. If you can have a supermajority of the bondholders in terms of their stakes in the debt, you don't have to have the final deal driven by the person who holds $1 worth of the $100 billion in debt. When we got into doing this work, I thought that the finance literature must have 100 Ph.D. dissertations written on the effect of these clauses on the pricing of debt—we did a search and the answer was zero.

MS. JOHNSON. Because they existed in British—

MR. TRUMAN. We discovered that a version of this approach existed for debts issued under U.K. law, but not under U.S. law. Most international debt obligations, now securities, are either issued under U.K. law or U.S. law; there are other laws that govern international debt, but

basically the U.S. law or U.K. law covers most of the debt. U.K. law had a version of this provision; it was not quite as neat and tidy as the one I was describing, but it was close.

So, we thought, here's a controlled experiment: We could look at the same country borrowing in New York and in London, and see where it had to pay more. It turned out that no one had ever looked at this question. This is an example of the fact that no one ever examines the boilerplate in loan agreements or worries about some of the provisions in bond contracts until there's some significant positive probability that the provision will become relevant. Given that sovereign bonds had not been defaulted on since the 1930s, with a few minor exceptions, no one worried about the legal language. It was irrelevant whether this particular provision was there or not. You might argue that once the provision gained some prominence, and countries might game the process, then the provision becomes relevant. The notion that it might have a differential pricing effect was there, but latent. It was an interesting topic—again it was resolved on Karen's watch. Interestingly enough, there was a big debate about whether you go the IMF route, which was the international bankruptcy-approach route, or the collective-action clause route—a more market-friendly route.

In the end, after flirting with the first route, the United States ended up favoring the second. But it wasn't clear anybody was going to adopt it. So, what happened? Not irrelevantly, Mexico, a major borrower with a generally positive reputation at this point, decided unilaterally to borrow with a collective action clause. So, Mexico essentially broke the dike and set the standard, as was the case in changes in approaches to many international debt questions over the years, including asking for a Flexible Credit Line agreement from the IMF in 2009.

MR. SMALL. Has it ever been used successfully for a resolution?

MR. TRUMAN. I do not know whether it's been used yet. One of the problems is that, initially, you have a lot of debt that's outstanding without these clauses. I think it was either 2003 or 2002 when Mexico broke the dam and now it is pretty standard, covering an increasing proportion of international debt because, for a while, even a Mexico or Uruguay or some other country might have some of the old type of debt and some of the new type. It's only when you get a critical mass of the debt that the provision becomes relevant.

MR. SMALL. May I ask one clarifying question, because I'm not sure I understand it correctly: The contagion in credit markets—so, let me take a very highly stylized example, the Russian default crisis. They announced a default. Joe over in Canada is holding some paper issued by Tom down in Australia. The plumbing issue is that the Canadian guy worries that the Australian guy is holding some paper from a Mexican guy who's holding Russian debt. All of a sudden, the guy in Canada says, "I better pull back"—four-degrees separation from Russia.

MR. TRUMAN. For 1998, yes, but not for 1982, when you might have imagined for example that, given the threat to international banks around the world, there would be a pulling back in the interbank market. I don't remember in that period that we were worried about such a phenomenon. Later, there were problems in the interbank market where bank A does not want to sell overnight funds to, or make an unsecured overnight loan to, or even a secured overnight loan to, bank B because it was worried about its solvency, which is the extreme version of what you saw more recently. Some of that process manifested itself in 1998.

The earlier contagion more often took the form of what I would describe as direct impact. First, Mexico defaults. Second, that's going to impact Costa Rica, its near neighbor, via reduced exports, so I get out of Costa Rica. Third, Mexico's circumsances had certain characteristics and I now look around the world for other countries that have similar characteristics. I pull back

from my lending to those countries because they might be next. As both one and three happen, banks see that they have losses in Mexico. They say, fourth, it's time to be more cautious in general, and they stop lending to Korea. So, a run on Korea gets triggered. The contagion works through those channels. Those are the four pieces of contagion; the fifth one that you named of a freezing up of credit markets was possible but was not widespread, except to some extent it did exist in the 1998 Russian crisis. But the plumbing did not get really clogged.

MS. JOHNSON. Can I suggest another case to add to the list? I'm a diversified international investor. I'm not a bank necessarily, a hedge fund maybe. I've got some liquid assets and some illiquid assets. The illiquid assets suddenly look less sound to me for whatever reason. The mix of them one way or another is not optimal. I sell the liquid assets because there are markets for those. A country might not be in trouble or a banking system might not be in trouble, and I go sell its stock because stock in that county trades on a nice liquid big market. And so, stock markets fall, but they have nothing to do with the original problem.

MR. TRUMAN. Another variation. So, you might get out of your most liquid investments. You had claims on Thailand or Indonesia, countries which were in trouble. You were not a bank but an investment company that had to meet its obligations. You had to build up your liquidity position. So, you sell what is most liquid, which is your short-term claims on Korea or wherever it might be. It's a defensive balance sheet posturing by the financial institution. And then you have another version of contagion with the Thai example. The hedge funds see that Thailand goes, and they start betting against Indonesia and Korea. That's the ERM crisis in 1992.

MR. SMALL. So what's the crisis of 2008?

MR. TRUMAN. All of the above, with not much in terms of sovereign debt crises, as we have demonstrated.[33] Just to go to 1992, and the ERM crisis, which we didn't fully recognize, and we certainly didn't predict the ERM would break up. We didn't know what was going on. At least I didn't know what was going on. Probably Karen did. You had a situation in which, viewed from our eyes, there was downward pressure on the dollar against the DM, inconveniently in an election year here. We resisted that pressure on the dollar starting in July through early August. We participated with the Treasury in buying dollars and selling DM. Finally, Bill McDonough and the Chairman persuaded the Treasury that this was foolish, that we were throwing tens of millions of dollars in foreign exchange into the market to no effect; nothing was happening. So, we pulled out. Money was pouring out of, in particular, the United Kingdom in terms of sterling and dollar claims and into the DM. Since the ERM was busting up and in some sense we were—

MS. JOHNSON. We were financing it.

MR. TRUMAN. We were financing it via our intervention. The DM was pulling the whole ERM mechanism apart because people within the ERM were betting on the DM by bringing money (dollars) in from the outside, which was pulling the whole ERM mechanism up relative to the dollar. And then people who were trying to make money out of this looked and said the weak link was the British pound.

MS. JOHNSON. People being George Soros.

MR. TRUMAN. But he had a lot of friends. He had a lot of company. They made the correct judgment that Britain, which was in a recession, couldn't afford to run its fixed exchange

[33] Note that this interview was in December 2009 just as the Greek sovereign debt crisis emerged. There had been more traditional crises in several Eastern European members of the European Union and a classic crisis in Iceland in 2008-09, but they were footnotes at this point.

rate regime relative to the German currency any longer. By raising their interest rates higher and higher, and pushing the British economy down further and further, ultimately, they were going to have to get out of the ERM. The speculators bet against the Bank of England and they won.

Having won that one, they went after the Italians and the whole thing busted up, as these actors were trying to make money betting on who was next. It is again somewhat like bank A goes down, and you do the equivalent of buying credit default swaps on bank B. As a result,you drive up the price of those credit default swaps. Sure enough, one would say you produce the failure of bank B because people look at bank B's credit default swaps going up, and people start pulling their money out of bank B. That was part of Europe's story in 1992.

There was a study that we were all involved in examining that experience. And it was part of the Asian crisis too. The Asians were unhappy about the role of hedge funds, both in 1997 and 1998. There was a study that I was involved in, wearing my Treasury hat, under the Financial Stability Forum, which looked at these hedge funds. We looked at highly leveraged institutions, meaning investors, proprietary traders, investment banks, and large commercial banks as well as hedge funds, and did not resolve this issue. So, I think my answer today is you had all of the above in different mixes of forces and motivations.

MS. JOHNSON. The answer to your question is that the risk premium or the discount factor, the psychological risk premium that people attach to risky uncertain streams of income, is not a parameter, it's a variable and it goes up in a crisis. All assets whose value is the discounted value of an uncertain income stream change in price.

MR. TRUMAN. I have talked about the ERM breakdown. We've talked about NAFTA. We have talked about German unification, which was an example of where some interesting work was done at the Board, largely by Lew Alexander, and presented to the Board, and

probably made its way to the FOMC. So, we thought about those problems, but it was not that we had any influence over them. It was more an intellectual exercise trying to understand those issues.

The First Gulf War was a reprise on the oil price increases of the 1970s. This crisis happened suddenly, and I had to cancel a vacation and worry about our FOMC presentation jointly with people in R&S. We were better prepared and had a better developed framework for thinking about the questions surrounding oil price increases than was true in the 1970s, at least in terms of an oil price shock. A different question is how to deal with what turned out to be a secular rise in oil prices. There was some contingency planning in terms of the war and thinking about possible exchange rate implications. But it turned out to be largely a nonevent.

I was on leave for most of the period of the Gulf War. I had persuaded Chairman Greenspan to give me four months of paid leave. I asked for six months and I told him I wasn't going to be any good to him much longer if I didn't get some opportunity to recharge my batteries. He approved four months. It was something that Ralph Bryant had done when he had been a senior official at the Board, and that we had arranged for Peter Hooper to do as well—to spend six months or so at Brookings. This sabbatical program existed on the books but was not particularly exploited by senior officials. I applied for and got Greenspan's permission to take four months off.

Charlie Siegman and Larry ran the division for four months. The period was reasonably calm except for the Gulf War, at least seeing it from a distance. That was the importance of the Gulf War to me.

Relationship with China

MS. JOHNSON. Would you talk about the opening up, and evolution, of contact with China, Volcker's trip to China, your contact—from zero to whenever it was in 1998 when you walked out the door.

MR. TRUMAN. Nixon went to China in 1972. There weren't any implications of that trip for the Fed. Then, in 1978, Deng Xiaoping started his so-called reform efforts. I say "so-called" because views differ about how much reform was involved initially and what ended up being reformed. As part of the reform process, there was a systematic opening up of China and Chinese institutions to the rest of the world. They developed what I call the buddy system. The People's Bank of China, the central bank, was paired up with the Federal Reserve; the finance ministry paired with the Treasury; the Commerce Department paired with the commerce ministry; the planning ministry paired up with the CEA; and university A in China paired up with university B in the United States. In fact, each Chinese institution had several "buddies" around the world.

As part of the effort to "learn everything we can" in a systematic way, the People's Bank of China went on to pair up with almost every central bank in the world. The People's Bank invited Chairman Volcker to go to China in 1980. That trip was a real challenge for us because we didn't study China or have anybody on the staff who ever had studied China. In the academic world, you were either a China expert and you went off to be a China expert, or you were not. China was not covered in your standard course on anything, other than China. It was like Kremlinology and called Sinology. You might have learned a little bit about central planning, and so forth, as I did at Yale, but that was about it. The general public was woefully ignorant about China.

MS. JOHNSON. Comparative systems.

MR. TRUMAN. Comparative systems were the most anybody had any experience with and China was not featured in those courses, at least not the ones I took at Amherst and Yale in the 1960s. So, we had to bone up on our facts and figures, along with policy issues. We relied on the State Department for some facts and figures, and on our friends across the river (as I called the CIA), though I never thought that we got much in the way of useful insights from that source. Charlie Siegman organized the program for the Chairman. Compared with other visits abroad by Chairman Volcker, it was very minutely detailed. It was programmed down to the minute, and we didn't have a lot of control over the program, as I recall. Everything was set in advance. I didn't go on the trip. Partly for selfish reasons and partly for unselfish reasons, I decided to suggest that Charlie ought to go with the Chairman. He had done all this work. It was again somewhat of a sacrifice for him personally. On the whole, I hope it was a net plus, but it was not always easy for him to travel in a strange country and respect his dietary restrictions. But the trip was successful.

Then we had to host the governor of the People's Bank of China in the United States, who happened to be a woman. She came back again later and had a subsequent visit that included seminars and a certain amount of getting to know each other. It became a slight administrative issue because it was clear that they had more people who were going to come here than we were going to send there. We were going there as their guests, at least once we got there. The budgetary cost of entertaining the presidents of the 972 branches of the People's Bank of China was going to be overwhelming. So, after two or three years, we negotiated a "we'll pay our own cost" agreement.

I wouldn't say we had, at that period, an intimate relationship. A number of Governors went to China and a number of China's senior officials came here for various visits. I was fortunate because the People's Bank invited Governor Rice to go to China and he asked me to go along as his aide-de-camp. We had a wonderful time, 11 days in China. This was before we negotiated this visitor-pays agreement, so they paid for everything. We went to Beijing, he gave two lectures, and I gave a lecture. We went to the Great Wall. We went to various other sites.

MR. SMALL. What were the Chinese interested in?

MR. TRUMAN. Everything. In 1994, Alan Greenspan went to China on the Federal Reserve's equivalent of a state visit. The governor of the bank then was Zhu Rongji who later became prime minister. By that time, China-U.S. relations were a lot warmer, on the one hand, and more complex, on the other hand, than they were in 1980. The Chairman asked whether someone from the Treasury Department or the State Department wanted to go along with us. The State Department said no, but the Treasury Department said yes, and Jeff Shafer, then assistant secretary, was part of the delegation. (The intelligence people knew nothing about Zhu Rongji, when he became prime minister, because he hadn't come up through the political side. So, when he became prime minister they came and asked, "What do you know about this person?" We didn't know much, but we had had some meetings with him, so we could tell them a little bit about those meetings.) Chairman Greenspan went back to China on one other visit while I was still director, in 1996 I think. And increasingly there was a broad range of contacts with China.

It also was clear that, even before the Asian financial crisis, that non-Japan Asia, and not just China, was becoming increasingly important. So, we had become involved in following these countries. Chairman Greenspan typically would go to Japan to visit every four years. The

visit was usually in the fall during a U.S. presidential election year. And when he went in 1996, I said I'd like to extend my trip elsewhere in Asia and make some contacts at other central banks. He agreed, and I went to the Bank of Korea, to Hong Kong, and to Singapore. It is not that we didn't have contacts with those central banks at all. Many of the foreign relations contacts with central banks in that region were understandably managed through the Federal Reserve Bank of New York, because it had correspondent relationships with them. We had economists who worked on non-Japan Asia by that time, and we sent them on visits. But it was slightly different from sending a staff economist to Korea or wherever it might be to get to know his or her counterparts to send the division director to make contacts at the senior level. This helped us in the long run not so much in anticipating the crisis the next year but in understanding what a complicated place the world had become.

Similarly, throughout this period, even in the wake of the Latin American debt crisis, our institutional relations with the Latin American countries intensified through CEMLA, the Center for Latin American Economic Studies, and meetings of the Western Hemisphere central banks, which for a long time we had ignored. Lyle Gramley used to go to these meetings because he had an interest in Latin America, and I think spoke some Spanish. After a while, there would be a Governor assigned to go to those regular meetings, which were held once or twice a year. Gramley didn't always go, but he often did.

It was a manifestation of the fact that we increasingly saw the world as not just being the G-10 countries—meaning Japan, Canada, the major Western European countries, and us—but a much broader set of countries: China, the rest of Asia, India (on Karen's watch), Eastern Europe, and countries of the former Soviet Union.

Former Soviet Union

One of the trips that I was involved with was somewhat similar to Volcker's trip to China in 1980. In 1989, Greenspan was asked by the White House to go to the Soviet Union to talk to them about their economic reform efforts. Again, we didn't know much about the Soviet Union. We covered a few of the Eastern Europe countries not because they were important economically but because they were borrowers on international capital markets and hence had some importance financially. Secretary Brady asked Mr. Greenspan why he was going to the Soviet Union. He thought that the Soviet Union was not relevant to the world economically or financially. Greenspan's answer was, "Because the White House asked me to go."

The Russians wanted to know something about banking. Dave Howard drafted an erudite lecture that Greenspan gave in Spaso House (the U.S. ambassadorial residence) about the role of banking and banks in market economies. In retrospect, it probably was not the most relevant topic on which to lecture, though I'm not sure what the most relevant topic would have been. It is, however, an example of how things can unexpectedly go wrong.

The lecture was about banking and had a passage in it about managing foreign exchange exposures and the role of the exchange rate in monetary policy. And there was a line in it saying literally that central banks should not pay so much attention to exchange rates, they should focus on the nitty-gritty of monetary policy. As usual with speeches then, as now I guess, it was released in Washington as Greenspan gave it in Russia. This was done partly to keep some record of what he said. We didn't want to have to rely on *Pravda* to give its version of what was said. A reporter here in Washington took this phrase out of context and said, "Greenspan goes to Russia and criticizes the Treasury's approach to foreign exchange market policy." I will not say too much about this trip because it's covered in Greenspan's book. The book does not indicate

that I was with him or that Bob Zoellick, who was then the counselor to Jim Baker at the State Department, was also with us. The three of us went to various meetings that had been arranged. We met with the governor and other representatives of the central bank, with some industrialists, a few reformists in the parliament, and some other government officials. Greenspan himself had a meeting with Gorbachev. I was not at that meeting and, many years after the trip, when Greenspan was writing his book after he was chairman, he kept asking me to confirm that he had met with Gorbachev. So I went over my notes and found a brief discussion of a couple of points that the Chairman made to me after that meeting with Gorbachev. Greenspan used that chapter in his book as his pivot from his personal history to his more philosophical chapters and my interpretation is that he wanted to get his facts right.

When he returned, Greenspan wrote a nice report about what he learned; he talks about it in his book. In retrospect, I now understand there was at the time probably more pressure to reform in the Soviet Union than we fully appreciated, though it was not getting very far. The Berlin Wall subsequently fell in November 1989, and eventually was followed by the collapse of the Soviet Union.

We at the Board were involved in some of those developments. In particular, I got involved in the efforts that were organized under the IMF and the BIS to provide technical assistance to the new central banks of the republics of the former Soviet Union. And various other people here at the Board and in the System were involved in technical assistance. It was a nice example of how we used our modest technical assistance program. That program was managed out of IF, at least in my day, and by the New York Federal Reserve Bank jointly to provide central-bank-to-central-bank technical assistance. This was under a broad rubric. Dave Lindsey, Tom Simpson, and Jeff Marquardt from the Board and Bruce Summers from Richmond

FRB were part of that effort to go to central banks in the former Soviet Union, some for longer periods of time and some for shorter periods of time, to help them set up central banks in their new countries.

And the program was, in my view, reasonably successful. That success may demonstrate that central banking is at its heart a pretty simple business: You either buy or you sell, and the market tells you whether you're right. And if you want to focus on a relatively narrow perspective, you think about your financial markets in executing your policies. You don't have to have super-sophisticated models in order to run monetary policy: When prices are going up, you tighten up. On another level, the central bank is an important institution, and I certainly think that we played a role, as the Board, the System, and the IF division in developing those institutions. I was involved because I was, to some extent, the front man for the System. But it's a nice little chapter as part of an overall effort to think about, to remember, that we had a role in that reform process.

Technical Assistance Generally

MR. PROMISEL. I agree with Ted about the benefits of the technical assistance we provided. But I've become rather skeptical about or cynical about technical assistance in general. I was the Board's person in charge of it for a while. And since I've been at the World Bank, I've seen a lot there and at the IMF. It is a competitive business on the part of the people providing it. It is not just an interest of serving the clients and furthering truth around the world. Providers of technical assistance compete with each other to sell their models, to sell their firms' hardware, if they're doing payment system stuff and computer upgrades and things. The countries ask a zillion people for the same kind of technical assistance. And so, it's provided. That way, they have a basis for rationalizing anything they choose to do. They can say this is

what the Bank of France or the Bank of England or somebody told us to do. It's necessary, it's helpful, but there are some less exalted aspects.

MR. TRUMAN. I think there's some degree of cynicism in this whole process that I was involved in. Technical assistance to the former Soviet Union involved an international coordinating process among central banks that was much broader than the G-10 central banks. There were 15 or 20 central banks involved in this process, which was partly coordinated through the BIS and partly coordinated through the IMF. In the end, it was more the IMF, with the BIS representing a rival process.

When I was at the Board, the technical assistance done was modest in scale. As Larry said, it was 100 percent demand-determined. They might have asked a bunch of other institutions for the advice in the same area and chosen what they wanted. So, when officials of the Central Bank of El Salvador called and said that they would like to have someone come to El Salvador who knows something about payment systems and could tell them about how to set up a real-time settlement system or something like that, they asked for us.

We had pretty strong rules. If it was a case of someone who was going to go down there for a week or two, we would absorb the salary costs but not typically the out-of-pocket travel costs. But if they actually wanted technical assistance where you're going to have someone be there for six months, the recipient paid the salary of the person we sent. For example, under one of these programs, Jerry Zeisel went to Indonesia to help set up the system to construct an industrial production index. The index is a rudimentary way of tracking the economy. The industrial production index was set up in the United States originally to track the aggregate supply behavior of the economy after the Federal Reserve was founded in 1913. That's why the Federal Reserve does the industrial production index today, because when the System got

started, officials didn't have any macroeconomic indicators. Industrial production was the only thing that was remotely around.

So, Jerry Zeisel went to Indonesia, but maybe it was after he retired. Jerry or someone went there and helped Indonesia set up an industrial production index. In the middle of the Asian financial crisis, two days after the end of some quarter, Indonesia announced that real GDP had dropped seven percentage points last quarter. Greenspan, ever the curious, asked, "How can they possibly know that with a one-day, or two-day, lag?" The answer was that they were relying on the industrial production index assembled with the technical assistance that was supplied by the Federal Reserve System. We gave the answer to the Chairman and he was flabbergasted. Not that basing GDP on IP wasn't a reasonable and roughly right approach.

We didn't have people in the System whose job it was to run around and give technical assistance. Maybe some people went more often than others. Tom Simpson did quite a lot of this in the last period he was on the staff. He was relied on by the Treasury Department to help out in Iraq in particular, but he knew what he was doing. But being cynical about the value of technical assistance, the first principle probably is to have it demand-determined. The second is to make the country that is receiving the assistance put some money down too so that it's not a complete free good. That gets you about to second base. And whether you get a home run is a more random process.

MR. PROMISEL. One other side of it. I remember China asked for some technical assistance in the central bank. I forget what particular aspect it was. I was involved in that because I was responsible for some of this. Well, how many people are you talking about training? 100,000 was the answer!

MR. TRUMAN. This was the outgrowth of one of the meetings that Greenspan had at the time—I think it was the 1996 visit. They came back with this proposal. We wrote a memo and tried to think about what we could constructively contribute within our means and interests.

Partly the interest was in the bank supervisory area, which was somewhat complicated by the fact that we didn't automatically grant to any Chinese bank the authorization to open a branch of its bank in the United States. We didn't do anything automatically in this area. One of the tests was that they had to pass the test of consolidated comprehensive supervision. And the judgment that was made in the 1990s, when I was dealing with these issues, was they hadn't gotten there yet. I recently read in the *Financial Times* that that's still the judgment today. So, the Federal Reserve applied this test on a bank-by-bank basis to see whether that particular bank was sufficiently subjected to consolidated comprehensive supervision so that we were prepared to let that bank open an agency or branch in the United States. I think the standards for agencies are lower than standards for branches. But this is a topic that's still with us. So, the People's Bank asked for technical assistance. They probably figured that their request would probably increase the chances that their banks would get the licenses that they were applying for even before I left in 1998.

December 22, 2009 (Part 3 of 3 of the Interview)

The Fed's Membership in the Bank for International Settlements

MR. SMALL. This is the third day [session] of the interview with Ted Truman. Present are David Small; Karen Johnson, another former IF director and Ted's successor; and Jaime Marquez currently a senior economist in IF. Let's talk about the Fed's membership in the Bank for International Settlements (BIS) and how that came about over time.

MR. TRUMAN. The Federal Reserve's membership in the BIS is an interesting historical episode. The BIS was founded in 1930. People at the Federal Reserve Bank of New York were involved in negotiating a charter for the Bank. The BIS made allowance for the Federal Reserve to be a founding member of the board of directors and to have two members on that board. But since the BIS was set up to administer the interwar reparations payments (imposed on Germany by the Treaty of Versailles after World War I) under the Young Plan and the United States was not in favor of that plan, the Fed did not take up its seats.

That's where it stood at the end of World War II. I have been told that the congressional legislation that ratified U.S. participation in the IMF and World Bank (the Bretton Woods Agreements Act) called upon the United States to favor closing down the BIS, since it was seen as a rival to the IMF. However, I have not been able to track down such a provision in the legislation. So, this may be a myth. The president of Federal Reserve Bank of New York did testify against the legislation, arguing that these matters were better handled by a small group of central bankers meeting in Basel than by a larger group of finance ministries meeting in Washington. Questions also were raised about the BIS's role in the prewar period and during World War II.[34]

[34] There were allegations that the BIS had helped the Germans loot assets from occupied countries during World War II.

MR. SMALL. The BIS sounds like an international clearinghouse.

MR. TRUMAN. The BIS was originally intended to administer the World War I reparations payments; it was to take money in and pay it out. But from the beginning, it also was set up as an institution of monetary cooperation where central bankers would meet and discuss current problems. The BIS also was set up as a bank, and many central banks and monetary authorities around the world kept their reserves there, and still do, because the BIS is in Switzerland and has special immunities. The BIS is probably the safest place in the world to keep your reserves, if you are a pariah country. Of course, a country pays a price in terms of the return on its assets for the legal projection and market anonymity the BIS offers; in other words, the BIS charges a fee.

The BIS also manages those reserves, and its revenues come from managing those reserves. It is self-financed. It also provides anonymity for the countries whose reserves it manages. If you are managing your own reserves via commercial or investment banks, those entitities know when you are buying or selling.

MR. SMALL. So the BIS benefits from all that?

MR. TRUMAN. Yes, that's right. It's an intermediary so it doesn't publish how much it has in deposits from the Federal Reserve, the Treasury, or from other central banks around the world.

MS. JOHNSON. What became of the U.S. shares?

MR. TRUMAN. When the BIS came into existence, there was a capital subscription and there was—and I don't know exactly why they did it—a provision that some of the capital could be subscribed by private investors. As a result, the U.S. shares in the initial capital of the BIS were sold into the market. Those shares were technically voted by a representative of the private

sector. For many years, it was Citibank though Citi was required to give a proxy for voting the shares to the management of the BIS. The votes involved primarily the question of what the dividend would be. The BIS had a second capital increase after World War II. The U.S. portion of those shares was not sold and, although all the major participants had the same share of the BIS's capital initially, the United States subsequently had a smaller number of shares and a smaller number of votes because the second tranche hadn't been taken up. And, if I'm not mistaken, under your watch, Karen, the fact that there were private shareholdes became a problem, so the BIS subsequently bought back these private shares.

MS. JOHNSON. Yes, that's why I brought it up. The BIS made a decision at one point that the private shares posed various anomalies in the way the BIS operated and—I don't know exactly what you did, Ted, in this regard—forced a buy-back from the private shareholders.

MR. TRUMAN. Yes, the BIS forced a buy-back and there was a big legal case about the price.

MS. JOHNSON. Price became an issue.

MR. TRUMAN. So that's where things were as of 1994: The Federal Reserve Bank of New York and the Federal Reserve Board attended meetings at the BIS, but the U.S. central bank was not a formal member of the institution. Periodically, there was some talk about the Federal Reserve taking up its seats at the BIS.

During the 1970s, Arthur Burns became very interested in this topic. Starting at least in the early 1960s, although we weren't a member of the BIS, we participated in all of its activities. Representatives, principally from New York, though increasingly from the Board, went to meetings of the Group of 10 central banks. The U.S. participated in various committees under the auspices of the BIS such as what was then known as the Euro-currency Standing Committee

and now is known as the Committee on the Global Financial System and the Basel Committee on Banking Supervision and Regulation, both of which were set up in the 1970s.

The Basel Committee on Banking Supervision (BCBS) was originally set up by the G-10 Governors in 1974 and for a long time it reported to them, but it now operates independently—reporting to a group of senior supervisors and central bank governors. It holds most of its meetings at the BIS. The Euro-Currency Standing Committee (ECSC), now the Committee on the Global Financial System (CGFS), was set up by the G-10 governors in 1971 to investigate the issue of whether the Eurocurrency market should be more tightly regulated. It subsequently became the forum for discussing global macro-prudential issues, and played a major role in initiating cooperation in the collection of standardized international banking statistics which were assembled by the BIS staff and published by the BIS.

The third important committee was the Committee on Payment and Settlement Systems (CPSS), which was initially set up by the G-10 governors in 1980 as a Group of Experts on Payment Systems, taking forward the work of the G-10 Group of Computer Experts. It was chaired in 1990-94 by Governor Wayne Angell. In 1989 a related ad hoc group under the chairmanship of the BIS General Manager Alexandre Lamfalussy was the Committee on Interbank Netting Schemes. The current CPSS was formally established in 1990.[35]

The Federal Reserve (Board and New York Bank, usually both) participated in all of these committees. Their governance was somewhat complicated or convoluted. They were committees authorized by the G-10 central bank governors, which technically included the Fed Chairman but not the President of the FRBNY; but they were staffed by the BIS, of which the

[35] It is now the Committee on Payments and Market Infrastructure.

Federal Reserve was not a member. In that sense, they should be considered G-10 governors' committees, not strictly BIS committees.

Returning to the issue of actual BIS membership, for a variety of reasons, Burns was quite interested in the question and pursued the matter with the Europeans and in Washington. Charles Siegman, who was Senior Associate Director and had worked at the BIS in the late-1960s for 18 months on leave from the Board, became our expert on the subject. As I noted, Burns became interested in U.S. membership in the BIS, but the Europeans weren't really excited about us joining their club. BIS membership was basically Europe plus Japan, Canada, and, I guess, Australia and South Africa were taken in at some point. The BIS members included primarily central banks in Western European and a number of Eastern European countries because it was set up in the pre-World War II period. It was a very European institution. Burns conducted quite extensive negotiations with the Europeans, but in my view, they really didn't want us in their club. They said we would have to subscribe to these additional shares before we could join, which would have meant that the Board would have had to go to the Congress in order to get an appropriation. And, at least, we needed to get the endorsement of the Administration. One of Burns' last acts under the Nixon-Ford Administration—the Ford Administration by that time—was to get a letter from the Secretary of State, Henry Kissinger, and a letter from the Secretary of the Treasury, Bill Simon, saying that they approved our taking up our seats on the board of the BIS.

There was one other complication: As written, the BIS charter defined the central bank of a country as the institution that's located in the major financial center. That would have meant that the Federal Reserve Bank of New York would have represented the Federal Reserve System on the BIS board. That provision was not an accident. It was written that way because the

president of the Federal Reserve Bank of New York was involved in drafting the charter of the BIS. This was also in the context of 1930, when the structure of the Federal Reserve System was much different from the structure of the Federal Reserve System as it became a few years later and is today. This was before the legislated changes in the structure of the Federal Reserve System in the 1930s.

MR. SMALL. There was an animosity or historic tension between the Board and the New York Fed. And when BIS membership came up, the issue was who would get to vote?

MR. TRUMAN. Yes, and from Washington's viewpoint, it was not going to be acceptable for the Federal Reserve Bank of New York to have the membership. Certainly, Arthur Burns felt that way, so he was going to have to also get the Europeans to change the charter.

MR. SMALL. Was a letter from Bill Simon useful because he was the Secretary of the Treasury? But why the Secretary of State?

MR. TRUMAN. The BIS is an international organization and the State Department in some respects manages all relationships with international organizations, so you needed to have both on board.

MS. JOHNSON. Potentially, the BIS could add new members. And we were going to, and eventually did, face the issue of China joining the BIS. So, the State Department was not going to sit on the sidelines while the United States became a member of an organization that might then change its membership in ways that made problems for United States relations.

MR. TRUMAN. These were quite serious issues. One of the last things that Arthur Burns did was to call Charlie Siegman and me into his office. He said, "I want you two to pursue this matter."

Burns was an interesting man; he loved the International Digest that we used to produce in the IF division and the data that it contained. So, when he became ambassador to Germany, he got back in touch with us and said, "I want you guys to send the Digest to me in Bonn." Charlie and I would occasionally have breakfast with him—maybe half a dozen times—while he was ambassador. He didn't bring up BIS membership again. So that was where things stood, and we did not pursue the matter further except for a report to the Congress that was written in 1984; (see below).

The international ageement on the Bretton Woods Final Act included a provision calling on the BIS to be liquidated at the earliest possible moment. That provision was supported by those with the view that the IMF was going to manage international monetary relations, being the principal locus for international monetary cooperation, and therefore we didn't need the BIS. (Technically neither the World Bank nor the IMF is a bank—taking deposits etc.—but the joke goes that the Fund is a bank and the Bank is a fund.)

MR. SMALL. Did the BIS morph and become more involved in banking regulation?

MR. TRUMAN. Yes. In the post-Bretton Wood's period, you had issues like the collapse of Herstatt and the collapse of Franklin National Bank. And banking and financial issues spilled across borders, along with issues such as whether the Eurocurrency market was creating money and causing problems for monetary policies in the major countries. That was why the Euro-currency Standing Committee was set up by the G-10 Governors in 1971. It was

natural that the central bankers would get together in Basel to discuss these matters because it was a place to discuss those issues at a technical level.

MS. JOHNSON. The IMF is dominated by finance ministries. There are a few countries in which the actual membership and the seat are in the hands of the central bank, and the central bankers are always involved in some way. Depending on the country, the relationship can be different. But the BIS membership is central banks only in many important respects. It's a place where central bankers go to talk to other central bankers, and the mix of issues and the mix of people are focused on central bank issues.

MR. TRUMAN. Karen is certainly right today, but she is, I think, not so right about where things were in 1970. When you had the Bretton Woods system, monetary policy and exchange rate policy were much more closely connected than today.

MS. JOHNSON. Yes, because they are all the same thing.

MR. TRUMAN. In the period of the breakdown of the Bretton Woods system, the GAB and all those processes, and the Committee of 20 itself, involved the central banks. Moreover, several important European countries had IMF programs during this period and into the 1970s which involved conditions on monetary policies. It was only after you got to floating exchange rates that the Fund got into the lending business—principally to emerging market countries.[36] Moreover, the central banks—especially the major central banks—were becoming increasingly independent from finance ministries. Previously, there wasn't any difference between the central bank and the finance ministry in many countries—Japan, the United Kingdom, France, Italy. Even today there are residuals of these relationships, though for the Europeans they had to make

[36] Note that these interviews were before the euro debt crises broke out in 2010.

their central banks formally independent when they became part of the European Economic and Monetary Union.

MS. JOHNSON. The IMF is too diverse.

MR. TRUMAN. Too diverse, yes. But the BIS was financially active. For example, the BIS always did a certain amount of lending to members but not a lot. The BIS didn't take big risks, but it did periodically make loans to member central banks—not like the IMF with conditions, but more like overdraft facilities. Paul Volcker rarely went to the BIS, maybe once or twice a year at most out of eight times a year. Henry Wallich usually represented the Board. But before the debt crisis broke out in 1982, Paul Volcker did attend a BIS meeting there and met with his colleagues—not in the meeting of the governors but at the dinner where they didn't have people like me sitting around the table, he informed his G-10 central bank colleagues that Mexico was likely to be in big trouble. It was in May before the Interim Committee meeting in Helsinki.

MR. SMALL. You're taking up Karen's point, that it was an advantage to go there to be sheltered from the finance ministers.

MR. TRUMAN. Yes, certainly that was the case. And the increased independence of the central banks made that more so. There's a famous story about sometime in the 1960s when the U.S. Undersecretary of the Treasury wanted to go to the central bank meeting at the BIS to talk to them about how they should handle the latest crisis. But the BIS sent a message and said that he was not welcome. [Laughter] And for many years at the BIS you did not see people who were from finance ministries. They didn't darken the doorways. Then the rule broke down, and it was changed so that representatives of finance ministries couldn't be around the BIS when the senior central bankers were there. But increasingly the BIS became a hub, a meeting place. The

Basel Committee itself involving banking supervision and regulation included members who were not central bankers—various bank regulators from different parts of the G-10 world. Then the BIS started hosting G-10 meetings and G-10 deputies' meetings, which was fine as finance ministries and central bank people became a little bit more open about the process. As I said, the BIS was the venue at which Volcker communicated to his fellow central bankers that there was a crisis looming in Mexico. After the crisis hit, the Board used the BIS to organize the support operation for Mexico. Other countries backed BIS lending to Mexico alongside our own lending. We had a U.S. operation and a non-U.S. operation—two parts of a bridging operation to lend to Mexico.

MR. SMALL. And the BIS would work with other private sector banks that—

MR. TRUMAN. No. The BIS just works with central banks.

MS. JOHNSON. They were part of the official support for Mexico, but they weren't part of any private support.

MR. SMALL. They didn't put together the whole package?

MR. TRUMAN. No, it was only the official component.

MS. JOHNSON. Just official.

MR. TRUMAN. A bridge loan was provided by official sources—funds from or backed by central banks and finance ministries bridged to the disbursements by the Fund so Mexico got the cash earlier. It's a little hard to imagine this today but that's the way it worked in those days. On the one hand, the cash from the IMF was being spread out in four pieces over the next 12 months. The borrowing country had to meet certain conditions in order to get the cash from the IMF. On the other hand, we gave Mexico's monetary authorities the money up front so you might question whether this was logical. The officials with one hand were lending, but with their

control of the IMF's hand they might withhold the country's access to funds from which they expected to be repaid.. That is the way it was structured, and the BIS got involved in several other similar arrangements—one for Argentina, one for Brazil, one for Yugoslavia.

As one consequence, as part of the IMF legislation that was passed in 1983, the Treasury and the Federal Reserve were mandated to do a report on whether the Federal Reserve should "join" the BIS formally. We dutifully did that report; I should say Charlie Siegman did it principally. We concluded that there was a case for Federal Reserve membership, but the case was not overwhelming at that time. We got all the benefits of membership without any costs and so there was no particular advantage in membership. That was the conclusion of that report.[37]

Herstatt Bank

MR. SMALL. Herstatt Bank in Germany failed in 1974 and then later it almost seems like that failure initiated the Basel Committee on Banking Supervision.

MR. TRUMAN. That's right.

MR. SMALL. How important was Herstatt?

MR. TRUMAN. Herstatt was principally a question of the payment system. The Germans closed Herstatt in the middle of the day. You had money that had been received by Herstatt before it had been paid out. Effectively, you were in the middle of a trade, only half of which was completed when Herstatt was closed, and that was tremendously disruptive. The other event at about the same time was the failure of Franklin National Bank, which had foreign ownership. So, the part of the question that was addressed by both the Basel Committee and the Euro-currency Standing Committee was, who is responsible for a foreign institution that is operating in another jurisdiction? Is it the home supervisor or the host supervisor? And they

[37] As discussed below, the Federal Reserve has added to its own revenues by taking up its seats on the BIS board.

drafted a so-called "Concordat" in 1975 which, of course, stressed cooperation but said that the principal responsibility for foreign branches lies with the home-country supervisor—I'm summarizing—and the host supervisor is to be informed, while the principal responsibility for foreign subsidiaries lies with the host country The home country has a strong interest and should be informed, which is actually about the way things are today, circa 2009, tilted a bit toward home-country supervisors. But this topic has again become an issue in the context of the crisis of 2007-2009. At a minimum, you need more cooperation and more common rules. Initially the Basel Committee drew up the Concordat and the supervisors also met to exchange views on common issues and activities.

The major product of the BCBS was in 1988 when it produced the Basel Capital Accord of common capital standards for all internationally active banks. This issue had been around for some time. It received a push as a consequence of the LDC debt crisis in the early 1980s much as the recent crisis also has been an impetus for regulatory and supervisory reforms both domestically and internationally. The U.S. IMF legislation in 1983 mandated the Federal Reserve and the Treasury to pursue this matter of common capital standards around the world.[38] The argument in 1983 was similar to the one we hear today: Banks are taking too many risks relative to their capital positions. In addition, it was felt that U.S. banks, for example, were forced to do so because they were competing with banks from other countries—Japan in particular—where capital positions were much lower.

I am sure this topic was covered in other oral histories, but let me give you my reflections. The BCBS (Basel Committee on Banking Supervision) had been discussing this

[38] The provision read: "The Chairman of the Board of Governors of the Federal Reserve System and the Secretary of the Treasury shall encourage governments, central banks, and regulatory authorities of other major banking countries to work toward maintaining and, where appropriate, strengthening the capital bases of banking institutions involved in international lending." (Section 909(3)(C) International Lending Supervision Act, part of PL98-181.)

issue for some time—as early as the 1980s. The debt crisis at the time gave the topic more impetus, helped along by the U.S. legislation; Chairman Volcker, as I recall, made a presentation to the G-10 governors fulfilling his obligation under the International Lending Supervision Act. But the BCBS did not make much progress. At that point, the Federal Reserve (principally the FRBNY under Jerry Corrigan) structured an agreement with the Bank of England. They then took the agreement to the BCBS for their approval. The major sticking point, as far as I was concerned, was the reluctance of the Japanese authorities to agree. The Japanese banks wanted special treatment, which they received, for their large holding of equities with substantial paper profits, and they were generally reluctant to sign on. The Federal Reserve Board was somewhat caught up on the Japan-bashing of the late 1980s on trade and a number of other economic and financial issues. It was clear that some members of the Board felt that if Japan did not go along with the capital accord and raise the capital levels of Japanese banks, they would favor throwing those banks out of the United States or at least limiting their further expansion. I communicated this view privately both to my contacts at the Bank of Japan and to Toyoo Gyohten who was then vice-minister of finance and whom I had known since the C-20 days and in particular during our service on the Jurgensen Committee. I do not know if I had any influence, but soon thereafter Japan signed up. We were also, in the IF Division, responsible for coming up with the "rule" that distinguished between exposures to various governments based on their country's membership in the OECD. Membership brought with it lower or zero risk exposures in the Basel I capital standards, depending on the maturity of the assets.

MR. SMALL. Herstatt was followed, I guess, by a very active couple of years to get these international banks properly supervised.

MR. TRUMAN. Yes. Increasingly the financial system was becoming more globalized. And if you had different banks in different countries operating under different rules, whether it's lending rules or capital rules, then there are going to be competitiveness issues, which we had particularly with Japanese financial institutions and banks. There are level-playing-field issues and then there are the ground rules of international finance; these international discussions are being replayed today. There were issues associated with standards for reserves and for all kinds of accounting practices. There was a general attempt to align as much as possible national standards, or at least to understand national standards so that you didn't have this home-host question with respect to supervisory responsibility, a topic that still hasn't been fully resolved. Indeed, one possibility is to shift more authority from home to more host supervision; I think you are going to see that as a result of the 2007-09 crisis. In some jurisdictions like ours, there always was more host than home supervision. We did not defer to foreign supervisors on the question of foreign financial institutions operating in the United States, even if they were branches. The situation in the United States was somewhat further complicated by the fact that many foreign financial institutions initially operated under state charters, so there was only a limited amount of federal supervision, in any case, and some of the foreign banks actually had powers that U.S. financial institutions didn't have. For example, Credit Suisse had a securities firm, First Boston, meaning that a foreign bank in the United States had a securities firm and associated powers that the Citibank of the day did not have.

MR. SMALL. And they were state charters because they could look at the list of regulators and choose the ones—

MR. TRUMAN. No, I think that's how they got chartered originally when state charters were generally more common. Anybody could choose a charter. Credit Suisse was probably

chartered in the 1920s or 1930s. There was a progression in federal involvement in the supervision of U.S. offices of foreign banks. The International Banking Act, which was passed in 1978, was an attempt to codify our structure. I didn't have much to do with that, but Ralph Bryant had quite a lot to do with it, and I think we discussed it with him in his oral history. That is when the federal government's involvement with foreign financial institutions operating in the United States really got started. But there were several further steps before you got to where we are today that were associated with crises.

There was the Banca Nazionale del Lavoro affair in 1989, which involved a set of grey books in a branch of that Italian bank in Atlanta, which had on its books Commodity Credit Corporation guaranteed loans, including to Iraq.[39] There was also the Bank of Credit and Commerce International (BCCI) affair in 1990-91. So, by the time we got to the mid-1990s, all new foreign financial institution operations in the United States had to be approved by the Fed, and they all were subject to Federal Reserve supervision.

The Federal Reserve evolved gradually from the residual supervisor of some foreign institutions to the principal supervisor. The point is that by that time the Federal Reserve had unquestioned authority, in principle jointly with the states, over foreign banks, the Federal Reserve gradually had gained joint supervisory authority, and de facto full supervisory authority,

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[39] The Federal Reserve also had an indirect role in international economic policy. There was at the time an interagency committee that reviewed loans by the multilateral development banks and foreign loans by the U.S. government, including CCC loans. CCC lending was regarded as foreign aid, but it was really a form of agricultural support. Our representative on that committee was Valerie Chang—then a research assistant in our International Development Section—or at least she attended the meetings. We felt we should look at these loans from the standpoint of the creditworthiness of the borrower. In 1989, when yet another $1 billion CCC credit to Iraq was proposed, we voted no because of our view that Iraq was not creditworthy. The Chairman got lobbied by the governor the Central Bank of Iraq to change our position. We held our ground, at least to our principles, and accepted a proposal for a scaled down loan of $500 million. When the first Gulf War broke out in 1990, all this came out. The Congress asked for the notes we had on the conversation with Chairman Greenspan, which we had. (The General Counsel was not a fan of these notes, but in this case, they served us well.) We came out as heroes having saved the American taxpayers $500 million.

over state member banks. We were the host supervisor for foreign financial institutions operating in the United States and we tried to make sure that things were right when we suspected that a problem might be occurring. The best example is the Korean crisis of 1997. (But another example involves Japanese banks in the same period.) The people in banking supervision and regulation, largely on their initiative, realized early in the year that there were a number of Korean firms—they were called *chaebols*—that were failing. We knew that Korean banks had many activities in the United States—offices in the United States that lent primarily to the Korean firms. BS&R put a watch on all the Korean institutions operating in the United States and insisted that they had enough liquidity to cover their immediate liabilities to U.S. residents; it was a ring-fencing operation of the Korean banks' activity here. So, when the Asian crisis arose and everybody said nothing could happen in Korea, we thought otherwise. The Fund said everything is fine in Korea. And I remember being on an airplane with Tim Geithner headed for Aisia and he handed me a memo from the Treasury staff that said the IMF says that everything's fine in Korea; they are not going to be affected by the Asian crisis. I told him that's not what we thought, because we had been worried about the Korean banks for some time, though we didn't know how bad things might get. That's an example of how we were playing the host role rather than relying on the home supervisor role.

MS. JOHNSON. One footnote to this ring-fence notion: Any time a firm goes bankrupt—a bank in particular—you'll want to be able to acquire control over its assets to make good on the claims that you have. So, if you take the position that the home country should control the worldwide assets of the given foreign firm or bank operating in your country—your country's creditors are just in line along with everybody else. Always there is a temptation for

you as the host to get your hands on liquid assets right away before anybody else gets their hands on them, and to use those assets to pay off creditors in your country.

MR. TRUMAN. By the way, that's not something the rest of the world likes about us. Moreover, in the wake of the BCCI case, there was a big debate about all this because, when BCCI failed, even though BCCI had very small operations in the United States—and those turned out to be illegal—all creditors in the United States got paid off even though around the world they didn't. That became a huge bone of contention with other countries, and it is still an issue today. The question is whether a financial institution and its various offices should be treated as separate entities or single entities? It was asserted by other countries, the British in particular at that time, that the right way to do it is the single-entity approach so that you pool all the assets and you pay off the liabilities proportionately. Our special relationship with the British in the BCCI case was not very special. In fact, it was very strained; the Bank of England essentially did not tell the Federal Reserve what was going on and disguised the fact that BCCI was operating in the United States without being properly licensed. We, however, glommed onto the assets that were in the United States when BCCI failed and paid off all domestic creditors, which the Bank of England didn't like. There was a big brouhaha about this. The Bank of England took this issue to the Basel Committee and to the G-10 governors saying there's only two ways of doing a resolution, single-entity and separate-entity, and that the United States is out of step with the rest of the world, and that the United States should change its law. It was quite noisy.

Having spent too much time with our lawyers here, I said "I don't think you're right. You've compared British law with U.S. law, but you haven't looked at the laws in the other nine G-10 countries. Why don't you go look at that?" It turned out that every country's law was

different. None of them matched either U.K law or U.S. law. All had some degree of separate-entity treatment. For example, you can think about a separate entity in terms of depositors, or in terms of creditors other than depositors. It was one of my small victories in practicing law without a license.

I think the point of your first question, however, is that the BIS increasingly played a role as a place where central bankers could come and discuss their problems, and problems that were common to all countries. The BIS was used as well to exchange views about how to be a better central bank and to exchange information about how to address, or whether to be concerned about, other problems in the world. There were multiple dimensions of this activity, such as the Euro-currency Standing Committee (ECSC) on which I participated for some years. The historical significance of the ECSC is that it was probably the only international entity, prior to this 2007-2009 crisis, which was in the business of what is now called macro-prudential supervision. As I noted earlier, the ECSC was set up by the G-10 governors in 1971 to worry about macroeconomic issues like the operation and implications of the Eurocurrency market—whether the Eurocurrency market was creating money. It also was the group that coordinated the collection and alignment of national data into international banking data, both cross-border banking data, and later consolidated lending data in the context of LDC borrowing. We used that forum to push other countries to improve their data even as we improved our data at home.

So, the ECSC considered both sides of macro-prudential issues—for example, how macro developments affected the prudential environment, such as the level of interest rates and their effect on international lending; and how prudential developments affected the macro environment, such as one country's increase in the reserves it required on foreign loans. It was the only such group in the world that systematically put out studies and considered issues of this

type in this period. When we had a crisis, the ECSC itself became increasingly important in exchanging views and influencing policies.

The Role of the Bank for International Settlements

MR. TRUMAN. We got to the early 1990s in this chronology about Federal Reserve membership in the BIS. Alexandre Lamfalussy was the general manager of the BIS and he was about to be succeeded by Andrew Crockett. Lamfalussy was moving to Frankfurt to head up what was called the European Monetary Institute, which was the forerunner of the European Central Bank. There was a concern in the management of the BIS that once you had a European monetary union—economic and monetary union—and a European Central Bank that was operational and in which many of the central banks in Europe would be participating, the BIS would essentially become a subsidiary of the ECB because the BIS would be dominated by the Europeans and their common institution. About 75 percent of the shares of the BIS would be held by the ECB or its central bank constituent institutions. So, the view of Lamfalussy and Crockett, I think in particular, was that maybe membership in the BIS should be broadened in a two-stage process from where it was in the early 1990s—from a European institution that invited non-member central banks to come to its meetings to a more global institution.

The first step was to get the United States to take up its seat on the board of the BIS and, at the same time, change the structure of the board to make the membership of the board itself the same as the membership of the Group of 10. Add Japan and Canada to the board because the other European G-10 countries were already on the board as founding members. Initially, Lamfalussy approached us on this, but then Andrew Crockett took over from him.[40]

[40] I am uncertain whether the first meeting was in late 1993 or early in 1994.

During the second phase, which was part of the original pitch to us, BIS membership would be expanded to more non-European countries; it would become much more of a multinational central banking institution—it would not be just a European central banking institution. I think Chairman Greenspan's posture was appropriately cautious, or characteristically cautious. He said, "It's fine with me. I have to check with the Board, obviously. But we're not going to spend a lot of political capital here in Washington to make this happen." Of course, the charter had to be changed too so that the Chairman occupied the principal U.S. seat. But since enough of the Europeans now wanted us in, fixing the charter, which required a special meeting of the membership, was not going to be a huge hurdle.

We took the matter to the Federal Reserve Board in early June 1994, and the Board agreed. Then we had to clear it with the State Department and the Treasury. Interestingly, Treasury had traditionally not been enthusiastic about this for the reasons that Karen described earlier; Treasury didn't like the idea of these central bankers going over there and conspiring among themselves without being under the watchful eyes of their finance ministries. At that time, the Federal Reserve's relationships with Treasury, with Undersecretary Summers as well as with Secretary Bentsen, were very good. So, Treasury, as well as the State Department, said okay. In each case, we received a letter supporting our membership. We did agree to consult as necessary with the State Department on any issues that came up in the context of the BIS that had international relations overtones—membership for China, for example—and similarly with the Treasury, including keeping them informed on issues.

In addition, the State Department, where we met with Secretary Warren Christopher, said, "Yes, but you should consult with the Congress, and consult not just with the banking committees which have jurisdiction over the Federal Reserve but with the foreign relations

committees as well. And you should consult on both sides of the aisle."[41] So we wrote a long, detailed letter to the chairman and the ranking minority members of each of those four committees and some of the subcommittees also. We included the Joint Economic Committee as well. We explained what we were doing and offered to go meet with them. Some chairs and ranking members took us up, some didn't. Relations were particularly difficult at that time with Henry Gonzalez who was chairman of the House Banking Committee. He was not receiving Federal Reserve guests, although this would have been an opportunity for him to express his disapproval of what the Federal Reserve was doing. I guess, his staff did not realize that there was such an opportunity, so he declined to accept our invitation.[42]

In a remarkable degree, the stars in Washington were aligned—the State Department, the Treasury Department, the Federal Reserve, and the Congress. There was an election in the fall of 1994; the Republicans swept to power in the House and the Senate. Everything changed after that election. It is not clear that we would have been in the same position if we had tried to do all this in 1995, including the fact that the Mexican crisis had by then broken out and the BIS was involved in managing that crisis, which was controversial in the Congress. We also had to sort out the question about changing the charter of the BIS, which as drafted in 1930 in large part by the FRBNY provided that the central bank representative of a country on the BIS board was from the office that was in the major financial center. There was an obvious solution to which the

[41] An interesting historical footnote is that Dan Tarullo, who later became a member of the Federal Reserve Board and represented the Federal Reserve at many meetings at the BIS, participated in the meeting with Secretary Christopher.

[42] One person we met with was Jesse Helms, who was the ranking minority member of the Senate Foreign Relations Committee. This is an interesting story, at least to me. Greenspan, of course, knew Helms, and I had worked with one of his former staff members, Dick McCormack, after he moved on to positions in the exective branch. Helms's staff had asked Dick to write a briefing note for the Senator on this issue, and Dick called me to talk to me about it. We went to the meeting, and Senator Helms first pulled Chairman Greenspan aside to talk about a problem with a bank in North Carolina. When we sat down, Helms said "I normally would be against something like this, but I can't think of a good reason."

Chairman and NY Reserve Bank president McDonough agreed: Since the Federal Reserve had two seats on the board, the principal seat could be occupied by the Chairman and the other seat could be occupied by the president of the Federal Reserve Bank of New York, though the person in that second seat is appointed by the Chairman. Most other countries that had two seats, which were only the founding members (which included the Federal Reserve), appointed their former governors to their second seat; it was a little awkward because some of the former governors were in the private sector by that time. The preceding governor of the Bank of England or the Bank of France tended to occupy the second seat. In our case, we were able to do it with the Federal Reserve Bank of New York, and that was broadly consistent with the the pattern that had been maintained all along—that the Federal Reserve Bank of New York and the Federal Reserve Board were both at BIS meetings, at least beginning in the early 1970s.

There were people at the Federal Reserve Bank of New York, however, who didn't like this arrangement and correctly thought that, if they just waited, it would go away. We had consulted the Federal Reserve Bank of New York on our memorandum to the Board, but Virgil Mattingly and I had to call the Bank and say, "You have had this draft memo for three weeks. We've asked for your comments. If you don't comment on it, we are going ahead without your comments." New York then submitted its comments.

MR. SMALL. This would have been after Corrigan left.

MR. TRUMAN. Yes, Bill McDonough was the president (1993-2003). The BIS had a special general meeting in September 1994 where the charter was changed, and we took up our seat on the board.

This is one of the few cases in which, by joining an international organization, the United States made money because as members of the BIS board, like any other board that you might be

on, the members of the board and their alternates get their transportation paid to meetings at the BIS and receive a little stipend. I was one of the alternates, and Karen after me, along with the Vice Chair. We had the payments deposited in the Federal Reserve, both the travel expenses part, the stipends, and the meetings fees. When I was here, I think, it netted us something like $100,000 a year. Moreover, since the BIS was paying, Chairman Greenspan could fly first class. He thought I was a genius for having done this, not necessarily because we made money out of it but because the BIS was paying first class and because this was a period in which, under the Clinton Administration, government officials weren't allowed to fly first class; they could only fly business class. I think we even checked all this out with the Justice Department.

So, having gotten the BIS board to where it was coterminous with the G-10, the second phase was to expand the membership. That involved a working group. There were three principals including Bill McDonough and Jean-Claude Trichet; Alfons Verplaetse of Belgium was the chair, which was a smart move because the Belgians were among those most resistant to change. I was one of the second-row people. We were negotiating an expansion of the membership, and this was easy to accomplish because there were shares available. These were the extra shares to which the Federal Reserve had not subscribed. You could make another central bank a member, in contrast with just being invited to the tea parties, by issuing them a small number of shares, not a large number, to which they subscribed. In the first round of expansion, we added nine countries' central banks; including Mexico, Korea, and Brazil, which are major emerging market countries. Russia was also added; some East European countries were already members including the three Baltic States. The Monetary Authority of Hong Kong and the People's Bank of China were also added at that time, as I recall.

MS. JOHNSON. China was admitted under you. The issue when I was IF director was China joining the BIS board.

MR. TRUMAN. Now membership in the BIS is in the low 40s, at least. All the major emerging market countries are members. South Africa had been taken in earlier. And you have several non-major countries, like Estonia, that are members. In a way, the BIS and the central banks were ahead of other international organizations like the G-7 which delayed for years in creating the G-20.

The BIS is an apolitical organization, so you do not have the same level of political sensitivities involved. There was some politics involved, there's no doubt about that, but because the central banks are more technical and technocratic, especially these days, it was easier to move forward. The notion of expanding the membership of the BIS was less of an issue than adjusting voting power in the IMF, which has not gone very far from transforming the Fund from a North-Atlantic dominated organization to a global organization. Subsequently, the BIS had a non-European general manager, Malcolm Knight. Currently, Guillermo Ortiz is the chairman of the BIS board (March –December 2009). The BIS has added the governors of the central banks of Mexico and China to the BIS board in their personal capacity not representing their central banks.

MS. JOHNSON. As an institution, there are multiple channels. There were all the people invited to the tea parties and, for a long time, the invitation list for the annual meeting was very long.

MR. TRUMAN. Yes, the annual meeting invitation list is still very long, including all the other central banks of the world and many international organizations.

MS. JOHNSON. And, on some of the committees, there would be people included if their countries played a role in the issue at hand. So, it depended on how frequently you came to Basel, how many meetings you attended, and what you did. There was the shareholding membership, and then there were the people who were on the board. And, like so many things, there were people who were being treated in some second-class way, who kept knocking on the door saying we'd like to play with the big guys; we want to get into all the meetings; we want to be treated as an equal. And that process has gone on. So now it's gone all the way, and the BIS board has been restructured as well to include non-G-10 central bankers.

MR. TRUMAN. In the initial phase, the BIS had a three-tier system. First was the annual general meeting, once a year, to which everybody was invited, no matter who you are, as long as you were a central banker. Second, there were the monthly meetings of both the G-10, which had separate meetings, and a broader group of central banks. These meetings were in sequence at that time and now have become merged I think. In some of the specialized committees (the ECSC and the CPSS), non-G-10 central bankers would be invited from time to time—partly on a rotating basis—to reach out to the emerging market countries to participate. Some of them were semi-permanent and some of them were more rotating.

MR. SMALL. By becoming a member, a country doesn't impose certain regulatory rules—

MR. TRUMAN. No. It's all rights and no responsibilities.

MR. SMALL. It's not where you join and at the same time accept some obligations?

MS. JOHNSON. No. And any country's monetary authority can be a customer of the BIS. The term "monetary authority," in this context, includes any entity of the government, in addition to the central bank, that holds the country's reserves. Such a monetary authority can be

a customer. You can be a customer of the BIS, which is different from being invited to the tea parties, which is different from being a shareholder member, which is different from being invited to all the meetings held at the BIS. The membership issue—and it is an issue—is all psychological and political prestige. Each time the membership was expanded, there were countries that weren't in yet. You would get letters of request, and you would have to indicate that those are pending issues for the next round.

MR. TRUMAN. In the first round of expanded membership, such comparisons weren't an issue because the expansion hadn't happened yet. You had the existing membership, which included the Federal Reserve in some sense, and it was just a question of transforming the internal structure. So, we took up our seat on the board, and added Canada and Japan to the board, which were already members of the BIS. That was round one and there was no knocking on the door. Then we had round two, which was the first round of expansion of the membership. Once you had done that, then you got the knocking on the door question because you took in Mexico, but you didn't take in Chile.

MS. JOHNSON. Argentina or other countries.

MR. TRUMAN. But we didn't take in Argentina or Chile; other countries were on the list proposed by the working group. It was reduced from what the group proposed to the first nine central banks that were added. Some Europeans were concerned that the system was rushing too fast. It was an interesting transformation because, in my view, the central bankers were ahead of the politicians and finance ministries in thinking about broadening participation in addressing global issues. It was good for the system as well as good for the BIS. This was the same transformation that you had at the end of last year (2008) when some of the major emerging market countries—including China—received ad hoc increases in their IMF quotas

and, therefore, in their voting shares. Later in the decade of the 1990s, we had the creation of the Group of Twenty, finance ministries and central bank governors, of the systemically important countries.[43] Last year you had the creation of the G-20 at the leaders' level.

MS. JOHNSON. Heads of state.

MR. TRUMAN. Well the principals are not necessarily heads of state, but they are heads of their governments; some of G-20 leaders are heads of state and heads of government, but the latter is relevant when a country has separate people in the two positions.

MS. JOHNSON. Right. The Queen of England doesn't count.

MR. TRUMAN. The expansion of the BIS is an interesting case in which the central banks were ahead of the curve (or not so far behind) with a response to globalization, just as in some sense the BIS responded to the issues of Herstatt, Franklin National, the growth of the Eurocurrency market, and international debt crises to become the natural place to discuss these issues. The BIS became important because it was a forum in which you could discuss these issues and try to reach common positions or understandings on the issues. Then you had the changing shape of the globe, and the central banks were ahead of the other groupings in being more open, although there were some politics involved as well of course. The evolution of the BIS was partly driven by the European politics because, if you had left things where they were in 1994, the BIS would have shrunk in importance. As an institution, it would have been thoroughly Europeanized. Now you could argue that the situation has its drawbacks; a case can be made that it's not all a question of jealousy on the part of the finance ministries about the central bankers going off in the corners and talking about these things. There are frank comments, and it's just as well that some finance ministers don't hear what is said in those

[43] For the record; when I was at the Treasury, I pushed for the inclusion of the central bankers on the G-20 as equals.

meetings by their compatriot central bankers. And you could argue that, by perpetuating this situation, it expands the independence of central banks well beyond the monetary policy arena. The trouble is that it's a gray area: The activities at the BIS extend beyond the monetary policy arena, and the existence of the BIS perpetuates the notion that central banks can have their own foreign policies and don't have to participate in the IMF, for example.

By the way, the Federal Reserve did check with the State Department in my day about who would be admitted into BIS membership. There are people within the Federal Reserve System, I suspect, who argue that this is a foreign entanglement of the Federal Reserve and that the Fed probably could do without it or they think that we should do without it. So, both within the System and outside the System, one could debate whether joining the BIS was positive. I think it was positive, but the fact that there are people on the other side of that issue is not totally surprising.

MR. SMALL. I understand how central bank officials, maybe the finance ministers, might want their country to be a member. Do the private sector banks in that country have any—

MS. JOHNSON. They don't know about the issue; they don't care—it doesn't even enter their heads.

MR. TRUMAN. It's essentially an issue of prestige because you didn't have to be a member in order to be invited to the meetings.

MS. JOHNSON. But then there were tiered meetings along the way once you have changed the relationship. Ted and his subcommittee, in that first round of new members, set off a domino effect of trying to change the meetings because these central banks are now members and their representatives know there are meetings to which they are not invited. So, it's a never-ending process.

MR. TRUMAN. That's an example of the kinds of things in which the Federal Reserve and the Division of International Finance specifically got involved in and certainly some of them were more momentous than others. The BIS probably could have gone ahead and expanded its membership if we had said that we don't want to take up our seat. We could have maintained the status quo as an important non-member, but it would have become increasingly anomalous. One consequence, perhaps, of our decision was there have been two Governors who have chaired committees. For example, Don Kohn was the chairman of the Committee on the Global Financial System (CGFS) and Roger Ferguson was the chairman of the same committee.

Roger later became chairman of the Financial Stability Forum (FSF), which meets in Basel and is an ingredient of what is called the Basel Process, but technically it's a separate organization, as the Basel Committee on Banking Supervision is now. (Originally, as I noted earlier, the Basel Committee was under the central banks and would report to the G-10 central banks. That's been adjusted in light of the fact that central banks have become less involved in banking supervision than was the case in the 1970s and of the fact that there are non-central bank supervisors on the Committee.) But unlike the BCBS, which started out as a creation of the G-10 central banks meeting at the BIS and subsequently was partially liberated from the central banks, the FSF was established as an independent body from the start largely by the G-7 finance ministries that wanted to have more influence over supervisory and financial stability issues. It so happened that the consensus choice to be the first chair of the FSF was Andrew Crockett, then general manager of the BIS, and the initial location of the secretariat was at the BIS in Basel, but I know from being at the U.S. Treasury at the time that the finance ministries were at pains to say that these central bank links were not necessarily precedents. But they have become precedents. Each chair of the FSF and its successor, the Financial Stability Board (FSB) with an expanded

membership which the G-20 blessed in early 2009, has been a central banker and the secretariat remains in Basel.

The fact is that the Board and the NY Fed are now full card-carrying members of the BIS and the central banking community, and that fact that we didn't subscribe to those extra BIS shares—for which the Belgians have never forgiven us—has meant that in central banking circles, we have carried a little more weight. As I said, it would have been more difficult to imagine Don and Roger becoming the chairmen of the CGFS if we were not members of the BIS and the BIS board though, of course, these are committees of the G-10 governors, or were at the time. It's possible, but it would have been a lot more awkward for the CGFS.

MS. JOHNSON. And William McDonough chaired the supervisors, right?

MR. TRUMAN. Yes, but that is slightly different because the supervisors had become de jure independent. That was—and remains—another complicated aspect in the relationship between the BIS as an institution and the various entities that meet in Basel at the BIS. I think, Dave, that this tension or confusion is the source of your question about the relationship between the banks of a country and that country's central bank being a member of the BIS. Some committees now meet under the auspices of, or at, the BIS—in particular the Basel Committee on Banking Supervision. On the one hand, not all members of those committees are from central banks. On the other hand, their decisions, such as the Basel I, II, and III capital accords, affect banks in other countries. The membership in those committees does not come close to including all countries whose central banks are members of the BIS. Moreover, agreements reached in the Basel Committee, for example, are not backed by implementation or tied to enforcement procedures other than to confirm that countries who agree to them are implementing them. The actual implementation—changing laws, regulations, and rules—is all done at the national level

as the agreements subsequently are, or are not, implemented. Yes, there are resulting tensions, but those tensions are essentially unrelated to membership in the BIS per se.

MR. SMALL. And the Basel Committee has been pushing risk-based capital standards? Was the Basel II the risk-based part—

MR. TRUMAN. No, the risk-based element was part of the first round, Basel I.

MS. JOHNSON. It's all a question of how you measure the risk. Is it because something's on a list? Or does it have to be more complicated than that?

MR. TRUMAN. Basel I had various risk buckets that were rather crude or broad. The accord involved both assigning risk-weighs to those buckets and the definition of capital—Tier I and Tier II. Under the accord, the amount of capital held against certain assets would no longer receive a risk weight of 100 percent, as is the case with a simple leverage ratio. The risk weighting was the first part of the accord; the second part was to have a better or more consistent way of determining what capital is. Banks then, and even now, are allowed to include more than common equity as capital. The objective of Basel I was to raise the level of capital based on a common set of definitions for all internationally active banks and to recognize, for better or worse, that some assets were riskier than others, or less risky than others if you start from the position that all assets have the same risk. Basel I also established, as I just noted, a common understanding about what constitutes capital. Then Basel II was an attempt to refine all that in great detail.

MS. JOHNSON. Yes, right. It will make it more sophisticated.

MR. TRUMAN. The negotiation or renegotiation of Basel II started when I was still at the Board, but IF was not particularly involved in that process. Initially, in the distant past in the 1970s, someone from IF regularly attended Basel Committee meetings. Bob Gemmill attended,

but we essentially lost our seat to the Federal Deposit Insurance Corporation in the 1980s, and our seat was put in the second row and later eliminated. The aforementioned IMF legislation in 1983 mandated that the FDIC have a seat on the Basel Committee. I think the OCC already had a seat; so that the Board, New York Reserve Bank, the OCC, and the FDIC all have seats at the table. In the context of adding the FDIC, we lost our seat. We continued to follow the issues but less so the details of the Basel II negotiations, which were in turn a debate between R&S and BS&R.[44]

We did get involved in one issue: the risk weight applied to claims on other sovereign countries—for example, Mexico, Brazil, or Singapore. The issue that always came up was do you have a different standard for U.S. bank lending to Canada, for example, and U.S. bank lending to Mexico, just to cite those two examples. The way the Basel capital standard was written the first time around was that, if the country was a member of the OECD, it got one risk rate and, if the country was not a member of the OECD, it got a higher risk rate, a 100 percent risk rate. The matter got complicated when the OECD admitted countries like Mexico and Korea. Basel I and II (and III) established a minimum capital requirement, so some countries exercised their right to apply higher standards; a number of them did. The G-10 governors agonized over all this.

One of the things that contributed to Basel II was that there was this painful process about how you drew this line in terms of sovereign risk and the capital requirements. We were involved in establishing the initial compromise, as I indicated earlier, and also got involved in

[44] Interestingly in the 1980s when Basel I was being negotiated, R&S played little or no role and had no interest, as far as I can recall, in what was going on in Basel. By the time Basel II came around, they were extensively involved and conducted great debates with BS&R about how to go about all this, including the advocacy of the so-called precommitment approach, in which, if I remember correctly, banks were to declare ex ante how much capital they needed based on certain criteria for their portfolios, and had to adjust that capital later if their assumptions proved to be incorrect.

subsequent efforts to refine the standard in this regard. We essentially demonstrated that you could not find a set of indicators that would precisely discriminate between the countries you wanted to be on the A list and the countries you wanted to be on the B list. We spent a lot of time looking for those indicators, but any set of indicators that would create an A list and a B list would create anomalies to the great frustration of some of the G-10 governors who were then still heavily invested in these issues.

Chairman Greenspan understood this right way—that in some sense this was an impossible task. But periodically the G-10 governors would say, “Oh this is horrible, we have to fix this system so the technicians have to go find us a screen that produces the result we want.” And of course they had the same thing in almost every dimension of the Basel capital standard; this was one reason why they ended up in Basel II with such a complex system.

MS. JOHNSON. Once you get any standard, you get regulatory arbitrage so, again, the idea that you could fix it for all time or even fix it for five years was probably naïve.

MR. TRUMAN. Correct. Basel II was essentially completed in 2000. When I left the Treasury, I thought it had been agreed though, to his credit, Larry Summers felt that it was excessively pro-cyclical. However, Basel II wasn’t finally agreed to until two or three years later.

One of the bigger diplomatic mistakes the Federal Reserve ever made in this area, in my view, is that it decided that it was going to switch the way it was going to treat the various U.S. banks under the Basel standard. At a late date, the Fed, which did not in fact implement Basel II before the 2007 crisis broke, decided to apply Basel II only to the top 20 U.S. banks, which was technically within our discretion because the standard, to begin with, was designed for internationally active banks. The Fed didn’t have to apply it to the 8,000 other banks in the

United States even though in the case of Basel I the Fed and other U.S. regulators applied it to all banks. The mistake the Fed made—and made a lot of enemies in the process—was not that it did what it did, but the Fed didn't say it was going to do it until the end of the negotiations rather than in the beginning. It certainly was my understanding when I left the Board in 1998 and when I left the Treasury in early 2001 that Basel II would be applied to all U.S. banks. I know the Fed earned a lot of enmity because of the decision that was made by the Board, or maybe it was forced by other regulators, but the Fed took the lead and the heat. And the Fed still hasn't implemented Basel II, though I guess it has now promised to do so (as we were speaking in 2009).[45]

MS. JOHNSON. Yes, but then the crisis hit.

MR. TRUMAN. Yes, the Fed is now compromised in the context of that crisis.

MS. JOHNSON. Part of the problem is the complexity. So as the Basel II agreement led to a more and more complex system, it was asserted that small banks in Podunk, Nebraska, don't need this system. They can't afford this system. It's anomalous for them to have such a complex system and so this was a compromise.

MR. PROMISEL. The much more serious issue is how to apply the Basel standards to banks in most countries around the world that do not have sophisticated banking systems but have felt obliged to adopt the Basel standards. The U.S. regulators can easily take care of Podunk banks.

MR. TRUMAN. Presumably, this oral history process will cover these issues from other Federal Reserve perspectives, which may well be different from mine.

[45] In fact, writing in 2017, it skipped over Basel II and began to implement Basel III.

MR. SMALL. I have two questions; one is about financial contagion and freezing up. We've talked a lot, on the BIS, about banks or depository institutions and dealing with their capital. What about moving more into circumstances where whole markets freeze up—a market that might have a lot of small non-depository institutions trading in it.

MR. TRUMAN. The mandate of the Committee on the Global Financial System is not just to focus on banking; it is to focus on a global financial system. That was one of the reasons why when they had to transform the name, they chose the current name. The G-20 governors had to take "Euro" out of the name of the ECSC—it was anomalous anyhow—when the euro came into existence. At the BIS, in any case, you had studies of derivatives, electronic money, and the sovereign bond markets, which involved all the various committees. One of the other committees that meets at the BIS is now called the Markets Committee; it used to be called Gold and Foreign Exchange Committee.[46] People who were on the operational side of central banks would meet monthly and exchange views about what was going on in foreign exchange markets principally, but increasingly in financial markets in general. Starting in the early 1980s (but the first survey may have been in 1978), this committee sponsored a survey of foreign exchange turnover, which the Federal Reserve had initiated a few years earlier. That survey was later expanded to cover derivatives activities. So, the BIS is very much a place where central banks cooperate on various market-related issues and have been involved in the broad aspects of the changing nature of the global financial system. Part of it is data collection, part of it is thinking about issues, including issues of contagion and markets freezing up.

[46] This Committee is now more prominent than it was before I left the Board in part because in the past it had discussed and exchanged views on sensitive market issues. It first started meeting in the early 1960s.

MS. JOHNSON. A lot of the BIS member countries practiced universal banking at a time when we had far more separation between banking and other financial activities than we now do. That separation never seemed as obvious to them as it might seem to you.

MR. TRUMAN. One of the reasons why the notion of going back to Glass-Steagall doesn't cut it with me is because most of the world doesn't have Glass-Steagall, never had Glass-Steagall, as Karen said. So, if the absence of Glass-Steagall restrictions caused the problem in the recent financial crisis, why had it not earlier caused problems elsewhere?

The other G-10 govenors' sponsored committee that has become increasingly important at the BIS is the Committee on Payment and Settlement Systems, which again is into the nuts and bolts. Bill McDonough was chairman of the committee.[47] That was before we joined the BIS, contradicting what I said earlier about not chairing BIS committees until we joined. The Payments committee was concering about settlement risk in foreign exchange transactions arising from the fact that settlement is not in real time or the same day. So, we now have created this international bank that isn't directly involved with foreign exchange transactions. It is essentially a clearing bank—an entity that clears foreign exchange transactions and stands behind them so you don't have the payer paying but the receiver not receiving. This clearing function is needed because you can't have same day settlement in foreign exchange markets around the world because not all markets are open at the same time. One could do it in principle, but those kinds of plumbing issues also have been a very big feature of any payments system. Tim Geithner was also chairman of that Payments Committee when he was at the Federal Reserve Bank of New York.

[47] It is now (in 2017) called the Committee on Payments and Market Infrastructure.

MR. SMALL. Suppose you're the Chairman of the Federal Reserve and you receive a phone call that there's some big international financial crisis involving, for example, Russia or Thailand. As Chairman, whom would you call? You might call other central bankers, other finance ministers, or maybe the IMF. Is it too late to call the BIS? Whatever the BIS has studied and put in place is what you have to go with? Or is the BIS very involved in the clearing mechanism so that it would also be important in the middle of a crisis?

MR. TRUMAN. No. The BIS in Basel is a place where people go to meet. They are not generally operational, with some exceptions such as a few loans they may make.

MS. JOHNSON. And they are not at the table during the negotiations; they are not like the IMF.

MR. SMALL. And they are not running the clearing bank?

MR. TRUMAN. Correct. But they do staff the committees that study these issues. So, some of the relevance of the BIS depends on what you're talking about. The documents that come out of the CGFS may be largely drafted by the BIS staff. It depends a bit on the topic and how the topic got on the agenda.

MS. JOHNSON. It depends on the circumstances. If it's Friday morning and you need to make an announcement by 3 o'clock Sunday afternoon because it has suddenly become known that some major financial institution outside the United States is going to have some big problem, then the BIS is not the place where you bring together the people to negotiate a rescue over the weekend. But the BIS is a place where you might execute part of that rescue; it is a place where you might come to meet with the relevant people conceivably later.

MR. SMALL. If the market is crashing, let's say during the day—

MR. TRUMAN. The BIS would not be involved other than as a minor market participant for their own account. But the BIS is the place where you would come together to learn the lessons, and to apply those lessons for the future.

MR. SMALL. But they don't have their finger on any important part of this.

MS. JOHNSON. They are not politicians. They don't have control over anybody's tax revenue sources to muster other people's money to bring to bear on rescuing some contract.

MR. TRUMAN. They are in the crisis prevention business, improving structures and so forth. They are not in the crisis management business.[48] They provide a venue for crisis management so if you have an ongoing issue, whether it's Mexico or Brazil or Thailand, people come together eight times a year, at least in my day—less often now—with an opportunity to exchange views and, in that sense, do business.

I found, and I'm sure that Karen did too, that the BIS was not just the governors' meeting in which you sat, or just the expanded group meeting of governors in which you also sat, or the meetings of the Euro-currency Standing Committee, but it was also a place where you saw other central bankers. So, if there was some question about what was going on in Belgium, there would be someone there to whom you could talk. It tended to be G-10 central bankers to whom you talked, in my day, so it was less Austria and more Belgium. But as you expanded the group, it meant you also got to know, and could conduct business or share information or get information from, your counterparts at many central banks, such as the central bank of Brazil. That, in turn, meant that, when something happened at 3 o'clock on a Friday afternoon, it's more likely that I or my successors would have the name and even the telephone number of someone at the Bank of Korea. I could rouse them. I knew whom to call short of placing a call from the

[48] There was a meeting of central bank representatives in Basel at the start of the Mexican crisis in August 1982. But that was an exception. We did use the BIS to mobilize multilateral support for Mexico and other countries.

Chairman to the governor of the institution. So, it was part of the network and indeed the various committees have more elaborate emergency communications systems today.

MS. JOHNSON. The BIS is an infrastructure, facilitator, and stock of human capital. They are not politicians; they don't have any authority to negotiate these resolutions to require a finance minister or a central bank or an elected official to do anything. They provide the context in which all these things can happen, but they don't drive the process.

MR. PROMISEL. Basically, as was pointed out above, the BIS is self-financing and does a very good job at that, so it alone has the money to spend on hosting meetings. The ability of the BIS to host meetings, pay for committee staff, serve fancy wine (at least until Crockett curtailed that a bit), etc, is no small factor in its prominence.

MR. TRUMAN. Yes, that is true; however, at least in my experience, the BIS can initiate ideas. The general managers—Lamfalussy, Andrew Crockett, or Malcolm Knight—have often been prominent, experienced international personalities. Like the OECD, the IMF, and the World Bank; the BIS can provoke and instigate a process of thinking about issues. One of the advantages of the BIS is that it is much less public or political than those other institutions. The managing director of the IMF talks bilaterally to finance ministers and central bank governors and comes to Basel from time to time, or his predecessors used to. More often than not, the managing director communicates via a speech that he gives somewhere rather than in private at the BIS. The general manager and staff of the BIS prepare background notes for meetings and can, sometimes in the formal meetings or even in informal meetings of governors, raise provocative issues and say, "don't we need to think about X, Y or Z?" Much as, in some sense, it works the other way around: To use that example again, Paul Volcker went to meet with his

G-10 counterparts to say, "I'm warning you. Mexico is a big problem and we're likely to have more problems." That was using the BIS as a communication device.

But in other times, central bankers themselves would say we should think about X. An example was the process, which I think we discussed earlier, that led to collective action clauses being added to sovereign debt contracts. That started as a central bank exercise within the BIS in the wake of the Mexican crisis. It was expanded to include the G-10 finance ministries at the time, and then was restarted after the Argentine crisis in 2001 as an initiative to bring about that change. But it started, whether it was the initiative of the BIS management or staff, or central banks as a collective discussion of what were the lessons from the Mexican financial crisis in 1994-95.

Advancement of Minorities at the Board

MR. MARQUEZ. Let's discuss the functioning of the Board as a whole, beginning with the advancement of minorities. Was the Fed behind the curve?

MR. TRUMAN. Public institutions should make every effort to be as open as possible, and when these issues arose over time I was as supportive as I thought appropriate. First, I was told to pay more attention to these issues, but it wasn't just for that reason. I was being asked to do the right thing. Any institution like the Federal Reserve, because it is to some extent insulated, is going to be a bit behind the curve. That is also true for economists in an elite institution like the Federal Reserve. It draws people from the best universities for the economist job family. Although, the Fed looked at who was coming onto the job market from the top 25 or 30 universities, almost all our hiring was from the top 10. It was rare that we hired outside the top 10. That meant that we were relying on the sorting process that got people into Harvard,

Yale, Stanford, MIT, and Princeton, along with all of their biases. It was efficient to use them as a sorting mechanism.

When I was at Yale, I ran the graduate admissions process in the department of economics, so I knew something about how people got there, at least for a while. The trend among women economists was that there wasn't any trend. Twenty-five years later, Yale was putting out the same number of female Ph.D.'s that it was putting out in 1970, four or so out of 20 or 25 a year. Not many women were attracted to the economics profession, few choose to major in economics, and therefore few went on to graduate school. It has changed since the mid-1990s, but it is amazing how little has changed over the last 50 years.

I was supportive of correcting this gender imbalance, maybe partly because my father was the president of a women's college (Mount Holyoke) that chose to remain a women's college when he was there, and therefore he said it should no longer be headed by a man. I tried to actively recruit and support women economists; Janet Yellen is one example; Karen Johnson is another.

For African Americans, it was even more complicated because we were competing with the academic institutions on which there was even more pressure for diversity. If you were a smart enough African-American, the chances are that you were going to have better career opportunities in places other than the Federal Reserve. So, there was not a large pool of applicants.

I supported the dissertation fellowship program that the Fed constructed for minority candidates. Later it was decided that it wasn't clear that we could do what we were doing, so we had to scale it back. But I thought that program was a useful way of, at least, signaling to the potential candidates where the institution stood. Jim Kichline, then director of R&S, and I

shared the same attitude. I was frustrated to some extent by the pressure one got from the personnel division who seemed to think that all economists were the same—that every Ph.D. is of the same quality. They didn't fully recognize that it is not fine to hire somebody who has a third-class Ph.D. just because they happen to be a minority. If you hire such a candidate, the chances are that they are not going to be happy later on with their rate of advancement or non-advancement; at that point you've got a second, more serious problem.

You had to have some balance. In some sense, that was almost inevitable. Given the kind of elite institution this is, there's going to be a tendency to perpetuate its way of doing things and always look in the same places for candidates. When Karen chaired the recruiting committee, we became more systematic about where we looked for candidates. That was intelligent and inherently responsive to the needs of the Federal Reserve, so we could say that we've looked at the top 30 schools, not just the top 10, and tried to cast our net as widely as possible so we could give everybody a reasonable chance. When Alice Rivlin became a Board member, the Board instituted a program of early retirement. That was done partly for budgetary reasons and partly to shake up the staff so that there could be more promotion opportunities. The aim was not to have quite as many Anglo-Saxon males in top positions. The Board probably was behind the curve, given the nature of the organization. But the Board responded to public opinion and has done reasonably well.

Board Culture

MR. MARQUEZ. Was either the Chairman or a Board member attempting to bypass you as a division director in trying to get help from IF's staff?

MR. TRUMAN. As far as I was concerned when I was division director and as far as the Chairmen were concerned, that was not particularly an issue. Burns didn't choose me until he

was comfortable with me. I was able to earn the trust and respect of Chairman Burns and the three other chairmen. But assuring that other people got face time with the chairman was a more complicated problem. The Board members are in a different category because it depended on who they were and what they were interested in. There was some tension when Board members wanted to have an assistant who came from the staff, but I was fine with that. If I had to choose between a special assistant who comes from the staff or one who doesn't come from the staff, I'll take a staff member anytime. But if it's a way to bypass division directors, it gets more complicated. One of the jobs of the division director is to allocate resources and to balance the demands of the various requests from Governors and the Chairman, so that you are being equally responsive. So, if you have an International Finance division, and each Governor has its own International Finance division, it can be a little more complicated to manage the place.

Vice Chairman Alan Blinder, when he arrived, sent a memo to the staff that said, "I want you to come to my office with your ideas and don't bother to tell your division director." That was a problem for exactly the reasons I just described. All the research division directors—all three—in their own ways, reacted negatively. It was not that I wanted to be a traffic cop that would say no or yes: I just didn't think it was fair to the division or me if there was a second channel of communication about a whole variety of things. A Governor who felt otherwise had trouble adjusting to the way the Board's culture worked. On the other side, an example of someone who had equal interest in the nitty gritty of what went on with the staff was Governor Meyer. Initially, he was uncomfortable about the traffic cop role that I and other division directors assumed. But once he trusted you to give him a full range of views, either in the people assembled to talk with him or about their papers, he was fine.

MS. JOHNSON. Sometimes we get the sense that some of the Governors who had been academics had difficulty in settling into a different structure here at the Board and a different routine for thinking out loud and sharing ideas. Did you have any sense that Governors who had been academics, in particular, come to the Board and find it intellectually isolating to be in their office on the second floor? They're used to interacting regularly with their fellow faculty members. They're used to having a cadre of students whom they not only get to do tasks for them but whom they talk economics with and so forth.

MR. TRUMAN. Yes. I think that's right, and that's what I meant by the Board's culture. It is a different culture and somewhat more challenging for some rather than others who were coming from an academic culture, such as Alan Blinder. Janet Yellen went to the CEA (1997-99) where there was no distinction between the Council members and the small staff because they all lived together. And the Board has its structures, right? So, one could try to respond to that, and I always tried to respond to that by inviting the Governors to seminars, which was maybe not full interaction. Occasionally some did attend.

Over time, the division directors—Jim (Kichline), Steve (Axilrod), Mike Prell, Don (Kohn), and I—learned that you had to try to treat everyone equally. The perennial question was why can't Governor X sit in on the GNP forecasting meeting? The answer was that doing so would mean that Governor X would have a leg up on, and maybe even have some more influence on, the GNP forecast over the other Governors. I thought that was tilting the table somewhat.

With some of the later Governors, I advocated what I thought to be the better model that was followed by Chuck Partee and Lyle Gramley who, in turn, were following the model that was used when they were on the staff, but most Governors never picked up on it. The model was

to ask pointed questions in either the Economic and Financial Review or in Board briefings. Ask pointed questions so that you force the staff to think about the question on their feet, in the Board Room, but also when they go back to their offices. And at the limit, as many times as Partee and Gramley did, say to the Board as a whole, "The staff should prepare a paper for us on X." The Governors who did this were effective because they raised the issue, they then got the staff to write a paper, and they then forced the Board to sit through a dissertation on the subject. That was much more effective, in my view, in influencing their fellow Board members and FOMC members than if they were able to have an inside peek into what the Greenbook process was. In that case, they would have had inside information, but they would have had very little capacity to influence the thinking of the Board members.

Wayne Angell also did this rather than having a personal staff approach. He turned the staff upside down thinking about targeting commodity prices in our monetary policy. He didn't do it by going to the people in R&S who worked on commodity prices, and working with them, though I assume he met with these people. He did it in the context of Board briefings. So, he educated the whole Board and the FOMC about how he was thinking about commodity prices and the role they should play in monetary policy. I think he was much more effective than he otherwise would have been because of that than other Governors who didn't use that particular strategy.

I am sure that I offended some Governors as I managed this process. I probably did take things more personally sometimes than I should have, but that goes with the territory.

MR. MARQUEZ. What is your view on whether members of the Board staff should become Governors?

MR. TRUMAN. It would not be a good idea if the Federal Reserve followed the pattern of many central banks where there was a sort of progression completely from within. That is not consistent with our broader political culture. It is always helpful to have Governors who know something about the Board, who know something about the culture, but that could come from various dimensions. One of those dimensions could be direct promotions. Another would be people who had been on the staff. There are quite a few of Governors over the years who were Federal Reserve staff members; for example, Ned Gramlich, Janet Yellen and Martha Seger. But on the whole, I think it would have been a disadvantage to assume that one or more former members of the staff always should be on the Board.

Of course, I aspired to becoming a Governor. I made a couple of lists, but never made it to the finals or even inteviews. And I think it's nice not to have the reverse case—that staff can never be directly appointed to the Board. For example, one of my colleagues, Jeff Shafer, when he left the Board and went to the Federal Reserve Bank in New York, said, "I would like to be a member of the Board. But I figured out the only way I can do that is if I leave the Board." He officially left for the Federal Reserve Bank in New York. He thought his next step would be to work for a financial institution. Then he would be in line to be appointed to the Board. He thought the only way to get on the Board was to leave the Federal Reserve. In the end, he became assistant and then undersecretary of the Treasury, which is much more important.

Writing Experiences at the Board

MR. MARQUEZ. What were you exposed to at the Board that seemed really different to you?

MR. TRUMAN. It was the writing experiences. It was a long time ago, but I had the experience of working with Lyle Gramley on testimony for Chairman Burns. In fact, it was a

testimony in 1974 in which Burns announced a change in Federal Reserve policy in the direction of fighting inflation. It was challenging, and I learned a lot from the process. I wasn't sure I liked what I learned. Writing testimonies is a tough art and not something that you learn in graduate school. It forced you to go through a different process. I learned from Burns, for example, that you have to find facts that support your positions. You might have the positions before you have the facts, but you need supporting facts. He insisted that every statement be supported by facts. That was a rather intense experience. The Board also reviewed his testimony and I sat through that process.

Another time Chairman Burns asked me to write about the consequences of dissolving the IMF. I had never written that type of research paper before and I worked hard on it. That certainly followed a different pattern.

The most demoralizing experience that I had drafting something was with Volcker. When he became Chairman, I had known him from when he was at the Treasury and when he'd been at the Federal Reserve Bank in New York. So, I had had more contact with him than the other division directors had had. Anyway, he was a new boss, and you have to work to satisfy and make a good impression on your new boss. Early on, I drafted a testimony for him. He took it and completely rewrote it. There wasn't a complete sentence that he hadn't fiddled with. It was rather demoralizing. I was crushed. He handed it to Catherine Mallardi, his secretary, to retype. The good news is that I was only crushed for only about 36 hours, because he took the second draft and completely rewrote that too. [Laughter] Later, I talked to him about my experience. He said, "A good draft makes a lot of difference. You can't get started unless you have a reasonably good draft to begin with." He happens to be the type of person, as I saw it, who thinks with a pencil in his hand. Until he writes something down, he is not entirely sure

how he wants to think about it. His view of the world is sufficiently nuanced that words really matter. Generally, he doesn't live in a black and white world, so that he wants to put the words down exactly the way he wants to put them, and he made changes to mine and his over and over again. That just happens to be how his thought processes work. But it certainly was demoralizing to go through that process the first time.

Not all the Governors are the same. We worked equally hard on the first speech we did for Greenspan, and he literally changed two words, and quite frankly we were shocked.

MS. JOHNSON. That didn't last. [Laughter]

MR. TRUMAN. Yes, it did not last. There was a progression from when he would change two words, to where he would write big chunks of the testimony himself. Then the person who was responsible for writing the rest of the testimony somehow had to integrate what Greenspan had written with the rest of the outline. Greenspan tended to write his own stuff in his later years. That's quite different than rewriting your stuff. Then there was this marriage problem between his material and your material. He went from not doing any drafting to, by the time I left in 1998, doing a lot. It would be in big chunks. His thoughts about X, Y, and Z, and how they're all related to each other.

Different Governors and Chairmen had different work habits when it came to speechwriting. Some Governors relied heavily on the staff for writing speeches. Some wrote the speeches themselves and never showed them to the staff, including Public Affairs, until they were released. Some Governors often sent their speeches to you for comments; some comments were taken and others were not. A few governors, as well as most Chairmen, asked for initial drafts. So, there was a wide range of differences in that particular area, a wide range of different

patterns, and, coming back to the earlier question, one had to adjust to the particular work styles of the Governors.

Was there a difference between Congressional testimony and speeches? Yes, but again it depended on the Chairman or Governor. Testimony was on behalf of the Board and generally went to the Board for comments; sometimes the Board met to consider testimony, page by page. Speeches were more personal and, in principle, informal. But for some Governors and certainly most Chairmen, even those speeches, in my experience, required a lot of back and forth.

Management Styles

MR. SMALL. How do division directors manage their bosses?

MR. TRUMAN. I am sure that all division directors did, in some sense, try to manage their bosses, meaning the Board. It wasn't always easy, and I sometimes got into trouble. Depending on who the Board members were, there was a tendency for some of them to think that all the divisions work only for the Chairman and they only get one small slice of the pie, or the crumbs that come off the pie plate. I don't think any of the division directors thought that way. Maybe it is a little different for BS&R these days or even in my days because that is a larger division and required more management. The structure relative to the Board was different, for example, for BS&R. The Governor who chaired that committee had a different relationship with the substance than the other Governors had in my day, though that evolved under Greenspan. Volcker dealt directly with BS&R on all their issues as far as I could tell. In that sense, I as division director did manage my bosses because I tried to be a traffic cop both in helping them, guiding them, getting them to ask you the right questions rather than the wrong questions, and being responsive to their questions. I'm sure that, in some cases, I was more responsive to some Board members than to others. All of the division directors had large divisions, so we didn't

spend a lot of time looking over our shoulders. Mike Prell and Don Kohn came out of the same division, which got split up, so they may have had a lot more learning from each other and from Steve Axilrod and Jim Kichline than I did. There wasn't a particular process by which we learned from each other.

Compromising

MR. SMALL. Was there ever a project, a speech, or a position taken, where you disagreed with what the Governor wanted? If so, how do you handle that?

MR. TRUMAN. Notwithstanding that I am a strong-willed person, in the end, they were the bosses. But I also felt it was my job to argue with them and to try to convince them that I was right. Early on, when Greenspan was first here, he had spoken once to a visitor and then once to a visiting group about some way of thinking about the U.S. balance of payments. Afterwards, I went in to see him. I said, "Mr. Chairman, I think you're wrong; you're completely exaggerating what you're talking about." He said, "Thank you. I rely on you, Ted, to correct me when I'm wrong, or when you think I'm wrong." Part of his intellectual modus vivendi was to think outside the box. If you spend a lot of time thinking outside the box, you're going to be truly outside the box a lot of the time. So, people pushing him back on things like that, he said, and I believed, he valued. Not that he wanted you to be challenging him in the Board Room necessarily. That would've been awkward. But he and other Governors were responsive, if you could convince them to hear you out.

Henry Wallich, whom I knew personally before I came here and before he came here, also could have outrageous ideas. You gave him your comments on his speeches or papers, and he went off and gave the speech, or paper. That's what he did. You give it your best shot.

I suppose there could've been a circumstance in which there was some matter of high principle, where the only choice is to resign, if you don't agree. But nothing in economic policy rises to that level in my view, since we really don't entirely know what we're doing anyhow.

One other lesson I learned from Volcker, in particular, was from watching his decisionmaking process. Most important issues are not black and white in the sense that 90 percent of the argumentation is on one side and 10 percent of the argumentation is on the other side. They're more like 48/52, and the challenge is to find out where the 52 is. Once you recognize that, then the fact that you think the 48 is the 52, rather than the 52 being the 48, is important, but it is not crucial. Now maybe that compromises your principles, but I guess either I didn't have that strong principles or I was able to convince myself that what we were doing was right. Even when Volcker presented the new operating procedure to the FOMC in October 1979, he did it in a way that it was pretty clear that he saw the decision as 52-48 to do this, not obviously 75-25 or 97-3. At least that was how the change was presented, who knows what he actually was thinking.

MR. SMALL. You said that when you challenged Greenspan, he thanked you.

MR. TRUMAN. He said, "I want you to do that.'" It wasn't easy.

MR. SMALL. An unfair image, perhaps, is that you would not have gotten that response from Arthur Burns; he was much tougher. Is that an unfair characterization of Arthur Burns?

MR. TRUMAN. Probably; he was much tougher, and the relationship between Arthur Burns and I was different, too. He was much older and I was much younger. I do think I challenged him a few times. I can remember one time when he accused me of being a knee-jerk Keynesian. [Laughter] So I must've challenged him or he wouldn't have called me a knee-jerk

Keynesian. Part of my relationship with Burns came from the fact that he knew my father from when they both were at Columbia on the faculty.

Chairman G. William Miller

Chairman Miller is the basis of one of my favorite stories about life at the Board. When I first came here, the Board had academic consultants' meetings. There was a fixed stable of academic consultants. Plus, they added a few young Turks, like Bob Hall. You had Tobin, Friedman, Samuelson, Solow, and then Bob Hall or someone like that. When Miller first came, they had a meeting of the consultants. The Board Room was being renovated, so the meeting of the academic consultants was held on the top floor of the Martin Building. At the last minute, Miller was called to a meeting at the White House or the Treasury, so he wasn't going to be able to stay. They had a fairly set order for all these discussions. The agenda was organized by an outsider, who acted as chairman. So, there was an arm's length relationship. Miller came in, and he apologized for having to leave right away. He said, "Let's go around the table, and you can each give me your advice about monetary policy," which is what that they usually would do at the end of the meeting. Someone spoke. Then Milton Friedman spoke and he said, "I've been coming to these meetings for 30 years, and I've been giving the same advice: Focus on the money supply. Keep the growth rate stable and low, and if you don't take my advice this time, I'm never going to come back." The next speaker was Paul Samuelson, and he said, "Mr. Chairman, you have a tough job, and anytime you think I might have some useful advice, don't hesitate to call." I'm sure my memory does somewhat of a disservice to all three individuals, but that's an approximately accurate story. I'm sure I embellished it after 30 years.

MR. SMALL. Another image of Chairman Miller was that he was an efficient businessman who wanted quick decisions from staff, that he was not much interested in academic debate. Was there a stark difference between him and some of the other Chairmen?

MR. TRUMAN. Well, he wanted to change the culture. He came from a very different decisionmaking culture.

In FOMC meetings, during the monetary policy go around, participants spoke and then the Chairman would say something. Then participants would go around again and say whether they agreed with him. For Miller, after the first go around at his first meeting on March 21, 1978, he added everything up, divided by 12, and said that was the answer. [Laughter] It was quick decisionmaking, but the Committee was used to hearing the Chairman's views and generally accommodating to them. Steve Axilrod got to the Chairman, and the next meeting was different. I assume that sequence is in the transcript of that meeting.[49]

Miller was trying to make the place more efficient. He thought three Board meetings a week was too many, so he cut them down to two Board meetings a week. He created the system of committees; a lot of issues could be predigested by the Board committees. He introduced charts into the briefings; Burns only wanted tables because he didn't trust charts. Burns wanted to see the numbers, maybe because of his National Bureau of Economic Research background. He wanted to see the real numbers rather than some picture of the numbers. Miller said, "A picture is worth a thousand words," so he introduced charts to the Board discussions. The result was that we had charts and tables!

On policy, we probably ended up further behind the curve when Miller left than we were when he arrived. But he moved in the right direction all the time he was here, other than the fact

[49] The transcript reveals that Miller did say something at the start of the first go around, but when it was over he merely pronounced on where the center of gravity was.

that he managed to get himself outvoted on an increase in the discount rate when he did not need to do so because there was not even a full Board at the meeting in question. That was the one big mistake he made.

Miller was very imaginative. For example, he was much more involved than any other Chairman with the White House. He had been involved with the Carter Administration staff, for example in the fall of 1978 when they rolled out their proposal for major price control guidelines against the background of the collapsing dollar. Around the 10th or 15th of October, he reported to the Board about what was being planned and said, "This is going to be a disaster. It's not going to work. We need to have another plan." He galvanized the thinking here and at the Treasury for a dollar rescue package, which included lots of ingredients, including what came to be known as Carter Bonds, selling gold, selling SDRs, drawing on the Fund, and a doubling of swap lines. Also, the federal funds rate was increased by 100 basis points and reserve requirements were imposed on certain transactions, so it was a pretty substantive package. Miller convinced the Treasury how they could issue Carter Bonds (foreign-currency denominated U.S. debt) where Burns had failed. Miller said, "Your lawyers should see whether they can charge the exchange rate risk as a cost of servicing the debt," which is a different account from the Exchange Stabilization Fund, which had limited capital. Miller was from a different culture, but the cultural difference wasn't as obvious as you might think it was. He became chairman in 1978, within a year after I became division director in 1977.

In the summer of 1978, I wanted to make appointments to the official staff and to make promotions within the official staff. There was a process to accomplish this that had been blessed by Miller in streamlining decisions at the Board. You went to the see the chairman of your committee to begin the process; Miller had established the Research Committee. Then you

took the recommendations to the committee for sign-off. The recommendations then went to the Board and the Chairman, and were placed on the Board agenda.

I hadn't figured out that I was supposed to clear all of this with the Chairman before I got started. [Laughter] So when the recommendations appeared on the Board agenda, Chairman Miller said, "What the hell is this?" He wasn't much of a swearer, but basically, he said no, even though I thought I had dotted every "i" and crossed every "t". The item was pulled from the Board agenda. Governor Chuck Partee was the chairman of the committee; he knew what I was trying to do, so he worked it out. In that sense, Miller was not so much an organization man as you might think he was, meaning following procedures. [Laughter]

Title of Staff Director versus Director

When I left the Board, my title was not Director of the Division of International Finance; my title was Staff Director of the Division of International Finance. How did that happen? Steve Axilrod had left the Board in 1986. And Chairman Volcker, who didn't like to make up his mind until he absolutely had to, was being pestered to do something about Axilrod's former position. In connection with reabsorbing Steve Axilrod's office—he was Staff Director for Monetary and Financial Policy—into what was then R&S, the personnel people showed Volcker an organization chart. He said, "How come these people (Axilrod, the Staff Director for Management, and I think there was a Staff Director for Federal Reserve Operations at that time) are staff directors and I never see them, aside from Axilrod who had left the Board? And these staff directors are listed up here at a higher level on the chart, while the people whom I work with—Bill Taylor, Jim Kichline, and Ted Truman—whom I see all the time, are down here as directors?" [Laughter] The personnel staff replied that they manage more than one division, and the other people are only division directors. Volcker said, "Well, we're going to change that.

We're going to make them all Staff Directors." So, Jim Kichline's title became Staff Director for the Division of Research and Statistics, Bill Taylor became Staff Director for the Division of Banking Supervision and Regulaion, and I became Staff Director for the Division of International Finance. We didn't get any more money. The only person in IF who got anything tangible out of this was Margarita Serafini because the secretaries for Staff Directors were entitled to one grade higher.

The personnel people hated the idea of destroying their organization chart. So, after Volcker had left and Bill Taylor soon thereafter moved to the Resolution Trust Corporation (RTC) and then to head the FDIC, his successor was demoted back to director. Kichline left soon thereafter also. And when they split up R&S, Mike and Don were directors. So, there was only one irregular staff director left within a year. Then I discovered that the Human Resources staff was putting out organization charts that had my title as director. I was angry. [Laughter] The joke in my family was, "What is the higher-ranking position: Director or Staff Director?" The director really directs, and the Staff Director only manages the staff. So only in the culture of that Reserve Board did you understand that staff directors were higher ranking, in the sense that their secretaries got paid more than the secretaries of the directors. So, personnel put out this chart, and I chewed out whoever was involved. I told them to change it back. Then I said, "I'll make you the following deal. If I can appoint Larry Promisel and Charlie Siegman as deputy directors, I will accept a demotion back to being director. They wouldn't take the deal. But when Karen succeeded me, I advised that they appoint two deputy directors when they appointed a new director, because it was pretty clear she wasn't going to be staff director. No offense, Karen. And they did the deal.

Relationships among Divisions

The term "baron" was invented by Dave Shannon. He used the term to complain to Board members about how he couldn't get anything done here because he was being blocked by the "barons," the directors of the three research divisions—R&S, IF, and Monetary Affairs. If I were in his position, I probably would have invented a term like that too. [Laughter] There were three research divisions because the economist job family is so large. And when you have three divisions rather than one, it was hard to get anything done if you were in the administration against the united opposition of the three of us.

MR. SMALL. Because the Federal Reserve Board is an economic institution, economists have higher standing than other job families such as lawyers, for example, and that's often not the case in other institutions?

MR. TRUMAN. Economists make up the largest job family or did then. In addition to the research divisions, there are economists in other divisions. There were economists in BS&R and Reserve Bank Operations. Our colleague Jeff Marquardt went over to Reserve Bank Operations. Pat Parkinson went to R&S and then he went to BS&R.

MR. SMALL. Was the placement of the academic economists with the bank regulation folks ever an issue? Did they want to work in a research division?

MR. TRUMAN. My understanding is that there always has been somewhat of a war between R&S and BS&R. By October 1998, it was well underway. And often it was a three-cornered war in those days between R&S, Legal, and BS&R. R&S had a very large unit working on research on banking issues, under Pat Parkinson, as I recall. And Ed Ettin was interested and involved on those issues. We had a very small banking section, and it tended not to take on high-profile topics. It did do a lot of work with BS&R and the Legal Division.

MR. SMALL. What were the fault lines?

MR. TRUMAN. The divisions, as I saw it, just didn't think about the world the same way. The economists were emphasizing incentives, the lawyers were emphasizing the law, and the BS&R people were emphasizing what's practical. BS&R tried to have a unit that did research by economists, but the cultures were sufficiently different that it did not really work. The person at the top couldn't make it work. But marrying economists with financial analysts and lawyers is not an easy thing to do. It's relatively easy if we all have the same objective. When I was here, we had a good relationship and worked quite a lot with BS&R, especially on various debt crises. And we worked a lot with the Legal Division because some of the broader economic policy issues needed the involvement of lawyers. You had to learn, sometimes the hard way, that it was always an advantage to bring the lawyers in at the beginning rather than at the end when they tell you, "You can't do it" especially if you already decided what you want to do. My view was to bring them in at the beginning, and then they can tell you how to do it, rather than you can't do it.

MR. SMALL. Did clashes between other divisions occur at the Board table?

MS. JOHNSON. You're often not in the same room.

MR. TRUMAN. And they had different channels.

MS. JOHNSON. Sometimes it's the monetary policy crowd versus the regulation crowd.

MR. TRUMAN. Some people were there for the Economic and Financial Review and some people were there for the banking cases. R&S was more involved in the casework, so there was an overlap wth BS&R there. IF was rarely involved unless there was an issue like approving primary dealers from foreign countries, which required meeting a test of reciprocity that was our responsibility, or something like that.

Some of it was just culture. Many of the lawyers liked working with the economists in IF. Not just with me but also with people like Lewis Alexander, Robert Kahn, and others who, at various times, would be working with Legal because there was an international issue where the lawyers were involved, or even concerning the approval of primary dealers. Legal liked working with us anyhow, and I'm sure it wasn't because we were any less domineering than R&S.

On the other hand, I always had the feeling that R&S directors wanted you to remember that it was the mother division. First, there was R&S, and then IF was hived off in 1950. Much later Monetary Affairs was hived off, but numero uno still was R&S. I'm sure that was also true for IF and BS&R in some sense; we felt superior too. R&S was the biggest division. I guess it's no longer the biggest division, but most of the time I was here, it was the biggest division. I guess BS&R passed it by the time I left. R&S was the biggest division so it had the biggest weight and the most voices.

Relationship with Treasury

MR. MARQUEZ. Let's talk about your views on how the Board functions as a whole. The Board prides itself on excellence, being better than any other government agency, taking its mission to heart and committing itself to doing it right. How did that culture come about?

MR. TRUMAN. I agree with you. When the Board or the System undertakes a project, it tries to do it right. That was the point of the story that I told earlier about the new operating procedures and the review of those procedures, which turned into a two-volume study of every dimension of the new operating procedures. Or when we were reviewing the Federal Reserve's involvement in U.S. foreign exchange market operations, and we put together 17 papers on the subject from top to bottom. That's part of the culture, to do it right. When we write a report to the Congress on X, Y, or Z that has been mandated, we do it right, and we deliver it on time.

That's not what happens in other government agencies. While it is nice to pat ourselves on the back, one of the reasons why we were able to work that way is because we have more flexibility and our resources are less constrained.

Beyond the things that the Board absolutely has to do, monetary policy and some areas of financial regulation, the Board chooses what it wants to do. If R&S wants to get involved in a project that remakes the way the CPI data are collected, or some Chairman thinks that's a good idea, or if the Board is asked to be involved in such a project, then it does it with the Board's considerable resources. But it largely is a choice by the institution, or the people of the institution, to opt into an issue.

At a place like the Treasury Department, you don't have any choice. [Laughter] It's all about triage. That's one of the things I found when I was there after I left the Fed. I had worked with them since 1972, so one would think that there would be the least amount of culture shock there could possibly have been with my going from the Federal Reserve to the Treasury. But, that was not the case. Not that there wasn't triage here, not that we could do everything, but the level of triage was much higher and more consequential at Treasury. For example, if the Board decided that it wasn't interested in what was going on in Turkey, it didn't matter that the Board didn't know what was going on in Turkey. At the Treasury, if we decided you weren't interested in what was going on in Turkey or Honduras, or wherever it might be, and then one of those countries subsequently blew up or suffered from a hurricane, it would be on your watch.

Part of the difference is just the budget constraints, meaning how much you can pay people. In the limit, you get what you pay for. The ultimate budget constraint, however, is that there are 24 hours in a day. So, I think you're right about a cultural difference, but you shouldn't pat yourself on the back. Other parts of the government are under tighter budget constraints in

both dimensions: time and money. As a result, there are more screw-ups and more things falling between the cracks. And in the triage process, the triage is sometimes wrong with conspicuous consequences.

Here we have these smart, well-trained Ph.D. economists, and when something important comes up—it could be a crisis or just a shift in emphasis in the policy world—the division director steps back and sees whom he can get to address the issue. I always thought that one of the differences between IF, R&S, and Monetary Affairs was that IF had fewer experts and more generalists. That meant we moved people around somewhat more than the other divisions did. But all the divisions equally had economists with their own intellectual interests. And they all considered themselves as professionals with professional interests, so coaxing people from one section to move to another wasn't always the easiest thing to do. You could order them to do that, I suppose, but even I wasn't so dumb as not to figure out that you didn't order people to do that. Telling somebody they were going to move from Trade and Financial Studies to Financial Markets, like it or lump it, was probably not the right way to handle things, unless you really wanted to get rid of the person [laughter]. You had to do a certain amount of coaxing and cajoling to move people around. I thought that was useful for the division as a whole, keeping up the skills of the generalist. It also meant that when a big issue came up, the tendency was not to move people around at the lowest level, the entry-level economists, but those higher up. So, it was the official staff that shifted their emphasis. And when a new set of issues came up, you would devote more of the superstructure of the division to working on those projects and less working on others. And less of that shifting around of resources occurred down at the bottom.

Treasury has a completely opposite approach or did when I was there. At Treasury, many of the people graduated from public policy schools, for example they studied at Johns

Hopkins with you, Jaime. Their view was that they wanted to work on public policy, so if there was a crisis, that's where they wanted to work. "I've been working on Africa, now I've got to go work on Asia." They drop everything else and apply to work on what's interesting, what the hot topic is. That was not the culture here. You had to coax and cajole people and convince them that working on Asia rather than what they were working on is something that could generate journal articles down the road, and it might be interesting as well. But it took coaxing and cajoling to get people to do that.

Another difference between Treasury and the Board is that the Board and the FOMC meet regularly to make decisions on a regularly scheduled basis on the whole. They meet, they decide, that's it, even though people may disagree, and there may be some grousing and grumping after the decision is made. At the Treasury Department, when I was there, there was no Board or committee. A group of high-level officials would gather with one of the two secretaries I served under, Robert Rubin and Larry Summers. They would meet and make a decision, and they might even announce their decision, but the whole group would continue to argue about the decision for weeks afterwards. It's like having the FOMC meet, decide to raise the federal funds rate, and then having a continuous session about whether they made the right decision. It was mind-boggling. [Laughter] It's a different way of making decisions. It's actually not a bad way of proceeding as some decisions can be mistakes. The Federal Reserve learned from its mistakes, but it wasn't so instantaneous. But I think you're fundamentally right: When the Federal Reserve gets involved in doing things, it wants to do it right and on time.

MS. JOHNSON. Even if we consider the whole Board to be a political superstructure—not just the Chairman—that's a pretty small superstructure on top of a gigantic permanent staff. For Treasury, there are four or five levels. Every four or eight years, you get rid of all those

guys. You bring in a new bunch of guys, who to some extent, at least in the beginning, either because they're truly committed or partly because they want to make their mark, have in the back of their minds that reversing or at least being different from the previous administration is a good thing. So does the horizon and the stability and the balance between the people who change versus the people who stay figure into this?

MR. TRUMAN. Yes, I think in general you are right. In fact, you don't have to wait every four years. When I was first here, the Secretary of the Treasury was George Shultz. He was succeeded by Bill Simon. Volcker was the Under Secretary who was succeeded by Jack Bennett who was succeeded by Ed Yeo. I said to the career people who I knew at the Treasury, "You'd have to be double-jointed to work here," because every six months they're going to have a new Under Secretary or a Secretary who's going to completely change the policy of the Administration—from favoring fixed exchange rates to favoring floating exchange rates, and in attitudes towards goals. At the Federal Reserve, there is a lot more inertia. That means that the career staff had to be much nimbler at Treasury. One of the unfortunate parts of Washington—this is a bipartisan remark—is that, no matter who becomes the party in power, the new guys don't trust the career staff that's left behind by the old guys, as Karen implied. It's just amazing. It would be one thing if you're talking about a less professional organization than the Treasury Department, or at least the international staff of the Treasury Department, which is what I know about primarily. These people are not particularly ideological in their outlooks. They get hired at different points in time. They come from different places so they're not going to have one mindset about how one thinks about any given international economic policy issue. They are trained at Harvard's Kennedy School, at the Woodrow Wilson School, at Johns Hopkins. But there is a problem when there are changes at the top. This is a bipartisan remark. It is the same

with both parties. Even if you're not particularly partisan—which I'm not, though I was a political appointee—this is not a characteristic that is unique to Republicans or Democrats. I saw it closely with the transition to Bush, (Paul) O'Neill, and John Taylor, and then again in the transition to Obama, Geithner, and Lael Brainard. In time, the new people at the top learn to trust the career staff but it takes time.

MR. MARQUEZ. Notwithstanding the issue of the budget, if a staff member here at the Board was assigned to a particular project, that staff member could say, "This is really interesting, and I'm going to do this." The issue of whether or not this will be relevant is just not there.

MR. TRUMAN. You may be speaking for yourself. I think the two attitudes are not generalizable either way. I think that the time constraint is relevant too. The serious professionals here work long hours. They don't work a 40-hour week. It also is true as a generalization based on my observation that the economists here do not work as many hours as the economists at the Treasury Department. So here, at the Board, if you're assigned to Project A, you say, "I'm going to be working on Project A for the next three weeks. I'm not going to work my standard 55-hour week. I'm going to work a 65-hour week to get this done in the Federal Reserve style." If you're already at 65, this is between that and the maximum you have, which is more than that, but not much—an 85-hour week is what I consider the maximum—you just run out of time. It's not a question of desire or even intelligence, it's just there are only 24 hours in a day, and maximum capacity. So, I agree with you. But again, there is a lot we are able to do. Other government agencies, at one time, were in the same position as we were because the combined budget constraints—from resources and time as well as the fact that the international financial world has become a lot more complicated than it was—were less binding.

We have the luxury of almost always being able to deliver high quality work when other agencies, even the Treasury, cannot. It is also true that it's not always clear that you need a Ph.D. in economics to work here successfully. It wasn't essential to do a good job. Treasury doesn't draw from the same pool. The IQ is the same, but the training and sometimes the motivation is different.

MR. MARQUEZ. The continuity in management enables the staff to commit emotionally to an idea. I may not get it right by the deadline, but the draft is good enough and I know that there will be another time. And I know that Truman is not leaving, and I know that Johnson is not leaving, and so it pays off to invest into getting—

MR. TRUMAN. That's true of central banks generally. Central banks have less turnover and more continuity, and maybe that also feeds back to the morale of the staff. I'm sure the sociologists would like to study how this feeds back into the complicated rewards mechanisms.

MR. MARQUEZ. And the satisfaction of getting it right.

MR. TRUMAN. Yes, that's right, but both ways. It's an incentive, if you don't get it right the first time, to do it the second time, rather than to forget about it because the boss is going to be gone in two weeks or they'll forget about it and you're not going to get any credit for producing an improved product. That's one of the reasons why, when I was here—and I don't know whether it was appreciated—I urged people not only to finish their Ph.D.'s but also to get their one or two articles out of their Ph.D. dissertations. That was important to do for their self-esteem.

Then the question is, what next? Some of the economists are sufficiently interested, are self-starters, so that they have an ongoing research program, but some of them don't. On the other hand, it also seemed to me that it was important to keep economists professionally active.

My sense is that Karen did the same thing, maybe not for the same reasons. If someone prepares a nice memo, or makes a nice Board presentation, they are encouraged to spend the extra time, usually their own, to turn the memo or presentation into a discussion paper, or beyond that, to turn it into a journal article. First, I thought it was good discipline because you're taking an extra step beyond a special briefing for the Board or the FOMC to write it up. And obviously, second, it helped in the broader public relations aspect, including in recruiting. I thought that the people who one pushed and prodded to do that, in the end, would feel better about themselves 3, 5, or 10 years later because they'd done that. That's part of the process. But some of it was selfish or driven by my modest perception of what was in our institutional interests.

Management

MS. JOHNSON. You had certain colleagues who you relied on heavily over the 20-plus years you were here. How did that evolve? I'm thinking of Dale Henderson, who left and then was attracted back, versus a Charlie Siegman who made quite different contributions to the division. Both were important in helping IF fulfill its mission, and in helping the rest of the staff in knowing that not everybody had to please Charlie. Some people could please Dale, and you weren't necessarily at a disadvantage if you were pleasing Dale instead of pleasing Charlie, or vice versa. How explicit were you about keeping these balls all in the air and balancing? Did you think it was the nature of the institution: You find certain key people that fit the institution well and it all works out without having to be forced on anybody?

MR. TRUMAN. One feature of IF, which differs from R&S and Monetary Affairs, is that it builds on the point I made about more generalists and fewer experts. And the section units are smaller and more interconnected. It was more natural for people to move among sections, for example. And there was more commonality and overlap of interest than in R&S, especially the

old R&S extending from banking statistics, on one hand, to housing construction, on the other hand. That meant that there were more common interests in IF. That was part of the culture that was here when I arrived with Ralph Bryant as director. And that was perpetuated with the running-the-division-by-committee process that we had in the mid-1970s. The fact that there were six of us running the division for a little longer than 18 months meant that we all had to work together. Dale wasn't part of that group, but there was a sufficiently broad number of perspectives in that group. You had the younger people and the older people—Bob Gemmill, John Reynolds, Sam Pizer on the one hand, and George, Charlie, and myself on the other hand. There was also a certain amount of mixed backgrounds and interests. And I felt it was important to engage people as much as possible.

I had known Dale when he was at Yale. He was a year behind me and we shared an office for a while. Dale initially came to the Board in the early 1970s, then left in the mid 1980s and came back in the late 1980s when the Board and IF were having trouble attracting people that were more research oriented. That was partly a budgetary issue during that period of a high degree of salary compression. IF suffered less during that period than did R&S. We lost fewer people in that period partly because there was a lot going on in the international arena. Consequently, the non-monetary compensation associated with working in IF on debt crises and the Plaza and the Louvre, was higher than in other parts of the Board at that time. We didn't lose quite as many people in that period, but we were not able to attract as many researcher types. Getting Dale to come back, rather than his going to the Fund, was a big blessing. Dale was very thorough, sometimes to my frustration. He was not the person you went to for a 15-second answer. [Laughter] Once I understood that you weren't getting a 15-second answer, but if you wanted an answer, it would be an answer that would be useful when you got it 15 days later, I

began to value Dale even more. It was worthwhile asking him to think about a problem, and he would. Dale was also a great nurturer of talent, advising them, and co-authoring with them.

Charlie Siegman was the same way. He also had very high standards in everything as well as a keen interest in many technical questions. And he cared about people and talked with them and nurtured them. I guess we would call it mentoring now. But clearly Dale and Charlie had different strengths. I tried always to draw on strengths.

I also recognized that it was important to have people around who didn't agree with you all the time. People like George Henry and Larry Promisel didn't agree with me all the time. And Bob Gemmill, in his own way, certainly didn't agree with me all the time, notwithstanding what Larry said in an earlier conversation. Larry was commenting about people who were reluctant to confront me because I would indicate that I didn't think they knew what they were talking about in words that were probably not the most judicious or well chosen. Therefore, I stifled more debate than I should have. I'm not sure he's entirely right in that. I suspect that he is right that I tended to be impatient. The truth of the matter is that Larry regularly came to me and said, "You don't know what you're talking about." Maybe he didn't do that as often as he thinks he should have, but he did it plenty of times. Karen and Peter Hooper did the same thing. It was important to have at least a certain amount of debate. To some degree, I did stifle different points of view and, to some degree I suspect I overdid it, but I think it is important to have a mixture. That is the point.

Bob Gemmill is one of those individuals who you could get to work on almost anything. One time we were worrying about something or other. He was putting together some talking points on X. I went into his office and said, "Bob, are you done yet?' And he said, "Ted, if you

want it bad, you'll get it bad." The world's greatest bureaucratic statement.[50] [Laughter] But that was an example. I don't know if that answers your question.

MR. SMALL. Karen, to what extent did you see yourself as an intermediary between the lower staff and the division director, for example, to explain Ted's habits, to soothe ruffled feathers if their memos weren't appreciated?

MS. JOHNSON. The overall structure of the research divisions lends itself to section chiefs being very hands-on with their section members, and the first line of officers being very hands-on with their section chiefs. And the intellectual part of the job, in our division especially, was widely shared. You didn't have to worry about teaching people what they needed to know or giving them good feedback on whether they were mastering some task or something. It was more questions of focus or pitch or carefulness, and those differ idiosyncratically across persons. For some people, their first encounter with Ted scares them to death. So, you have to intervene to help that person. You have to explain things to them and so forth. Other people come along and think the interaction with the director is great, and they want to go back and yell at him too. [Laughter] The groups that the section chiefs handle are small, so they can identify differences and respond accordingly.

I often thought that R&S would have been a whole different experience. In IF, for most of anybody's day, you were not an intense presence. You had lots of opportunities to share stories, make wisecracks, and help different people cope in different ways.

MR. TRUMAN. I think everybody does that in some sense. The division directors themselves were intermediaries between the Board and the staff. There were occasions where I would be told by the Chairman or a Governor that that a briefing or something like that was

[50] He later told me that the expression was not original with him, but I heard it first from him, and he was right!

excellent or that it was poor. My job was to absorb both the praise and the criticism and be judicious about feeding back the latter. Or sometimes you would praise someone for a particular presentation, even if no Board member explicitly said, “That was terrific.” So, it works both ways. Other division directors did that too. And when I was a section chief, you have to do that. It takes work to properly manage people. It’s not as if we all went to management school, which we didn’t.

MS. JOHNSON. None of us did.

MR. TRUMAN. None of us did. When I first came to the Board, Ralph Bryant said that little was done at the Board about management succession. You were required periodically to submit a list of the up-and-coming people to the personnel group. The people on the list were then picked to take management training courses. Within the first year or two that I was here, someone from personnel came to see me and said, “You need to learn about managing.” I told the woman that it was all common sense. That is not quite true, though a lot of it’s true. There are tricks. As I think back, it is remarkable that most of us had no management training and some of us were better mangers than others.

Briefings

MS. JOHNSON. The division director plays a multi-faceted role. One role involves the Monday morning briefings in the Board Room. One role of the division director is to help those staff briefing the Board members do the best possible job and survive the experience with a positive take. I’ve heard some horror stories about briefings during the Burns Chairmanship. I was here during the Chairmanships of Volcker and Greenspan, and a few years of Bernanke. If you had someone briefing the Board for the first time, you were alert to the state of affairs and sensing, for example, that a Governor had asked a question that the briefer didn’t understand or

was too nervous to answer even though the question seemed pretty straightforward. They weren't getting off to a good start. Then you'd have an old hand who you knew would relish getting a hard question, wanted a chance to dive in, and didn't want you butting in and stealing their thunder when they finally got the question they had been waiting two years for. [Laughter]

MR. TRUMAN. Your job was also to answer all the questions they couldn't answer. But you're absolutely right about the range of briefers. I tried to help the ones who were doing their first special briefing at the Board table. I didn't do it with the people who did the weekly briefings because they got into it pretty quickly. I would reassure them and give them my one lesson: Answer questions precisely but take a breath. Don't be a typical economist: "If you assume A, B, C, and D, then X." The Board members wanted to know the best answer, and they want the qualifications later. I don't know whether that worked, but it was designed in part to reassure people in advance.

MR. MARQUEZ. It worked.

MR. TRUMAN. I suspect that sometimes it worked, sometimes it didn't.

Relationship with Chairmen and Other Board Members

MR. MARQUEZ. During your tenure at the Board, you worked with many Chairmen and other Board members. Would you comment on those relationships, their styles, their influence on you, their knowledge about international economics and monetary policy?

MR. TRUMAN. We've talked about the Chairmen quite enough. They each had their strengths and weaknesses. All four Chairmen I worked with were pretty remarkable people. Regardless of what everyone thinks about G. William Miller and his policies, he was a remarkable person. I had the advantage of working with four Chairmen who were high class individuals, and certainly the fifth is as well.

The Governors were a different lot. There were various processes by which they were chosen. I worked with 37 Governors, four of which were Chairmen. When I had my retirement party, I figured out that I had worked for half the Governors that had been members of the Board since its recomposition in 1935. Members were appointed to the Board for a variety of reasons. Some were here partly because of the role of the Chairman in influencing the choices. Others were picked by the Administration with no input from the Chairman. And the process of picking Governors changed over time from the Kennedy Administration, which had picked some who were here when I arrived such as Dewey Daane, to the Clinton Administration.

You asked about their knowledge of international economics and monetary policy. Over time, they became increasingly interested in international economics, international affairs topics. In 1972, when I came and Dewey Daane was here, and Henry Wallich later succeeded him, the other members of the Board had little or no interest in international economic issues. They considered things like exchange rates—I'm exaggerating—a distraction. The mindset of monetary policy was very much a closed-economy mindset. In that sense, there was less interest in what we did and less interest in international affairs. But that changed tremendously during the time I was here.

In preparing for this interview, I sorted my 33 Governors (which exclude the Chairmen) into categories A, B, and C. I'm not going to tell you who are in categories B and C. There are about a dozen in category A. I thought they were topnotch. There are about the same number in the B category and a few less in the C category. I thought those in the latter category just didn't contribute much.

At the top of the list is Henry Wallich, who was a friend of mine. I was a junior colleague of his at Yale. We were personally close, and he was very grandfatherly to the

division. Sometimes he would have some of the senior people in the division out to his house for wine tastings. He had brought down 7,000 bottles of wine from New Haven that he never drank. He also was sometimes tremendously frustrating. He would run into some friend of his who would hand him a paper. He would pass it on to us and say, "Analyze it for me." Somestimes, the paper wasn't worth wasting anybody's time even to read. He had broad ranging intellectual interests. As a Board member, he was in a category of Board members that talked about whatever they wanted to talk about and didn't always align their thinking 100 percent with weighted views of the Board or the FOMC. He liked to give speeches sometimes that were a little orthogonal to ongoing debates or premature in raising issues. He became seriously ill while on the Board, and later died from that ailment. Dave Howard helped me to organize a little festschrift for him that was published by Peter Kenen at Princeton and we were able to present it to him after he left the Board but before he died.

The person that impressed me the most was Fred Schultz. He joined that Board as Vice Chairman less than a month before Volcker arrived. The Board staff thought this guy was going to be a mess. Until Steve Gardner had been appointed to the Board as Vice-Chairman (in February 1976), for a long time the Vice Chairman had been promoted from within the Board. There then was a long sequence of Vice Chairs who came from outside, which lead to some problems, it seemed to me. It wasn't clear what their role was. Then Clinton Administrations reverted to the previous system when they appointed a sitting Governor, Roger Ferguson, as Vice Chair on my advice to the Treasury at the time. Not that the appointment wouldn't have happened without my advice, but it was my advice.

Going back to Fred Schultz, he had run for Senator from Florida. He was a politician and a businessman. He was a Princeton undergraduate, and maybe went to business school

somewhere, but he basically was a politician though also a banker. He was the last person you would think of as being an effective Federal Reserve Vice Chairman. He was amazing. He understood the organization instantaneously. He understood the role of the Vice Chairman. He was Mr. Inside to Volcker's Mr. Outside. He did a tremendous amount of work on things like democratizing the boards of directors of the Federal Reserve Banks. He contributed a tremendous amount to the institution. What you learned from him was that it's important to have a leader in the institution that cares about the institution. He was thoughtful and the fact that he was a politician meant that he had all those skills in the best sense of the word. So, he was second on my list of top notch Governors.

Then there is Mike Kelley, who also was a businessman. He did not convey any sense that he knew more than anybody else; in fact, he often said he knew less. But in his quiet way, he was very effective in the many things that he did. He was supportive, and I enjoyed working with him. He would ask questions. He would listen to your answers and learn from you, rather than every conversation being an oral examination.[51]

Lastly, there is Larry Meyer. He was a little rough at the start because as a professional economist he had some of the culture problems when he got here that we have discussed. He's probably the Board member with whom I worked the hardest. He read every page. He mastered every subject. He was interested in every briefing. And he gave you huge amounts of positive feedback.

Those are the four Governors who were at the top of my list for a variety of different reasons. I won't go beyond that. I traveled a good deal with all of them. I also had a bit of a reputation for being a gatekeeper.

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[51] For the record, I remained close to Mike Kelley and his wife Janet. They later moved into Ingleside at Rock Creek, where Tracy and I live, just before Mike died.

After Henry Wallich got sick, Chairman Volcker didn't trust anybody else on the Board to take on his international responsibilities. So, for a while I represented the Federal Reserve at the BIS in the 1985-86 period. Then we went to a system in which there was another designated international Governor and then they split the international jobs up and they rotated them among Governors. I went to Greenspan and I said, "Why don't we rotate the Governors attending the BIS, in particular when we do not have a Vice Chairman?" They should spend some time, and have some face time involved too, at such meetings. As a result, I had a certain amount of travel with several governors to the BIS and to other meetings when they had split up the world. So, I did get to know a number of the Governors reasonably well including Emmett Rice, who was invited to China in 1985. The People's Bank of China said he could bring a partner along. He was not married at the time, so he asked me if I could go. I asked Volcker's permission and he said yes. I needed to ask permission because I was going to be away for 12 days. That was a long time to be out of pocket. We spent 12 days touring China together. It was terrific. It was the biggest boondoggle I had when I was the division director, and I got to know Emmett quite well.

Emmett Rice was a gentle, but firm, man. He was a well-trained economist. He was more sympathetic to concerns about unemployment than about inflation, but he was also a team player. Although we both loved our time traveling around China as the guests of the People's Bank, it was also very frustrating because they would never tell us our schedule except a day at most in advance. This bothered Emmett and me as well. I tried to get more guidance from our host but failed. Maybe partly as a result, after we left China by hover-craft for Hong Kong, which broke down and we were transferred to another craft, we arrived in the harbor on the Hong Kong mainland without any Hong Kong dollars. We needed to get some Hong Kong dollars to

take the ferry to Hong Kong island where we thought our hotel was located. Emmett said, let me handle this. He got in a taxi and went to a bank to change some money. He came back to the ferry with the money. He had a dispute with the taxi driver who chased us onto the ferry demanding more money. We got to the island and got a taxi to take us to our hotel. The taxi then took us back to the mainland, through a tunnel, to where our hotel was located. We could have just taken a taxi to the hotel and had it wait while we changed our money. We both laughed. We had one day in Hong Kong, but we spent it apart; we had seen enough of each other. I also worked with Emmett's daughter, Susan Rice, while I was at the Treasury and she was at State. She reminded me that one day Emmett's car had broken down and there were no Board cars available because of a snowstorm. So, I offered to take him home, and we picked up Susan on the way.

MR. MARQUEZ. Were they as willing to take criticism from you as you were from some of your staff officers?

MR. TRUMAN. [Laughter] I would like to think that I tried not to criticize them. I would make constructive suggestions. I am sure that I failed because even my constructive suggestions sounded more like criticisms than was my intention.

I knew some of the Governors better than others. Janet Yellen had been a student when I was at Yale. I served on her oral examination, and I helped to hire her here. Then she became my boss, so I felt a little freer about giving her free advice than I did other members. I also knew Ned Gramlich from Yale and his wife was a college classmate of my wife. Therefore, I was a bit more open with Ned. But generally, I didn't offer Board members advice and comments very often, unless they asked for it. I didn't think it was my job. Occasionally, if they said something

in a Board meeting that I thought was wrong or factually incorrect, I might call them up or run into them or stop by and say, “I think you have your facts wrong,” but not much beyond that.

MR. SMALL. Do you have any sense of whether there’s a quicker turnover of Governors now, whether it’s harder to recruit Board members because of pay or various financial restrictions?

MR. TRUMAN. There have been cycles. I’m not sure what the facts are. There have been times when you’ve had a veteran Board in the sense that people were staying longer. I read something that said the average tenure of a Board member more recently is three years and three months, which is pretty short. For some Governors, who are appointed to fulfill unexpired terms, their terms run out and they are not reappointed to a full term. My observation was that running a Board with four or five Board members was very difficult. Therefore, I feel for the Board and the fact that in recent periods, in times of high stress, there were five Board members. It’s difficult in today’s world to do all the things that the Board has to do, outside the Board as well as inside the Board, with only five Board members. Do you need seven? The optimal number probably is six and a half Board members.

MS. JOHNSON. Expected value: If there are only seven positions, the expected value has got to be less than seven.

MR. TRUMAN. I understand that. When there was a full Board for an extended period of time, there was a certain amount of extra time on the hands of Governors and excess time was reflected down the line in extra demands on the staff. But when there are five Governors, there’s a certain amount of finger pointing. “You do it. You do it. I’m overcommitted.” It’s unfortunate that the Board recently has not been at full capacity.

MR. SMALL. Suppose there's a vacancy on the Board. Who would be interested? Salaries have been fairly limited. And there are financial restrictions if you're coming from the banking industry.

MR. TRUMAN. I don't know enough about the process. If you were looking to appoint a Board member with some background in the financial sector, that was probably the most difficult type of person to find. John LaWare was here for a while. Aside from that type of person, I think there are enough qualified warm bodies around. It's more a function of the importance that is attached by the White House or by the Treasury to the appointments and keeping a full Board. Different Administrations do this differently. In some cases, the White House manages the process, but sometimes it's turned over to the CEA. That was true at the beginning of the Bush II Administration. Sometimes the Treasury gets involved and the appointment selection is run out of the Treasury. Even if it's the Treasury or the CEA, ultimately, it's the White House who has to think it's important enough to do this. It's not a particularly good sign that this White House has not filled these two vacancies, in my view.

MR. SMALL. Currently, Governors make less money in salary than a fair number of staff. That's public knowledge, but it's hard for people to understand.

MR. TRUMAN. Yes, that's right. Staff salaries have gone up as have the salaries of members of the Board. However, the Chairmen and the Board should be credited for allowing staff salaries to exceed their own. (I would note, however, that this is not a recent phenomenon—only a matter of degree; with bonuses, a few staff were paid more than Governors and the Chairman dating back into the 1960s, or at least that is my understanding.) Chairmen recently were moved back to Level 1 (Martin was demoted) and the Governors were moved up to Level 3, if I remember correctly. When I left, the Chairman was at Level 2 and I was paid

more than he was. I took a substantial cut in salary to go work at the Treasury Department, and even a modest cut in my pension. I'm sure that compensation is a factor. But I don't think that is a problem. It is a problem if people tighten up the rights of what a person can do after leaving the Board. If it was felt that there would be further restrictions on what staff or a Governor can do and you can't do after leaving the Board, which is advocated by some reformers, then that would be the biggest problem.

Most people don't come to the Board for the money or even as a stepping stone. They do it for the public service environment. If you're going to work in public service in our culture, taking a cut in income is part of the price you pay. But that fact also means that choices for Board members are somewhat limited because not everybody is in a position to take a pay cut.[52] On the other hand, the Governors don't starve. Also, there are a sufficient number of nonmonetary forms of compensation.

Federal Reserve Banks

MR. SMALL. What strengths do the Reserve Banks bring to the System and to the decisionmaking process?

MR. TRUMAN. IF did not have as much contact with the Reserve Banks as did other parts of the Board staff. But we did have some special problems. There was high-level rivalry between the Board and New York on many dimensions. Things got increasingly smoother over time. But, starting in 1930, as the center of gravity moved to where it was when I left in 1998, things are a lot different. There were some tensions largely revolving around the more academic nature of thought processes here and the so called real world orientation up there.

[52] However, I was shocked to learn recently (2013) that when Volcker was Chairman and his lovely wife Barbara was in New York, she had to take a part-time job and take in a boarder to make ends meet.

My contact with the Reserve Banks was limited, but I did get to know most of the research directors when we ran this study of Federal Reserve Bank operations. We initiated that study; it was not mandated by the System, though I tried to run it as a System project. We did a couple of System projects over time. And over time I visited most of the Reserve Banks except Richmond, which was the nearest one, and my wife's home town. I applied for the job as Bank president, but I didn't get very far. [Laughter]

MR. SMALL. Some might think that the New York Fed people understand the markets—

MR. TRUMAN. Yes, people in New York thought, to some extent correctly, that they understood markets, but one can be mesmerized by markets as well. You did have different Banks that were interested in specific areas. San Francisco was interested in the Pacific. Atlanta and Dallas traded off which was most interested in Latin America.

MR. SMALL. Did you get useful information from the Reserve Banks?

MR. TRUMAN. Yes. Occasionally we asked a special international question in connection with what was was called the Red Book. During the 1980s debt crisis period, when we were doing a certain amount of moral suasion with the banks, I was quite active with the Reserve Bank presidents, and some research directors, in trying to have them talk to the institutions in their districts. On the whole, during that period, the presidents and the research directors with whom I dealt were quite responsive. I remember conversations with Tom Hoenig in particular, though he was not yet president, and he was helpful. Maybe that is where he developed his views about what not to do with the banking system, though I think he was always closer to the community banks and bankers. I think that the federal feature of the System serves the Federal Reserve and the country well, because it means that the Federal Reserve is not just a

marble palace on Constitution Avenue in Washington, but it is known outside Washington in the rest of the country. There is some personal contact both for the general public as well as the local elites.

The Reserve Bank presidents, and some research directors, are running around giving speeches, hosting conferences, and talking to the local newspapers, radios, and TV stations. I think that is good for the System because it puts a more human face on the issues with which we are dealing.

One important historical episode related to that observation, which also is related to developments going on today (2009) about "reforming" the Federal Reserve, is that twice, in very close succession, there was an effort to consolidate bank supervision and reduce the role of the Federal Reserve in bank supervision and regulation. One was by Vice President Bush during the Reagan Administration, when Volcker was Chairman, and then another one under the Clinton Administration.

The second effort appeared to be politically motivated, and I learned later that Joe Stiglitz (my Amherst contemporary) was very much involved in that effort, which may be one reason why he is so critical of the Federal Reserve these days. Chairman Greenspan recognized that getting the Federal Reserve out of banking supervision would weaken the Federal Reserve System. If the Federal Reserve had no role in supervision, then there would be much less reason to have 12 Federal Reserve districts. That was one of the reasons why Greenspan fought that proposal: it hit at the core rationale and political structure of the System. We worked hard at collecting information about what other countries did around the world and what the arguments were for involving central banks in supervision. Greenspan gave a major speech on the subject and ended up winning that round of the debate. The federal aspect of the Federal Reserve

System helps in an environment in which the central bank does things that the general public doesn't like, like raising interest rates. But putting a human face on the System when the Federal Reserve raises interest rates helps the System. It also can be, and has been, argued that having the Federal Reserve as the only supervisor consolidates too much power in the Federal Reserve. Greenspan was sympathetic to this view, perhaps reflecting his philosophical position on the role of government.

When I came to the Board in 1972, I thought that we should not be involved in supervision at all; that is what academics thought. I later learned that there was such a thing as macro-prudential supervision, which flowed from the financial sector to macroeconomic policy (for example, as lending terms eased when interest rates went down) and vice versa (for example, when it was unwise to send the supervisory storm troopers into banks in the middle of a recession as was done at the end of the 1980s and early 1990s when conditions were close to recession). Moreover, when there is a financial problem, governments turn to their central banks because that is where the money is. Thus, the central bank should, in my view, be involved in supervision and regulation. However, that role does not have to be monolithic. If one were really serious about consolidating banking supervision and regulation in the United States today, one should talk about financial sector supervision and regulation more broadly. One could construct a system, with another independent agency in charge of this area, with one or more members of the Board on that board, and with much of the on-the-ground supervision outsourced to the Reserve Banks.

MS. JOHNSON. You said that having the 12 District Banks is good for the Federal Reserve. Is it good for monetary policy? The argument against it might be that if you have 12 people who often don't seem to add a lot to the conversation sitting around the table talking and

talking and they have to be persuaded, that adds an additional level of complexity; it is not clear that it adds a level of analytical richness. There were times in the past when Volcker had to work to persuade the Committee to do what he wanted done. What strategies did Greenspan use to move the Committee where he wanted the Committee to be?

MR. TRUMAN. You don't have to have 12 Reserve Banks today. You could probably get away with six. And you don't have to have a 12-person FOMC. You could have eight, or preferably an odd number, for that matter. I'm not sure there's magic in those numbers. On the other hand, there is an advantage to having more than one person, though some central banks operate with a single decision maker. The argument for one person is that the buck stops there, and you lose accountability when there is a board. By having a committee, you eschew the responsibility, and no one takes responsibility. I think balancing different views is important. In that sense, it follows that if everybody thinks the same way, then there's no reason to have more than one person. So, I favor more than one person, and I also favor some diversity of views. I don't think differences in the legalities of the structure of the Federal Reserve are a particular disadvantage. While the Reserve Bank presidents may be more conservative, or have a lower tolerance for inflation than the average Board member, I don't think it's that big a difference or that it has a pronounced adverse effect on the decisionmaking process.

Because of the tradition here, unlike at some other central banks, Board members do not very often formally dissent. There is more disagreement reflected in the transcripts than there is in the voting. That probably is the way the institution has implicitly solved the coordination problem. Having more dissents in the transcripts than in the voting is probably a nice balance given our system. It's bad enough, in my view, when the analysts talk about the hawks and the doves. In general, the range of views is pretty narrow. There are different strategies and

different emphases, but I think the range of views is not so wide, at least as a general pattern. In my experience, and on international affairs, two or three Reserve Bank presidents and one or two Board members were against the Federal Reserve's involvement in foreign exchange operations. That was, maybe, a problem, but we live in a democracy and dissent is part of having a democracy.

To answer Karen's question, Chairman Greenspan was very concerned about not having too much dissent or even debate. In my view, he was too much concerned on both points. But maybe he had learned that Volcker had been too little interested in the views of his colleagues. Therefore, Chairman Greenspan had Don Kohn talk to individual Governors and presidents before many FOMC meetings to find out where they were, and he tended to shade his comments accordingly, picking up themes in what I called his FOMC homilies in an effort to convince them that he shared their views. He also tended directly to preach solidarity. In particular when he first was here, there were a lot of leaks from the FOMC and the Board, and he would lecture the Board and the Committee, often in executive session, about this problem and the need to demonstrate solidarity. It is a bit ironic that Greenspan, who could out debate almost anyone, was so leery of open debate and discussion. I think that net-net it was unfortunate that we discouraged open debate.

MR. SMALL. Do you think the skill sets needed to be a successful Governor are the same skills needed to be a successful Reserve Bank president?

MR. TRUMAN. It's not an accident that the Reserve Bank presidents are also called chief executive officers. They're running an organization in the sense that Governors are not, although the Board runs the organization and the Governor who's responsible for management is effectively a CEO. A Bank president should have more management skills than the average

Governor. The same argument that holds for the Board having a variety of backgrounds holds for the Reserve Banks. If they're all card-carrying Ph.D. economists, I think the country would be worse off, in particular, if they all came from Harvard or MIT, but even if they came from 12 different universities. Economists don't have all the answers, even though we cover a pretty wide spectrum. I'm not against having economists as Reserve Banks presidents but I know that there's a view that there are now too many.

Succession Planning

MR. MARQUEZ. Why did you leave the Federal Reserve Board in 1998?

MR. TRUMAN. I left the Federal Reserve in 1998 to become Assistant Secretary of the Treasury of International Affairs. Long before that, I decided that it was not healthy for the division or for me to have someone in one position for as long as I was there, but I couldn't get a better offer. [Laughter] I tried for quite a while to find another position, though I did not seek one aggressively, and I did entertain a few opportunities that didn't pan out. So, I planned to retire in November 1999, when I would have been eligible for retirement from the Board. I told a few people that that was my intention, and I had prepared for succession, or I thought I had prepared for it. I had a modest management succession plan. I don't know what I told Karen, but she should've been able to figure it out. [Laughter]

MS. JOHNSON. There were some explicit steps taken.

MR. TRUMAN. Yes, to move senior officers around to give them more experience. My plan, such as it was, was that when I left, the Board would have a choice of good internal candidates and the division would be in good hands. I was approached by Deputy Secretary Summers to be Assistant Secretary, I suspect at the instigation of Tim Geithner, who was moving up from being Assistant Secretary to being Under Secretary. Initially, I was insulted. [Laughter]

I said, “You mean, you only want me to come over here and be Assistant Secretary? Why should I want to do that?” I came back to the Board and I talked to Greenspan. He knew about my plan to leave in a year, and the reasons why, and he was supportive of my plans. He said, “No, no, Ted. You might want to think about it. Some of the things you’ve suggested you might be interested in, I think have not been the right thing for you. But this is something that you might want to think about.” I did think about it further and talked to a few other people like Paul Volcker. And Tim Geithner called me up and urged me to do it. In July 1998, I agreed to go to Treasury. I had to go through the process of vetting, which was less severe than it is now. When the nomination was finally announced, Linda Robertson, who was then at Treasury in charge of Congressional relations said, “Ted, I don’t think I like you, your vita’s too long, and it will cause a lot of problems.”[53]

So why did I leave the Board? Because I got the offer from Treasury, and I was going to leave the Board anyhow. The move to Treasury only meant that I was going to leave a year earlier than I’d originally planned. And I was reasonably confident that, although I didn’t have a particular favorite among the three candidates, whoever the Board would choose as my successor would be good for the division and the Board. These positions as the research directors, the General Counsel, and the head of BS&R were quite attractive, and I was concerned that they not become political positions. I could see that happening under the wrong set of circumstances. Don Kohn, Mike Prell, and I were all eligible to retire approximately at the same time. So, I had conversations with Don and Mike about my plans. I urged the Board to have an open and transparent search process in picking my successor. Fortunately, Ned Gramlich was then the

[53] After I got to Treasury and spent a whole day talking to members of Congress about a piece of legislation that would trim the capacity of the ESF to engage in swap arrangements, Linda decided that I was pretty good.

head of the Committee on Research, and he ran a nice process in my case and, I would like to think, set a useful precedent.

MR. SMALL. How broad did that search go within the Board? Is the System included?

MR. TRUMAN. After I had made up my decision, I wrote a memorandum for the Chairman talking about the job and the three internal candidates. I said that I thought that the Board should favor an internal candidate, though I did not think that was best for all institutions at all times. My view was that the institution would be better served at that time by having an internal candidate. When an institution should favor an external candidate is when there are clearly problems and the place needs to be shaken up. It was the Board's decision, but I said, or wrote, "If you think things are going reasonably well, if you're satisfied with the job that the division is doing, then you should err on the side of an internal candidate. If you think things need to be turned upside down because you're dissatisfied, then you ought to look elsewhere." I wrote a memo that included my thoughts on the strengths and the weaknesses of the three candidates; there were not many weaknesses. Greenspan turned that memo over to Ned, and Ned talked to me about it. He told me how he planned to proceed. I don't know everything, but I know that Ned talked to some people outside the Board about the division, as well as inside. It helped that he was experienced in picking deans and individuals like that. He had run somewhat comparable search processes in the past or had been part of them. He did approach one outside candidate, who expressed some interest, but then later withdrew from consideration. In the end, I don't think the Board would've picked that person, but it wouldn't have been a disaster. The Board met and had an interview process with the three candidates.

MS. JOHNSON. I distinctly remember my interview with Greenspan. I don't remember whether or not I also talked to Alice Rivlin at that time. Maybe I talked to the other members of

the committee. The moment is fading in my mind because it was 10 to 12 years ago. Ned Gramlich was the chair.

MR. TRUMAN. The Board was divided among the three candidates, something like three, two, two, with Karen having the three votes. In retrospect, I guess I should congratulate myself for having helped to provide the Board with three strong candidates. My only role in picking her was that the Chairman called me up and said, "What should we do?" and I said, "You'll do fine working with Karen." He said, "Okay. We'll pick Karen." [Laughter]

MS. JOHNSON. Thank you Ted. No one has ever told me this story.

MR. TRUMAN. Either Peter Hooper, Lewis Alexander, or you would've been terrific division directors. I didn't have a favorite. On the other hand, somebody had to push them over the goal line, though it always seemed to me that they were close enough to picking Karen. So, they might just well pick Karen. [Laughter]

MS. JOHNSON. Why thank you, Ted. [Laughter]

MR. TRUMAN. Well, I'm glad you thank me rather than cursing me.

MS. JOHNSON. I enjoyed every minute of it, when I wasn't scared to death.

MR. TRUMAN. Later, you said that I left you in the lurch, which I thought was not true.

MS. JOHNSON. It was not you personally. It was the fact that the turnover happened while the Asian financial crisis was in full swing.

MR. TRUMAN. It was winding down, but you had the second round. You had Brazil, Russia, LTCM, the beginning of the euro, and so forth. There was always something. That was one of the fascinating things about working in IF. There was always something.

MS. JOHNSON. I returned the favor to Nathan. [Laughter]

Morale in the Division

MR. TRUMAN. There were ups and downs in morale in the division, though I wasn't always conscious of that. Dale would come to me and say, "Ted, people are discouraged and morale is low." I had to figure out something to do. I could make a fool out of myself and dress up as Santa Claus, which I did a couple of times. You weren't here yet, Jaime.

MS. JOHNSON. No, you used to wear that hat at the Christmas parties.

MR. MARQUEZ. And the vest.

MR. TRUMAN. The high point of my career, in this regard, was when I dressed up as Santa Claus, at the initiative of Bobbie Bakke who was helping us manage the celebration that year, and presided over the Christmas tree lighting.

MS. JOHNSON. With Paul Volcker—calling him Tall Paul. All of us present at the time recall that. Volcker had only been at the Board a few months. He just sat there. His eyes got wider and wider. He must have been thinking, "What the hell is going on?" [Laughter]

MR. TRUMAN. A certain amount of that is important for morale. Then Tracy and I had picnics at our house that were very successful. You don't think about it that much, but morale is important. And probably again, a little bit of management made some sense. [Laughter]

MS. JOHNSON. Again, the comparison to R&S comes to mind. I don't know how you solve a morale problem in R&S. Maybe you decide the division is a group of mini-divisions in and of themselves, and you deal with sub-units, rather than the whole division.

MR. TRUMAN. Yes. There probably are more difficulties in R&S dealing with morale. Jim and Mike really were more full-time managers. I always had people like George Henry, Larry Promisel, and Don Adams to rely upon to help manage and that helped me a great deal.

MS. JOHNSON. There was the softball league that we participated in; some people would play and others would come out and cheer. The fun and games, and things that Ted would give at Christmas. There would be eye-opening experiences when you'd learn that two people in the division had never met each other in the space of having been here for almost a year. Then you'd figure out something to keep that from happening again.

Departure from the Board

MR. TRUMAN. Once I went to Treasury, I didn't really leave Karen. I was always looking over Karen's shoulder. It took several weeks to move out of my office.

MS. JOHNSON. For a brief period, weren't you on the second floor of the Eccles Building with the title "adviser?"

MR. TRUMAN. I moved out of your office and had the title of adviser when you became division director, but I do not think I had another office. I had the title of adviser until I resigned in December 1998.

Initially, I went over to Treasury as a consultant. Then I had to go through the confirmation process. Tim Geithner, Gary Gensler, and I received recess appointments. That process was then, and even more so now, controversial. I didn't mind the recess appointment because it meant that I would serve until the end of the next year, in which case I would be eligible to retire from the government. [Laughter] Tim was concerned about it as a potential blot on his record, so he double-checked to make sure it was all right with everybody on the Hill. After the recess appointments, we had a regular confirmation hearing right away in early January. But then we got held up for five months by Senator Strom Thurmond, who was concerned about the possibility that the Treasury would approve a request to include a message on the labels on red wine that in moderation red wine is good for one's health. This matter was

under Treasury's jurisdiction because the Bureau of Alcohol, Tobacco, and Firearms (ATF) was then part of the Treasury. A daughter of Senator Thurmond had been killed by a drunk driver, so he wanted Rubin's assurance that he would not approve this request. On the other hand, Rubin's Treasury had recently lost a case of commercial free speech, which this was. In the end, Rubin signed a letter saying that he would work with the Senator, the hold was lifted, and we were confirmed. But as soon as I got the initial appointment in December 1998, I resigned from the Board staff. I took a cut in salary when I initially went over to the Treasury as a consultant and Treasury was reimbursing the Board for my salary. I thought it was the right thing to do.

Although I was gone from the Board for two plus years, we cooperated. I'd lean on Karen a bit to cough up some resources and ideas, serve the greater good a bit. I talked about the different cultures.

Then I went to the Peterson Institute for International Economics. Fred Bergsten had approached me sometime in 1996 or 1997 about joining the institute. I don't know how he knew that I was thinking of retiring. Maybe he figured it out. I said, "When the time comes, I'll let you know." When the Clinton Administration was coming to an end, he called me up and said, "Do you want to come?" I said, "This is a reasonably easy thing to do."

At the Board, the division directors are at the top of the intersection between the staff and the political appointees, meaning the Board and the FOMC. At the Treasury, I was at the bottom. [Laughter] I was at the immediate level above the staff.[54] The only sensible thing I did in going to the Treasury was to say that I was going to have nothing to do with management and said Tim should continue to do that in terms of promotions and performance evaluations. It didn't make any sense to bring Federal Reserve professional management standards, such as they

[54] This is as far as Senate-confirmed individuals; there were some politically appointed deputy assistant secretaries on the international side of the Treasury as well, and they reported to me or to Tim.

are, to the Treasury Department. That was the only thing I extracted from them, other than agreement on how Tim and I divided up some responsibilities.

When I went to the Treasury, it was a tremendous culture shock. After the first two days, I said, "What the hell do you think you're doing, Ted Truman?" Anytime one goes to a new job, there can be some problems, but the problems weren't with the Under Secretary. My relations with Tim were wonderful. If you're going to have a wonderful relationship working for someone who's 20 years younger than you are, that says something about the person who's 20 years younger than you are. That is one of the reasons why I was willing to go back and work with him again this spring (2009). One reason why we worked well together is that I knew most of his issues and he knew most of my issues, and so the staff was happy when we were both there, and we could cover for each other when one of us was away. We got in one little episode of foreign exchange market intervention in the fall of 2000. It was an excruciatingly painful decisionmaking process. It took months. But on those issues, I had worked with the Treasury before, so that was nothing new.

Treasury International Capital System (TIC)

MS. JOHNSON. Would you talk about moving the TIC people.

MR. TRUMAN. By law, Treasury collects most of the data on U.S. international financial assets and liabilities. Some of the foreign direct investment data are collected by the Commerce Department. But most of the financial portfolio data are collected by the Treasury through the Federal Reserve System, which acts as Treasury's agent.

MS. JOHNSON. The New York Fed does a lot of the nitty gritty.

MR. TRUMAN. Yes, New York does it. The trouble at the Treasury was that there was no interest in the data, and there was no home for the activity at Treasury. It bounced back and

forth between the International Affairs people and the Assistant Secretary for Economic Policy people. There were some data-collection activities at the Treasury, but they were elsewhere, in debt management and places like that. So, there wasn't a natural home for it over there, and there wasn't much interest in what they were doing. The Assistant Secretary for Economic Policy, Josh Gotbaum, approached IF about Treasury people coming to work here. I told him that I wasn't sure we wanted to do that. Unlike R&S, the IF division didn't do a lot in the way of collecting statistics. We had marginal involvement in this kind of topic. We didn't collect very much, and we weren't responsible for much in that area. I said, "The logical thing is to send it to the Commerce Department, to BEA (the Bureau of Economic Analysis) with the rest of the international data." So, they opened negotiations with the Commerce Department. We had a three-cornered negotiation for a while. The Commerce Department said, "Fine, if the Treasury Department will guarantee that we will have the appropriate budget so we can absorb these seven or eight people." The point is that it was a significant responsibility that the activity would move to Commerce, and BEA's concern was that its budget was always being squeezed; it would be forced to take on this new responsibility and wouldn't get the money in their budget to cover it. So, BEA wanted Treasury to guarantee the money somehow. But it wasn't clear how Treasury was going to be able to do that.

The other hurdle was that BEA said, "If these data are to be collected by the Commerce Department, it'll be under Commerce Department standards, rather than your standards. That means that the Treasury and Federal Reserve will not have any policy access to the data until they're available to the general public." These were data on things like movements of official reserves and debt exposures of U.S. banks to individual emerging market countries, information that we often used to a limited degree in a crisis. We had access to the data well before the final

data were released. Larry Summers did not like this idea. We didn't either because we used these preliminary data in the Greenbook. We would no longer be able to have the data in the Greenbook; we could only put them in the Greenbook after they were published in the Survey of Current Business. These data were not central to the Greenbook, but we would have access to less information, either for analytical purposes or for policy purposes.

So, then we opened up a discussion about whether the Treasury would transfer the data collection responsibility to the Federal Reserve. Don Adams deserves a lot of credit for working all this out. There was again, a financial side of that transfer, but that was relatively easy to do because the Federal Reserve System was already doing some of the work for the Treasury Department and we were in the process of regularizing the financial relations between what we did as the agent for the Treasury and how we got compensated for that activity. For a long time, the Treasury wasn't paying its bills, so we had negotiated a process by which we deducted what we were owed from what the System remitted to the Treasury. That was understood. So instead of paying out through the back door and expecting to get it back via the front door from the Treasury, we said, "What we're going to do is net it out from what we pay you." This additional activity was just added to the Treasury's bill, the initial expenses. The Board had to approve the transfer of the people. I did leave Karen with the actual transfer because it hadn't happened yet. I must say it's been a most remarkable success in my view. These people came and they were integrated into the research program. These data were used more and they became much more useful to the Federal Reserve, to the government, and to the world than they were before.

MS. JOHNSON. Fate was in our favor. The issue of gathering such data on a more timely basis, organizing them in a way that users can readily follow, and standardizing the organization such that people can understand the data and be transparent about them is

something that has been a broader agenda than just our relationships with this particular group of people and where's it going to go. Timing and fate worked in this direction too. Since this episode that Ted just described, the persons involved reached the end of their working lives, retired and what not, and the responsibilities and a lot of the problems that I perceived when Ted left this on his desk was that we don't hire people that are carbon copies of the persons doing the job right now. Nobody else fits their background. R&S hires more data-oriented people than we do. How are we going to manage when these people are no longer going to be able to do this?

MR. TRUMAN. You just steal them from Flow of Funds.

MS. JOHNSON. We could've. Flow of Funds is a good analogy. We redefined the jobs and some people who caught me quite by surprise expressed an interest in moving in that direction. All in all, it has been integrated more. Instead of being this little unit where we like them at lunchtime because they tell interesting stories, their work is quite interesting and it has become integrated.

MR. TRUMAN. That's right, and we were involved before. Some people, like Lois Stekler, were as involved in the efforts before TIC came to the Board as well as afterwards. It is an example of what Jaime said earlier. When the Federal Reserve took on something, it did it right, the full enchilada treatment. And the people working in the unit probably appreciated that because they were loved for the first time in their lives. [Laughter]

MS. JOHNSON. Yes, right, instead of being marginalized. The U.S. government broadly, or the country, benefited too because it was so important along the way, especially as the more hands-on members of that team were ready to leave, we brought to bare some of our IT folks, and this thing got enormously redone in a modern IT way from the old way. And so, the data now are useful.

MR. TRUMAN. The only sense in which I was on both sides while I was at the Treasury is that this is all still done under the legal authority of the Treasury. There is one person at the Treasury who was nominally responsible for this. That person reports to the Assistant Secretary. In that sense, I was still running part of IF because that's the legal basis on which the data are collected.

MS. JOHNSON. The Congress gave this responsibility to Treasury so it has to somehow filter through.

MR. MARQUEZ. The authority to compel reporters to report the data comes from the Congress, and the Congress gave this to Treasury?

MR. TRUMAN. It's the authority to compel to report. Some of what is reported is done voluntarily, as I recall, and some of it is mandatory. But enough of it is mandatory so that the institutions are obligated to report accurately. It's an interesting story and it tells something about the Federal Reserve as an institution.

MR. MARQUEZ. What do you miss the most?

MR. TRUMAN. Not the 85-hour weeks, even though I haven't gotten down to 40 hours. I don't have a good answer to that question. [Laughter]

MR. SMALL. The Fed has the resources so that when you attack a project, you've got people, you've got the electronic systems, you have the data, you have the examiners, as opposed to the Treasury, as opposed to Commerce. Is that correct?

MR. TRUMAN. Yes, though I would put it slightly differently. I was tremendously blessed in many respects, although I wasn't ready to be division director in 1977; I was too young. Often, in my weaker moments, I was unhappy with Ralph having left us in the lurch. But I managed to reach my level of incompetence at a rather young age, and so I was privileged

to be here as division director for 21 years. It was a privilege, even if it was twice as long as I should've been here. It was rare that there was a dull day. What was attractive to me was the range of issues that you got involved with, and the excitement. It was not just working with my excellent colleagues in the division, or even the other research divisions. I enjoyed working with the other divisions at the Board and I messed around on a number of issues in international economic policy as well. Never, I would say, without the knowledge of the Chairman, but occasionally at the distress of other Board members. But I never free-lanced independently of the Chairman, or at the least with the Chairman not knowing what I was doing or interested in.

Contagion

MR. SMALL. When there is a foreign financial shock, and it gets propagated through the U.S. system, the three terms that come up as people try to understand that process are: mark-to-market accounting; too big to fail, and Glass-Steagall. Do any of these come at the heart of the problem of how crises are propagated? How does one solve these problems of propagation?

MR. TRUMAN. Glass-Steagall has nothing to do with the propagation of crises, in my view, because most of the rest of the world doesn't have Glass-Steagall type of restrictions. Moreover, one of the complications under U.S. law was that we had Glass-Steagall restrictions in the United States, but we also had Credit Suisse First Boston operating in the United States under our own law, and they were grandfathered under Glass-Steagall and allowed to continue with an investment bank arm. That was a little weird, and it looked discriminatory. Moreover, since most of the rest of the world doesn't have Glass-Steagall restrictions, and we are affected by what happens in Europe, just as Europe has been affected by our weak regulation of mortgage banking, having Glass-Steagall restrictions doesn't protect us much. In my view, it's difficult to blame anything on Glass-Steagall, or not Glass-Steagall.

Mark-to-market accounting is something that, certainly in these crises, has some people worried. There were battles on this topic going back to the 1980s, and they seem to continue. No one agrees on what is the right way. The securities firms, where there is mark-to-market accounting, say the banks are getting special treatment by not being required to use mark-to-market accounting; and the banks say that they are longer-term investors so marking to market is not relevant for them. I can see both sides of this issue. It is true that in crisis conditions, marking the value of assets to the market (depending on the market) tends to accelerate the propagation of the crisis. Is that good or bad? Would institutions be more cautious if they knew they had to mark to market? I doubt it. Would doing so limit intermediation? I doubt that as well.

MS. JOHNSON. But the issues are generic. That's not specific to some cross-border propagation. The propagation is primarily within financial systems.

MR. TRUMAN. But it is an issue in two respects. It is an issue to the extent that some jurisdictions mark to market, and some jurisdictions don't. Then you have an unlevel playing field, and you might create distortions in the system that emerged during a crisis. For example, during the 1982 crisis, our accounting for banks was stricter, even then, than in Europe. Their banks had lots of hidden reserves. As Paul Volcker used to say to me, "I wish our banks had more hidden reserves." People complained about their having hidden reserves, and about using those hidden reserves to smooth their earnings.

MS. JOHNSON. Isn't that a tax issue as much as anything, usually?

MR. TRUMAN. It partly was a tax issue because you were allowed to have hidden reserves and they were not subject to tax or they allowed banks to avoid taxation, which was an issue here. But the point is that their system operated having hidden reserves, and as Volcker

said, "I'd love to have my banks have more in the way of hidden reserves." So, there's a level-playing-field kind of issue.

And it could work the other way around. Financial flows go from the United States to Europe because we have mark-to-market accounting and Europe doesn't (or we have something close to the mark-to-market accounting and it doesn't) so people take their money out of U.S. financial institutions, put it into European financial institutions, thinking that the European banks are safer. On the merits of it, I'm even more confused about the issue than I was 20 years ago. That's my answer to that question.

The "too big to fail" (TBTF) issue doesn't come up that much in an international context though it is fair to say that European concerns post-Lehman forced more rescues in many countries than may have been needed.[55] Here in the United States, my view is that the debates about TBTF conflate two different circumstances: First, a rogue institution, such a Barrings Bank in 1995, gets into trouble, but it is isolated from the rest of the system and there is general calm in the markets. You can more easily let that institution fail and probably should. Second, in the midst of a crisis, a number of institutions are under pressure. If you let one go, you risk exacerbating a run on the other institutions, which are already experiencing runs. That was the rationale for rescuing AIG. A related issue is that all institutions have similar exposures; for example, they all were over exposed to Mexico in 1982 or to toxic assets in 2007. The result is that an institution whose failure looks like it will be an isolated event may not be. So, the challenge is to have a system of supervision and regulation that helps you to avoid these situations.

[55] Note, this was the way matters looked to me in 2009 at the time of the interview. In Europe, too-big-to-fail did not appear to be a salient issue, but arguably that is not the case circa 2013.

Moral hazard was a big issue for both financial institutions and countries in the context of various debt crises that we went through before this one. I have always thought moral hazard concerns are overblown. Not to say it's not there, but it is overblown. People used to say, "Mexico borrows too much because it knows it's going to be bailed out by the IMF." I thought that no sensible person would drive their country into crisis and then have to be exiled after you've left office, as President Salinas effectively was after 1994, because the IMF is going to bail you out. Nor did banks and investors lend too much to Asia because they had lent too much to Mexico and then they were bailed out in 1995. This reasoning struck me as not passing the smell test, even though some of our central bankers and some of my colleagues probably thought it was a big deal.

MS. JOHNSON. It was way overblown.

MR. TRUMAN. It's a bigger issue now in a much narrower context. Once you have the precedent for doing certain things for selected institutions and markets, it makes a big difference in the future. In order to do extraordinary things to rescue banks or markets, you may have to jump through more hoops in the future. Because of those tighter provisions, we reduce the probability of rescue. Now we have created a precedent, and markets will be expecting the Federal Reserve to do extraordinary things in the future because we did them in 2008-09. Therefore, it makes sense, I think, to erect higher hurdles, but not to outlaw the potential use of the tools that have been used.

We don't have an accepted narrative for understanding—a doctrine for—the propagation of crises across borders. Why do you have international financial crises if you don't have domestic financial crises? Well, we do have domestic financial crises, but they don't quite take the same form. Why do we worry about international capital flows differently than we worry

about capital flows between Massachusetts and California? There are a whole bunch of reasons for that.

MS. JOHNSON. It's not a question of whether international economics has an answer to this. It's a very pragmatic question about how things really work.

MR. TRUMAN. But there are mechanisms. You have financial institutions that operate across borders, and you have markets that operate across borders, and you have imitation effects, and there are knock-on effects. So, a crisis happens in country A, say Dubai. Then people say, "Where's the country that looks like Dubai in terms of its current economic situation? And if Dubai's going to get in trouble, then the like-Dubais are going to get in to trouble." That's one way for crises to propagate.

Another way would be to say that something happens in some place bigger than Dubai, and people scramble for liquidity. Where do they get it from? They don't get it from the like-Dubais, they get it from the places that are more liquid markets. In the context of this crisis, they started getting it from Korea, one of the most liquid markets in Asia. So, if you want to invest in Asia, you buy Korea because you can get in easily and get out easily. And this has implications for capital flows as well as exchange rates, and to some extent interest rates.

And then you have institutions that need cash. In this 2008-09 crisis, we know that one of the issues that our successors had to deal with was that a major U.S. financial institution had major foreign subsidiaries, and that major institution was taking cash out of that foreign subsidiary and impacting the banking markets in that country. That country wasn't the source of the problem. The financial institution was the source of the problem because that financial institution needed cash. There were several other financial institutions, presumably in similar circumstances, whose operations were affected at home and therefore they were affecting their

operations abroad and that contributed to an amplification of the crisis. And exchange rates start moving, and then other exchange rates are going to move because they say our competitor's exchange rate against the dollar is moving. For example, if the Korean won is going to go down, then that's going to affect the Thai baht because they're competitors. We probably really don't understand it at the time, and in each crisis there are always new channels.

MS. JOHNSON. What about in a "too big to fail" perspective internationally? I'll cite two different examples to describe the phenomenon I'm grasping to describe. One is, because of the globalization of financial markets, you have some institutions that have become very big relative to the tax base of the country in which they are created.

MR. TRUMAN. Too big to host or to be the home country for these huge financial institutions.

MS. JOHNSON. Conversely, what about countries in which the entire financial system becomes small relative to the size of the international players. Take the attack on Hong Kong in the Asian financial crisis: the plays made by market participants expecting Hong Kong's exchange rate peg to the dollar to break and against their equity market had nothing to do with policies that are wrong in Hong Kong, right? It's just that hedge funds were big enough that they could squeeze Hong Kong and force some profits out of it if they made the right bets. Other entities around the world have the fact that they're small relative to the big players now.

MR. TRUMAN. Hong Kong is debatable. I served on the highly leveraged institution working group (of the Financial Stability Forum) and we did not come to a joint conclusion on these episodes in terms of the role of hedge funds. Certainly, there is some truth to what Karen says. Interestingly, someone I know is now writing a book on hedge funds. It has lots of stories and tales in it—Karen has seen some of the manuscript I think. The author comes to the

conclusion that, on balance, hedge funds are not so bad in terms of financial stability. They're much less harmful than banks partly because the incentives are aligned better. The hedge fund can fail. And they do right and left, but their failures don't have nearly the same consequences for the system, at least so far.[56]

A better example than Hong Kong would be New Zealand. Here's a small country that is in an expansion phase of the business cycle. For that reason, it has high interest rates, but it's a small country. The Japanese have interest rates of zero percent. The United States has near zero interest rates, or low interest rates. New Zealand's interest rates are at 7 percent. Everybody buys New Zealand bonds or New Zealand X's, Y's, and Z's. You have a huge capital inflow and what is the poor country supposed to do? In addition to its floating exchange rate and open well-developed capital markets, New Zealand has the additional complication that all the banks in New Zealand are owned by banks chartered in other countries, most of them by Australians. If something happens to Australia, and many Australian banks fail, it's not clear that the banking system in New Zealand is going to be rescued first by Australia. That's the case. Then you could have more nefarious plays of betting what's going to happen to New Zealand. Hong Kong had a fixed exchange rate, so you might argue that's fair game.

MS. JOHNSON. Except we used to tell people that if you're small, and you're open, and you don't want New Zealand's problem, then you fix your exchange rate to a big, stable country. You don't sterilize, and you don't play games. You stay true to the course, and you'll be fine. Well, not necessarily.

MR. TRUMAN. The question is whether the country can take the consequences. That was the point in that case. When Hong Kong fought back by supporting its equity market in the

[56] For the record, the author is Sebastian Mallaby and the book, which has now been published, is *More Money than God.*

summer of 1998, it was not well received at the Board. The Hong Kong government basically went in and supported the stock market in a big way, and it had plenty of money to do it. The lesson is that, if you've got plenty of money, you can do this. They had plenty of money and bought 10 percent of the stock market's capitalization—maybe it was more than that—and then they sold much of it back to the market at a handsome profit. Therefore, they took the pressure off their exchange rate. And subsequently, the Malaysians put on capital controls in September 1998. Both of those actions were highly unpopular in Washington and with the Federal Reserve Board staff, and with the Chairman of the Federal Reserve Board, as not the thing that countries should do. In the case of Malaysia and its capital controls, the broad international brouhaha about what they did led them to relax the controls quite quickly. But it's a complicated question.

And you have this debate about the euro area. For the euro area, I would think, in terms of the impact of the crisis, the countries that were inside the euro area were protected more than if they had not had the euro. Under the previous regime, you would have had differential impacts on Italy, Germany, France, and Belgium. With exchange rates that were pegged but not immutably fixed, there would've been a lot more chaos. And probably, in that regard, Ireland, Portugal, and even Greece were protected, as far as the immediate crisis itself was concerned. Now, whether in five years they're going to be proved to have been better off for having been inside the euro area or outside the euro area is a more complicated question. But in terms of the protection that comes from being in a single monetary area, and the mutual protection so that they didn't have instantaneous recriminations within Europe, they were well served.[57]

[57] Note this conversation was held in December 2009. I did not anticipate at the time that the question I raised would become relevant so soon.

Conclusion

In many respects, the work that I've done while I've been at the Peterson Institute, since I left the Treasury, has been an extension of issues that I was interested in here at the Board. I worked on inflation targeting when I first left the Treasury. It is an issue that had come up when I was here and later was at the Treasury. It meant that I was working on a central bank issue, rather than a Treasury issue. I didn't want to immediately start working on something that was looking over the shoulder of the Treasury Department. Then I did work on money laundering, which you might think is odd. But I had some background because I spent so much time here working with the people in the Legal Division and in BS&R, and did some work on these issues when I was in the Treasury, it was the natural extension of some of the work that I had done when I was here and had been involved in at the Treasury. Then the work on IMF reform came from my interest in international monetary relations and issues, and a concern that the IMF was slipping into irrelevance to the detriment of the system as a whole. My work on reserve diversification and sovereign wealth funds has followed. A lot of the topics I've written on at PIIE were issues of exchange-rate adjustment and current account imbalances. They are the same types of issues that I dealt with—the people here dealt with—at the Board. You don't have the capacity at a place like Peterson Institute for International Economics to have six people down the hall who can rustle up 17 databases and apply the latest sophisticated econometrics to figure out what the right answer is, or get an answer that passes all the current fads of statistical tests. The capacity to do frontier work that involves big data sets and access to vast amounts of information and an army of research assistants, or colleagues who are collaborators, doesn't exist in that world. I have the time of half a research assistant. And I'm not sure I could use any more time very efficiently. One of the advantages of doing research work at the Board is that there are

enough people so that you always could find some resources that would be able to help you. And they're fully employed, so it's only a question of moving the resources around.

I have enjoyed these conversations. And I applaud the Board for its efforts to assemble these oral histories. I hope that posterity will be as pleased about what we have produced as I have been proud and privileged to be associated with this great institution for 26½ years.

MR. MARQUEZ. Thank you.