Federal Reserve Board Oral History Project

Interview with

Alan Greenspan

Former Chairman, Board of Governors of the Federal Reserve System

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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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March 31, 2009 (First Day of Interview)

MR. HAMBLEY. I'm Winthrop P. "Win" Hambley, and with me is Lynn Fox. We're both senior advisers at the Board of Governors of the Federal Reserve System. We're at the Washington, D.C., office of Alan Greenspan, who served as Chairman of the Federal Reserve Board from August 11, 1987, until January 31, 2006. Chairman Greenspan was nominated to that position by four U.S. Presidents: Ronald W. Reagan, George H.W. Bush, William J. "Bill" Clinton, and George W. Bush. We're interviewing Chairman Greenspan as part of the Board's Oral History Project. This is the first of a series of interviews to come.

Thank you for having us, Chairman Greenspan. We'll talk about the Federal Reserve as an organization, how you approached your role as Chairman of the Federal Reserve Board, and your relationships with several key constituencies.

Authority of the Chairman

MR. HAMBLEY. Let's begin with the Chairman's role. Where does the Fed Chairman get his authority over the Federal Reserve?

MR. GREENSPAN. By statute, the Chairman gets his authority wholly from a majority of the Board of Governors. In a sense, there is no statutory authority that exists independently of that. The Federal Reserve Act, as I recall it, specifically stipulates that the Chairman has control over the agenda of meetings. But, at the beginning of a meeting, there's nothing that prevents a majority of Board members from specifically overriding the agenda initiated by the Chairman. Therefore, as a practical matter, the full legal authority of all actions at the Federal Reserve rests with the majority of sitting members of the Federal Reserve Board. It's mainly custom, and a long history of advantages and disadvantages of doing it otherwise, that has led to the implication and partial existence of the Chairman acting as the chief executive officer. But it is not statutory and can be revoked by a majority of sitting Board members at any time.

MR. HAMBLEY. Given this agenda-setting authority, given the consent of the Board members, how did you approach that task? What did you do to set the agenda?

MR. GREENSPAN. Well, to a large extent, the vast majority of meetings are set up by the requirements of the staff—whether it is the FOMC (Federal Open Market Committee), whether it is the Board. Only in rare instances would I endeavor to initiate a meeting and set a specific agenda, for example, when emergency monetary policy actions were required.

The vast majority of Board meeting agendas were set up by staff to fulfill the requirements of running the organization. Obviously, the major topics were very often checked with me, and, indeed, the agenda, if there was any question about it, would be checked with me to make sure I didn't know anything that would suggest we ought to alter it.

The Federal Reserve System runs, to a very substantial extent, by itself. There are certain legal requirements, there are certain policy requirements, all of which have a time frame to them. There are very important regularly scheduled meetings—I assume the Monday morning meeting (where staff gives an economic briefing) still goes on—and, obviously, there are the meetings of the Board on a regular basis and of the FOMC on a regular basis.

Chairman's Briefings before Board Meetings

MS. FOX. Before each Monday meeting, the Secretary of the Board—the corporate secretary, in effect—would brief you about that morning's agenda. Can you tell us what that entailed?

MR. GREENSPAN. It was fundamentally perfunctory, and it existed when I arrived. I wasn't about to change it, but I never found it really necessary. On very rare occasions when the

Secretary of the Board was unavailable due to time or other circumstances, the meeting went forward, and I don't recall any disasters occurring as a consequence.

MS. FOX. Was the briefing just a routine review of the agenda?

MR. GREENSPAN. Yes. I think the function it actually serves is as a double check. It's a double check to make sure that there isn't some agenda item of which the Secretary of the Board is not aware. It's a double check which would say to the Secretary of the Board that this particular item is under discussion in a manner which suggests it should be postponed to a later date. I suspect that happened on extremely rare occasions.

Changes in the Frequency of Board Meetings during Chairmanship

MS. FOX. Could you tell us about your early experience at the Board when there were several meetings and official Board meetings each week? Toward the end of your tenure, there were fewer. Can you explain that?

MR. GREENSPAN. Yes. You cannot be in two places at the same time. I demonstrated that conclusively. And it was my impression that frequent meetings were a holdover from earlier times—I would say, maybe in the 1950s, the 1960s—when there was virtually nothing for the Board to do. At that time, you had full-time meetings of Governors with agendas that essentially, as I was told, included things like "Shall we give vacation and a salary bonus to the carpenter on the second floor?" The reason that happened is that there was nothing of a major policy issue. For example, before the Accord in 1951, monetary policy was effectively set by the Treasury Department.

What the Board did at those meetings was highly perfunctory. Indeed, there was an imperative that, when William McChesney Martin was Chairman, the Board meetings ended at noon so he could play his daily tennis, which was probably far more productive than what went on at the meeting. There was also a very famous case of a sitting Governor—this was in the late 1940s—who, when the Board meeting was seemingly about to run over noon, protested. He was asked, "What's your problem?" He said, "I report to President [Harry S.] Truman on what we have just done here, and he is scheduled to hear from me at 10 minutes after 12:00."

MS. FOX. I have never heard that story—the direct pipeline to the White House.

MR. GREENSPAN. So much for the independence of the Federal Reserve System.

MR. HAMBLEY. Was that before the Treasury–Federal Reserve Accord of 1951?

MR. GREENSPAN. It was before the Accord.[1]

MS. FOX. Later in your tenure, the routine Board meetings were reduced to "as needed"?

MR. GREENSPAN. I observed that the demands on the Governors were beginning to mount. I also had a personal reason. To do my job, I needed a lot more time to do research than was allocated to the Chairman, after subtracting time for all the meetings that I did not have to attend and to which I contributed very little, because my knowledge about the subject matter was far less than that of the staff.

As far as I was concerned, staff members that I trusted on such issues were far better qualified to make the judgments than I. I'm speaking specifically about items like a particular formulation in some piece of legislation mandating that the Federal Reserve do something. Now, that requires a legal interpretation where my skills clearly would be deficient, and I would routinely turn to our general counsel for recommendations. I do not recall ever rejecting that advice. I could short-circuit the meeting process by delegating certain types of activities to

[1] The Federal Reserve committed itself to maintaining a fixed and low interest rate on government bonds to help finance World War II. In 1951, the Federal Reserve and the Treasury announced an agreement, known as the Treasury–Federal Reserve Accord, releasing the Federal Reserve from its obligation to maintain the price of government bonds.

Board members who had far greater knowledge on what the issues were than I, working off a subcommittee of the Board or to individual members, and get a more efficient use of the time.

Earlier, there was far more available time in the System than was required to fulfill our statutory requirements, and therefore meetings would fill the time. But I felt that should not carry over into later periods when, indeed, it was the reverse. Shortly after I arrived on the scene, it became obvious to me that there were a lot of meetings that did not, as far as I could judge, make much sense. The Board members agreed with that, because things changed. I didn't make the change unilaterally—I did it in consultation with the members, and I think we have a better system.

Work Focus as Chairman

MR. HAMBLEY. When you were deciding what issues you were going to focus on and what you were going to delegate, were there certain things that you didn't have any question about—you were going to delegate them either to a Board committee or an individual member? How did you decide what you had to focus on as Chairman?

MR. GREENSPAN. I decided that my comparative advantage was in economic analysis and forecasting. I came to the Board with a long history as somebody very closely involved with the way the American, and later the world, economy functioned. I knew it in detail probably as well as any member of the staff, maybe pretty much more so in most cases. And there is where I could make my major contributions.

I spent a good deal of my time in areas doing what I had always done—namely, I spent my time trying to understand why the economy was doing what it was doing, and, therefore, what types of actions would alter the path in some hopefully positive way. Unless you spend enough time observing what's going on day-by-day, you lose continuity. In order to do that effectively, I needed half my time to work essentially on that particular aspect, which gave me a much better understanding and sense of the way monetary policy should function, and that's something I did not delegate to anybody. I did delegate some of the calculations on fairly complex econometric equations to various staff members who knew far better where the biases were in certain regressions than I did. But aside from that, I essentially did my own work.

Learning the Ropes at the Fed, a Unique Institution

MR. HAMBLEY. Were you able to devote your time to specific things rather quickly when you came to the Board, or did it take a while?

MR. GREENSPAN. Well, it took some while, because when I came in, I was daunted by this organization, the likes of which I had never seen before. So, before I was even remotely aware that changes should be made, I spent a good deal of time just observing how it worked.

I had to be instructed on how to run an FOMC meeting. So I got a *Robert's Rules of Order*. I read through it. I think that was the first time I ever read any such thing. And I had to learn people's names. I goofed on my very first FOMC meeting by mispronouncing Ed Boehne's name. It's remarkable what you remember; this is back in 1987.

So it took me a while to know what the Fed was all about. I had been on many major corporate boards. I didn't run a large outfit, but I ran an outfit of 50 people, so I knew something about how to run little companies. But with all my experience on the boards of companies both large and small, none of them were like the Federal Reserve. It's a wholly different type of organization, and it took me a while to get used to that.

MS. FOX. What makes the Federal Reserve so different operationally? To whom did you speak about this complex organization and how to get a handle on it?

MR. GREENSPAN. It wasn't that it was complex. It was different.

I was a director of Mobil Oil Corporation. There were a number of subsidiaries in all parts of the world. It was so complex. And the accounting, the tax treatments, and learning the mechanism of how oil moves around the world was far more complex than the Fed.

The Fed is different, and the reason it is different is the very first question you asked. There is no private organization which is essentially run by a committee in the sense that, legally, the Federal Reserve is run by the Board. There is sort of a very superficial comparison: There's a CEO, which is the Chairman of the Federal Reserve, and there are Governors who act seemingly as though a board of directors. It's not that way. What a private corporation does is that bylaws are set up in which the shareholders work with the board of directors who cede to the CEO very broad authorities. And if they don't like what he's doing, they fire him. They don't change those authorities.

The CEO of the Federal Reserve had no such authorities, no such capabilities. The result is that it is a different and a more collegial type of operation than what exists in an autocratic corporate structure. A corporation is not run as a democracy. It's run essentially as an authoritarian system. The Federal Reserve System cannot be run that way.

It's something I learned earlier, because Arthur F. Burns was a very close friend of mine. When I was chairman of the Council of Economic Advisers (CEA) in the 1970s, Arthur was Chairman of the Federal Reserve. I had very extensive contacts with him. I would go to dinner at his house maybe twice a week. I would hear all of the things that went on, because I was cleared and part of the government. There were no Federal Reserve secrets with me. He always counted on me, as CEA chair, to indicate to him which meetings of the Economic Policy Board at the White House he should attend.

So I had a fairly good grounding in the culture of the Fed. I met a large number of the staff at that time. I think Lyle Gramley and Chuck Partee were there at that point. So I got to know all of them.

My very earliest indications of how the Fed worked were from my best friend in the late 1940s, Tilford C. Gaines. He was an assistant vice president of the Federal Reserve Bank of New York. I learned all about what was going on, including his going down to Washington with various New York Federal Reserve Bank presidents to visit with William McChesney Martin. So I got the culture very early on, and I've lived with it, basically, for generations. When I entered the Fed, I was wholly unaware of a number of the internal technical things, which no one had ever told me, but I understood the culture of the institution.

MR. HAMBLEY. Were these two among your tutors when you got there?

MR. GREENSPAN. Oh, I always said that the tutoring that occurs to a new Chairman is the most interesting seminar I have ever been involved with. Rather than having the professor and a bunch of students, there is one student and a bunch of professors.

Certain areas I had never even been aware of. I had an uphill learning curve on the consumer laws that the Fed was required to implement. I was not all that knowledgeable about the significant details of supervision and regulation. And while I didn't need any tutoring on the issue of monetary policy or research and statistics or the international division, I nonetheless was pretty well tutored. Edwin "Ted" Truman [director, Division of International Finance, 1977–98] was there, and you could not avoid being tutored by Ted [laughter], whether you liked it or not. It was a most interesting learning period—a full-blown education system. I can't think of anybody who becomes Chairman of the Fed who doesn't need to go through that thing and learns a considerable amount in the process.

Preparing to Become the Fed Chairman; Nomination Hearing

MR. HAMBLEY. Nowadays, the Board staff tortures nominees to the Board with an overload of information before they are confirmed. But I gather this happened more after you became Chairman and you realized how many things the Fed was dealing with that you didn't feel comfortable about?

MR. GREENSPAN. No, I think it was imposed on me.

MR. HAMBLEY. But did it happen after you came?

MR. GREENSPAN. Oh, yes.

MS. FOX. There were briefings to prepare for the nomination hearings.

MR. GREENSPAN. I'm trying to remember. It was the Senate Banking Committee. Its chairman would have been William Proxmire at the time. It was fairly perfunctory.

MR. HAMBLEY. Yes. I remember you had a very short statement. I was sitting in the audience. I was working for a senator on the Banking Committee.

MR. GREENSPAN. Well, that was not the first time I was confirmed. I had learned very quickly that the purpose of a nomination hearing is not to hear yourself speak or to educate these guys on anything, so the shorter the statement the better. And they would prefer that the statement was zero. They just like to hear themselves ask the questions of the nominee [laughter]. That's what those hearings were all about. The really tough stuff is basically on the questions that individual Senators have. I guess I had two paragraphs or something like that. "I'm honored that President Reagan—" I can see it now.

Swearing-In as Fed Chairman

MS. FOX. Do you remember your first day at the Board?

MR. GREENSPAN. I don't remember that.

MS. FOX. Do you remember the day you were sworn in?

MR. GREENSPAN. Well, there's a picture right there of the day I was sworn in. I remember the swearing-in. Most of that day involved Paul A. Volcker saying goodbye to the staff. I was a participant, and I was saddened, in a sense. There were tears in Paul's eyes. He was leaving something that had been his life's work.

I met Paul, of all places, at the home of Tilford Gaines in 1949 or 1950. Paul was a colleague of Tilford Gaines. They were both economists at the New York Fed at the time. Paul had been associated with the Federal Reserve for 40 years, moving in and out of the System several times. So there was a bit of bitter sweetness in that period. I felt as though I was sort of moving into somebody else's family.

MS. FOX. Do you remember any particular advice or joke or words of wisdom that he conveyed to you at that transition time?

MR. GREENSPAN. Paul's only such piece of wisdom was when, shortly after I was in the Fed, we raised the discount rate. I got a note from Paul that said: "You are now a central banker."

MR. HAMBLEY. When he said his goodbyes to the staff, was he also taking you around to introduce you to them?

MR. GREENSPAN. Yes, in part.

The Role of the Fed's Vice Chairman

MS. FOX. We've talked about the unusual nature of the Board, and that there's not really a CEO. In most corporations, there's a chief operating officer or an executive vice president who has a great deal of authority. Who is that at the Federal Reserve Board?

MR. GREENSPAN. It generally was the Vice Chairman. But there is a formal historic role for the Chairman; there is not for the Vice Chairman. The role of Vice Chairman often depends on who he is. Some Vice Chairmen don't want to be the chief operating officer. Remember, we choose a Governor to essentially run the place—a single Governor, operationally—and that job in a corporation is chief operating officer.

For example, when you would have a Vice Chair who really was a corporate officer type, he would be the Administrative Governor. John P. LaWare (Governor, 1988–95) would have been an excellent such type of chief operating officer.

MS. FOX. He had come from a corporate environment and ran an institution.

MR. GREENSPAN. Yes, precisely. I don't think there is a fixed role for the Vice Chair in the culture. In my case, I always gave fairly significant powers to the Vice Chair. The Board gave me powers to set up committees and to assign various roles to people that they could reject if they didn't like them. I would tend to give as much authority as was feasible to the Vice Chairman.

Originally, the major role was representing the Board at Basel. When the Chairman did not go to Basel, the Vice Chair went. When there were meetings where you needed representation at the highest level from the Board and I was not there, the Vice Chair would go. For example, Roger Ferguson (Governor, 1997–2006; Vice Chairman, 1999–2006) was the ideal Vice Chair, in the sense that he and I agreed pretty much on most everything, so there wasn't a debate on the right thing to do. I always felt comfortable when he was speaking on my behalf that I wouldn't regret it.

MS. FOX. If it could be done simply, would you change the Federal Reserve Act and have the Vice Chairman appointed by the Board upon the recommendation of the Chairman?

MR. GREENSPAN. No, I would not do that. The Vice Chairman has to be appointed by the President, and there's nothing wrong with that. In other words, "If it ain't broke" type of syndrome, fix it not.

Chairman's Authority vis-à-vis Reserve Bank Presidents

MR. HAMBLEY. Let's talk about the Chairman's authority vis-à-vis Reserve Bank presidents. How did you perceive your relationship to the presidents? Did you feel that you had some control over them?

MR. GREENSPAN. Unless I'm mistaken, the Federal Reserve Act gives to the Board of Governors the authority to dismiss any director or executive of a Reserve Bank without cause. Now, that gives you full, unquestioned authority. Had we ever used it, it would have probably undermined the effectiveness of the System, because if you made the Reserve Banks branches of the Board of Governors, you would end up with far fewer people of quality than you would need.

Conducting FOMC Meetings

MR. HAMBLEY. One of the most important responsibilities of a Fed Chairman is to conduct meetings of the FOMC and hopefully to build a consensus for the policy action that will be taken. How did you approach that? And can you give an example of where you had to work hard to achieve a consensus and how you might have gone about that?

MR. GREENSPAN. Well, first of all, it depends who the members of the Board are in the FOMC. In the later years of my chairmanship, I would say, without question, that virtually every member of the Board—and the FOMC, in more general terms—agreed on how the economy worked.

The conceptual framework of cause and effect was held, with minor variations, by everybody. Therefore, the meetings were largely on two issues: the factual basis of what is actually going on and what policies are appropriate for that. In that type of environment, it basically got down to the issue of what the economic outlook was.

As you know, the staff makes a presentation. I would sometimes disagree with their outlook or shade it one way or the other. On occasion, before the meeting, I would argue the staff out of the particular forecast, because I thought factual pieces were missing that should be adjusted. But, mainly, I tried not to do that on the grounds that it was really quite important for all members of the FOMC to get the untarnished views of the staff on the outlook. I never edited a Greenbook [the Board staff's summary of current economic and financial conditions and the outlook] in publication. The only times that I would intervene were when I seriously doubted certain relationships. I'd have meetings with relevant staff people; probably 60 percent of the time, they talked me into their point of view. Maybe 30 percent of the time, I prevailed. For the other 10 percent, we agreed to disagree.

The issue—going into the FOMC meetings—was, basically, what position should I take? I would not purposefully advocate a position, whether I believed it or not, which clearly did not have a fairly significant consensus in the FOMC, because if you tried to go significantly outside the general consensus of the economics profession at that time, it would prove very divisive. I would be acutely aware of where the economic consensus was and where it was within the FOMC. I would obviously know where everybody stood at the previous meeting, and I had reasonable views about how the economy had changed since the previous meeting and how individuals would react.

I always went first for the areas where the policy issues were arising. I would take that period to define what I thought were the critical elements that were important to formulating policy. And, having spoken first, I would stick that on the table. That is the way in which the

Chairman's agenda has the most effect, because whose paper is being dissected is a good starting point.

As you know, it is the general view on the part of Board members or FOMC members that if you seriously disagree with the policy, you should discuss the reasons and vote "no." But if you disagree with minor parts of it, the general view was, "I don't fully agree, but I can go along." That is a "yes" vote.

While it will appear in the transcripts where there are subtle differences of opinion, that is not known for years. Therefore, there is a presumption of a consensus within the FOMC that actually is less than appears on the surface, because there are significant numbers of votes of people who would not have the policy that's being voted on as their first choice. But it is their second choice, and the difference between the first and the second is not all that great, so they don't feel as though they are undercutting principle by voting in favor of it. But it does create a sense in the public that there is far more consensus—or, alternatively, that the Federal Reserve Chairman has more power over the organization and the members—than, in fact, is the case.

Changing Qualifications of Board Members

MR. HAMBLEY. You mentioned that this was the way it was later in your tenure, when people had a common way of thinking about the economy. I gather that wasn't the case when you first got there.

MR. GREENSPAN. That was not. There were a few people, whose names you could name as well as I can who were, shall I say, peculiar. I did as best I could to get along with them, but, very often, they were dissenters in general.

In the early years, there were some political appointees whose knowledge was not all that impressive. As the years went on—very specifically, starting with the eight years of President

William J. Clinton and, I guess, the six years of George W. Bush—the majority of my tenure had Presidents who had been convinced that they needed to appoint highly competent people to the Federal Reserve Board. And, indeed, that's what happened. That changed the atmosphere: You did not have a nonknowledgeable maverick or somebody whose main job on the Board was to report to the President of the United States what happened in the meetings and who would have no qualifications to be a Board member other than being a friend of the President.

I remember the first Board member I ever met. It was in 1953, and I showed up with a writer from *Fortune Magazine*—I was an outside consultant researcher—to meet my first Governor. I thought, "Boy, this building is awfully impressive." When people walk into the Board building the first time, it really hits you. I felt that way for all the years I was there. There was something—the classical architecture—that always impressed me. In any event, I will not name who the Governor was, but when I walked out of there, I said, "The country is in jeopardy." [Laughter] He knew nothing. It was scary. So I have to say that, when I arrived, even with some of the members at the time, they were still far superior to the first one I met.

The FOMC

Forecasting

MS. FOX. How does the FOMC avoid choosing to go with the easy solution, which is adopting the consensus view and acting on it? In other words, does the FOMC make any difference?

MR. GREENSPAN. Forecasting the economy, by assuming it will continue to be much the way it was in the intermediate past, works most of the time. Neither the Fed nor any other forecasting organization has ever called a turning point except by chance. The reason is that turning points, especially in the financial area, are discontinuities in the asset prices, which would not exist if they were anticipated. Indeed, anticipating a change essentially will force it to be arbitraged away. It never happened. So you will not find in the history of the Federal Reserve—certainly, when I was there—that we forecast turning points. We were able to analyze them when they were happening, and we knew what to do as a consequence.

I sat there after the 1987 stock market crash, and I was saying to all of my colleagues, "Let's be careful. This type of event historically has always created a significant recession." We went through that early period, which was very unstable and dangerous, and we came out of it in reasonably good shape for the first time ever. In 1994, when we went into a tightening policy, we had never tightened policy without causing a recession. That was the first time we had a soft landing. But the landing strip was very shaky, and we barely made it.

So the forecasting record of any organization is, of necessity, poor. There is a retrospective view, which is remarkable. Why didn't you see this, that, and the other thing? The answer is that we are human beings. There is no way a human being can do this. You go to any organization, and they always have a view that they got it. But go back and read literally what they had to say, and it is so qualified that it's dubious. If you turn a few more pages back or forward, you will find they were making the same sort of forecast, and it didn't happen.

So there is an extraordinary bias that's built into retrospection in economic forecasting, which I experienced directly. For a long time, I thought the best forecast I ever made for the right reasons was to forecast a very sharp slump in steel production in 1958. I had a lot of major steel clients at the time. I used to say, "Boy, I bet you I can't do that again." Then one day I went back, and I looked at the literal forecast we had made prior to the actual onset of the crisis, and it did go down a little like that; the actual movement was like this. I had always believed that I got this.

MS. FOX. I want to describe your gesture, which is that the curve went way lower than you forecasted, but you recalled having forecast a fall off the cliff.

MR. GREENSPAN. Even though it was untrue. There is a remarkable bias amongst forecasters about their history. And while the Federal Reserve is wholly capable, it’s no more capable than any other organization despite the fact that it has more Ph.D.s and much more institutional knowledge of the structure of the relationships than any organization I have ever worked with.

Value-Added of the FOMC

MS. FOX. What is the value-added of the FOMC, given what you have just said about how difficult the job of forecasting is?

MR. GREENSPAN. Basically, you don’t always have to, and shouldn’t, respond at the first sign of a recession. For example, in the year 2000, after we had the dot-com bubble, we were aware that the economy was weakening, and, in fact, bond yields were falling very significantly. We decided to hold policy unchanged until the early days of 2001, after the recession had been under way for quite a while, to make certain that we did not reverse or abort the diffusion of the bubble. That sort of judgment is relevant to what one knows about the economy. While it is the case that it would be useful to move policy in advance, it’s not evident that it makes a huge difference. Most of the policy decisions we made related to how you handled what was happening at any particular point in time, and there, I think, the Board did rather well.

Preparing for FOMC Meetings

MR. HAMBLEY. How would you prepare for an FOMC meeting? How would you prepare for what you wanted to decide or what you would want to suggest? Did you have knowledge other than what had happened at the last meeting about what the participants' current feelings were? Did you canvass them before you went to a meeting?

MR. GREENSPAN. It depended on what type of meeting we were going into. If we were going into a meeting in which my fairly strong conviction was that no material action was going to be taken, I would merely do what I would always do—namely, make sure I was up on all of the data since the last meeting. I had convictions about the way the economy was working and did my dutiful reading of the Greenbook and the Bluebook (Federal Reserve Board staff analysis of monetary policy alternatives). But, more importantly, I read what other people were saying—mainly in the area of professional research, where there would be large groups of good economists. For example, from J.P. Morgan, Citigroup, and Credit Suisse, you would get the opinions of large numbers of economists. I left out Goldman Sachs, which had a very good economic operation. It wasn't their forecasts that were important, it was what they thought that was important and, far more importantly, issues that they raised or relationships that you had never thought of.

I would go into the meeting largely prepared in that way. When there was a potential significant change in policy or a very specific action the day before or the morning before the meeting, I would go down the hall and stick my nose in to each Governor's office. I'd discuss what I had intended to recommend during the session and see whether or not they would be willing to go along, or would they have any amendments or things of that nature. On rare occasions, that walk up and down the hall would change my view about what I would recommend. More often than not, it wouldn't be necessary, because we were all looking at the same data. We were all basically, as I said before, working out of the same conceptual framework.

MR. HAMBLEY. So you wouldn't have to do a similar thing with the Reserve Bank presidents, for example? It would just be the Board of Governors?

MR. GREENSPAN. On very rare occasions, I'd get on the phone. But more often than not, the Board would vote—not necessarily as a consensus, but clearly there were always enough votes on the Federal Reserve Board to carry the day. Or I would know of one, two, or three Federal Reserve presidents whose views had been expressed publicly or I had remembered them from the previous meeting or I had conversations with them. So I always had a head count before I went in. I rarely was wrong.

Collective Decisionmaking

MR. HAMBLEY. I suppose that reflects an important feeling that, when you finally reach a decision, you want it to be perceived by the world as a collective decision.

MR. GREENSPAN. Yes, that is clearly the case, but the issue is to make it a collective decision. The other way of doing those meetings—which had a fairly considerable number of people who would prefer it done that way—was to have no preparation at all, no discussion amongst the members. They all walk in, sit down, and whatever comes up, comes up.

Indeed, previous Chairmen just sat there and checked off who was where, and that was the policy. I found that a very unsatisfactory outcome, because some decisions are fairly complex, and you are not going to get them thoroughly vetted in the few hours that you have during a regular FOMC meeting. You often need a lot more time. You may have had a two-day meeting at that point, and that would be helpful, but we had this 2:15 deadline that we could not run beyond. If we ever ran beyond it, it would have been scary, because people would say, "What's going on there?"

I had never felt comfortable unless, when I walked in at the beginning of an FOMC meeting, I knew it would end before 2:15. And, in so doing, I needed to know what the vote was. Therefore, I did what would be required, granted my knowledge leading up to the meeting. As I said, the vast majority of meetings, the votes were pretty clear that, within one or two votes, the funds rate was going to be unchanged or something like that, or there was going to be 25 basis points or something forecastable.

There were a couple of meetings that threw me off. One was February 1994, which I remember exceptionally well. I knew we had to raise rates at that particular point. We had been going down, and we had not raised rates for a very long period of time. So, before the FOMC meeting, I put all of my efforts and conversation into the subject matter: We have to raise rates.

The FOMC meeting began. We were going around the room, and everyone wanted to do 50 basis points. I said, "Oh my God, what have I done?" Fifty basis points at that time would have really shocked the markets, and the economy wasn't in all that great shape. So I had to backpedal. If you go back to the transcript, at the time I'm essentially saying that we cannot do this. I knew the vote was against me at that point; they were all in favor of doing what they thought I wanted to do. I said, "Trust me, it would be very dangerous to do 50. This is very surely the beginning of the significant trend of moving rates up as the economy firms. We can catch up at the next meeting, but it is a mistake to increase by 50; we have not moved in a very long period of time. The markets, as I judge them, are expecting no change or 25 basis points, not 50." This was before you had the usual surveys when you go look at Bloomberg and get full detail of what the probabilities are of specific rate changes. That was the only time in my whole tenure when I felt as though I was out of control of the meeting. I patched it together at the end, but barely.

MS. FOX. Was that the period in which you felt that you had been conveying publicly that things needed to change, and the markets still were not prepared?

MR. GREENSPAN. Correct. Yes.

MS. FOX. The dialogue was not working as a dialogue. You were speaking, and the markets weren't listening.

MR. GREENSPAN. They weren't listening. In other words, they didn't believe us.

Avoiding Market Shock

MS. FOX. Between 1994, when you had people being surprised by changes in policy, until the end of your tenure, what were the most important policy developments that made that less likely?

MR. GREENSPAN. I tried to seek a meeting outcome in which the markets did not change at all at 2:15—meaning, except in the rare occasions when you wanted specifically to shock the market, you are far better off endeavoring to produce an expectation that is met.

An example of when you do want to shock the market is what Paul Volcker had to do in October 1979. He wanted to essentially crack what was going on. The vast majority of times, that is not what you want to have happen.

What you want to happen is, the market is gradually adjusting to events, and when the Federal Reserve moves or doesn't move, the market has pretty much accepted what is likely to happen. To the extent that we could, I or others would be suggesting where we are likely to go without literally committing. In general, I thought it worked rather well.

You don't want to surprise the markets unless there is a purpose to it. Too often in the past we would surprise markets with no particular purpose, which was not good. I'm sure there were times in which—I've conveniently forgotten where in my tenure—we shocked the market when that was not our intention.

Transparency and Improving Communications with the Markets

MR. HAMBLEY. This was also the period when the Federal Reserve was becoming more open in telling the world about its decisions and being more explicit about decisions at the time they were decided. Did you find that useful in communicating with the markets?

MR. GREENSPAN. Yes. In turn, it was. When I arrived on the scene, the Fed did not announce what it did. It didn't announce the discount rate, so you had a whole coterie of very high-paid Fed watchers, whose basic job was to read the Fed's H.4.1 statistical press release (Factors Affecting Reserve Balances of Depository Institutions and Condition Statement of Federal Reserve Banks) in some detail to infer what must have been going on and whether the Fed was increasing the pressure or not increasing the pressure in the reserves market.

MR. HAMBLEY. The Fed's balance sheet?

MR. GREENSPAN. H.4.1 is the balance sheet. Don't ask me how I remember that. The balance sheet was all that they had to go on. We never announced anything at the end of a meeting. That changed in the early 1990s, when the structure of the economy and financial system changed such that money supply was no longer the focus of policy, nor net borrowed reserves, nor the other old indicators of degrees of monetary tightening or opening up.

In those statements that came out of the Fed in the late 1980s, there was an English language problem. The language was archaic. I've forgotten now what the words were. They were words that conveyed to the public what the Fed was doing and became the lingua franca of the Fed watchers. With the breakdown of the ability to use money supply and the requirement then to announce the target for the federal funds rate—this goes back to the early 1990s, not before—

MR. HAMBLEY. Right.

MR. GREENSPAN. —that automatically eliminated a great deal of uncertainty and put a lot of people out of business. The Fed watchers went out of business when we went to specific targeting on the rate. That clearly was a major technical factor in making the mystique of the Federal Reserve largely go away. In the late 1980s, *The Secrets of the Temple* was published. [2]

MS. FOX. William Greider's book.

MR. GREENSPAN. Yes. And there was an element of truth in that. There was a great deal of mystique about what the Fed was doing. We were all thought to be "the gnomes of Zurich" displaced to Washington to do things that average human beings would not comprehend. That mystique got blown away by starting to announce a target for the federal funds rate.

MR. HAMBLEY. When you came to the Fed, had you already observed that this was not a satisfactory way of helping the markets to understand? Was this not a satisfactory way to help them get ready for what you might do? Were you thinking fairly early on that you wanted to change?

MR. GREENSPAN. I was caught up in the old-fashioned mystique, which had not changed since my first exposure to it in 1949. And there was a reverence for the Fed, based on that mystique, which I wasn't about to puncture, until it became apparent after you read enough of the biography. After a while, I got tired of reading that stuff, and I said, "Don't we have this thing called the English language, which is workable?" But coming into the Fed, I was not opening it up.

[2] William Greider (1989), *Secrets of the Temple: How the Federal Reserve Runs the Country* (New York: Touchstone).

MR. HAMBLEY. You weren't a reformer when you first came to the Board?

MR. GREENSPAN. I was not a reformer. I was a respectful holder of office within the revered institution.

The Inevitability of Openness

MR. HAMBLEY. Nowadays, the Fed is open about everything. Considered as a whole, is that a good development or a bad development? Is it bad for the Fed to have lost some of its mystery and mystique?

MR. GREENSPAN. It's inevitable. The problem that you have is a far broader cultural question. Does the mystique about life or institutions help?

Franklin D. Roosevelt, operating as President of the United States today, would have been exposed as "handicapped;" and all the horrible things that went on—and his womanizing, and all of the various things that went on would have been exposed.

When I was young and he was in office, you had a reverence for the President. I think that was a positive force in the country. This issue of everybody's linen being out to to be washed in all the electronic systems that we now have, I am not sure it is all that valuable.

There were certain views which I thought were very important to the country. There's never been a degree of patriotism that we saw back in the 1930s and during World War II. People were proud to be Americans; it was a unified country. We blinded ourselves to the fact that there was racial discrimination, and it was taken as a given and part of the culture. If you look back and you ask, "Was that good?" No. It was clearly unsustainable, because it didn't show reality. What happened is that you had, for example, very effective battalions and small Air Force squadrons of all blacks. And everyone said, "Hey, these guys know what they are doing." Now, had we stayed back in that era, would that have been good for the country? I suspect not.

MR. HAMBLEY. We're going to stop now, but I hope we'll resume this interview when your schedule will permit. We have many more topics that we would like to discuss with you. We appreciate your taking the time to talk.

MR. GREENSPAN. Oh, sure. I'll be glad to do it.

June 9, 2009 (Second Day of Interview)

Former Fed Chairman Arthur Burns

MR. HAMBLEY. Earlier you indicated that you knew Arthur Burns well when he was the Fed Chairman and that he was a very close friend. When did you first meet him?

MR. GREENSPAN. I met Arthur Burns in 1950 at a seminar of his at Columbia University, faculty of political science. I got to know him fairly well through that seminar. In fact, I chose him as my thesis adviser, much to my chagrin, because shortly after then my little business, which I had just started, began to grow very rapidly. And it kept pushing my thesis back farther and farther. So, for a good two decades, every time I saw Professor Burns, he would say, “Alan, how far you have gotten on your thesis?”

My next contact with Arthur Burns occurred in a different context from what the previous nearly 20 years were. He became an adviser to Richard Nixon during his campaign in 1968. And he chose as his assistant Martin Anderson, who was a former professor of finance at Columbia and a very close friend of mine with whom I was writing a book, but that had since been discarded because he got pulled into the Nixon campaign very early on.

I was in that campaign, and there was a general group assisting Nixon that included George Schultz, Milton Friedman, and Arthur Burns. It was a very thoughtful, analytical group of which Arthur was an active participant. He had wanted to be Chairman of the Federal Reserve very clearly, but William McChesney Martin, who had been in place at that point, was serving a term that would not run out until the following year.

Burns became a counselor to President Nixon during the first year in office and was appointed as Chairman of the Fed in 1970. I think he served two terms as Chairman.

MS. FOX. He did. What about the Fed made Burns interested in it? What do you recall of his preoccupation with the Fed?

MR. GREENSPAN. I don't know the motives other than the fact that he had been chairman of the CEA in 1953, was clearly interested in public policy, and had strong views about the way the world should work. And the Federal Reserve is obviously the advance that everyone takes from chairman of the CEA, as we see from innumerable examples since Arthur. There's a normal sequence, in the sense that the Council of Economic Advisers is very broad, but not very deep. The Federal Reserve is basically both. And I thought he thought it would be—as it was—a significant challenge. He clearly enjoyed the job, as far as I can judge, quite significantly.

MR. HAMBLEY. What are some of your memories of Arthur Burns, apart from the thesis?

MR. GREENSPAN. There are so many that it's difficult to line them up. I'm not one who keeps a file of those sorts of memories, because I think I have a limited amount of intellectual capacity for storing information. I don't tend to remember those things very well. I would have dinner at his house maybe once a week, at least. They lived at the Watergate at the time.

MS. FOX. If you were going to approach Arthur Burns with a problem to solve, how would you reach him? Would you bring him data? Would you tell him a story? How would he work through a problem?

MR. GREENSPAN. I think the best way of seeing Arthur Burns's intellectual heritage is to reach back to Wesley Claire Mitchell, who was his mentor. Mitchell was a Columbia University professor and joint author with Burns of *Measuring Business Cycles* in 1946.

Burns was an important member of the National Bureau of Economic Research (NBER), where the National Economic Council arose [and] where business-cycle analysis became an important central focus. Milton Friedman was a member and was a part of that group, and several professors of mine were at [the] NBER. Burns was an extension of the pragmatist movement of the latter part of the 19th century, and most of his professors were basically of that school. Indeed, Mitchell was. So Burns was largely a numbers person. He didn't have global philosophical views; he was very strictly focused on statistics as such.

MS. FOX. What about his personality?

MR. GREENSPAN. Well, I don't recall Arthur Burns ever cracking a joke. But he was very kind. His wife was a good friend of Andrea's and mine after Arthur died—I think it was 1987. She lived on for many years, and she used to come to my parties on July the Fourth at the Fed. We would see her periodically over the years. My relationship with Arthur was quite a close relationship—first, especially, in the campaigns. I did not go to Washington until 1974, so it was only in the later years of his Fed chairmanship that we had a virtual daily operation.

Jerry Ford [President Gerald R. Ford] had an economic policy group, which was made up basically of all of the major cabinet members and the economic advisers. The Chairman of the Fed was part of that, because it was by the book, and Burns wanted to be. But Burns did not want to go to meetings in which things of no interest to him were being discussed, which was most of the time, so he asked me would I filter the agenda in such a manner as to clue him in as to when he should participate. And I did that. In other words, I was his "inside man" in the White House, so to speak. I coordinated with him.

I was even used, or tried to be used, by President Nixon when, in the months just before wage and price controls in 1971, Arthur Burns was advocating an incomes policy. I had a call from, of all people, Charles Colson, who said, “The President would like you to speak to Burns and to see if you could talk him out of this particular notion of incomes policy.” I said, “Chuck, I understand there is a telephone on the desk of the President and one on the desk of Arthur Burns. I would suggest they might talk to each other.” And Chuck said, “You don’t understand. Nixon will not speak to Burns.” Now, I want you to understand that what Nixon was complaining about was a mild wage and incomes policy—we jawboned about inflation, and Nixon complained even about that—and it was only weeks later that Nixon himself imposed a full-blown wage and price control system.

MR. HAMBLEY. Was he objecting to a mild version of what he later did himself?

MR. GREENSPAN. Nixon turned on a dime. And the turnover of the dime was far faster than even Burns’s was. So I was not only close to Burns, but I was recognized as being a close associate of his as the years went on. And I would come to visit them on occasion when he was ambassador to Germany.

MR. HAMBLEY. Is it unusual for a Fed Chairman to be among the group of advisers of a President?

MR. GREENSPAN. It was very unusual. As Chairman, I would be glad to speak to Presidents, as I did, but I thought that you did not formally become part of it. But up to that point, there was a thing called the Quadriad. It came out of a group called the Troika that was developed by John F. Kennedy in 1960. The Troika included, as a regular discussion group, the chairman of the Council of Economic Advisers, the then-Budget Director, and the Treasury Secretary. In subsequent years—I believe it was during the Johnson Administration—they expanded it to the Quadriad, and that included the Federal Reserve Chairman. I don’t know when it was disbanded. I think it was shortly after the Ford Administration, although it’s conceivable it carried into the Carter Administration. Surely, it no longer existed during the Reagan Administration.

MR. HAMBLEY. Did something happen while Arthur Burns was advising the President that led you to think that was not something a Fed Chairman should do?

MR. GREENSPAN. First of all, you have to understand that Gerald Ford considered Arthur Burns a seminal wise man. The thought of Gerry Ford telling Arthur Burns how to run monetary policy was never on anybody's thought agenda. There wasn't any issue here of Federal Reserve independence. In many respects, there was a real serious question of White House independence from Arthur Burns. So it's not the usual view of the Fed Chairman and the President. That is a concept which developed years later.

MR. HAMBLEY. Did you learn anything from Arthur Burns's experience as Chairman that made you want to either do the same thing or something very different?

MR. GREENSPAN. I was a little concerned about the inflationary pressures that were building up in the 1970s. It's very easy, in retrospect, to say monetary policy should have been done differently. I do remember being uncomfortable, but I don't recall being particularly aggressive. I was very much concerned about the onset of wage and price controls. When I joined the Ford Administration, controls had been done away with, and I was reasonably comfortable with the fact that Fed policy was not going to be a problem. And, indeed, it wasn't at that point. It didn't really become a large issue until 1979, when long-term interest rates began to take off, and it became very apparent that the policies of the previous decade or so were unduly inflationary.

Arthur Burns has been criticized at considerable length for apparently using money supply growth to help get Richard Nixon reelected in the second term. I doubt that very much.

In fact, it's so alien to my view of what Burns would do that when he said that was not what was happening, I have no question that his view of events was the accurate one.

MR. HAMBLEY. When Burns died, had you been nominated to be Chairman?

MR. GREENSPAN. I had been nominated. The reason I remember is that, when Burns was in the hospital on his death bed, his wife, Helen, told him that I had been nominated as Chairman. And she said he expressed great gratitude and delight.

MR. HAMBLEY. Before his death in June 1987, did he have a chance to give you any advice about being the Fed Chairman?

MR. GREENSPAN. No, he did not. I was always his statistical reporter. In other words, he would always ask me about what's happening to inventories, or what's happening to the price of corn and all the various other statistics that statisticians and economists watch. He relied on me to a large extent—the way I would have relied, as Fed Chairman, on the Fed staff to keep throwing numbers up.

MR. HAMBLEY. Was that because the Fed's own staff at the time didn't have the capability?

MR. GREENSPAN. I have no idea. It was basically because Burns had that relationship with me for a number of years that sort of carried over into when I was at the CEA and he was at the Board.

MS. FOX. Earlier, when you discussed the work of the Chairman, you said that when you went to the Fed, you realized that the value-added you had was monetary policy, studying the economy, forecasting, and that's where you put your time and energy, because there were many staff people who were capable of doing lots of other things. For Burns, where do you think he put his workday, put his hours in at the Fed?

MR. GREENSPAN. I'm sure it was quite similar. I can't imagine him having great fascination with some of the regulatory questions that emerged as an ordinary part of the day at the Board. That's not where his focus was.

Tilford Gaines and Clay Anderson

MR. HAMBLEY. In the earlier interview, you talked about your friend, Tilford Gaines. How did you get to know him? He was an economist and assistant vice president at the New York Fed.

MR. GREENSPAN. And I did mention he was the one who introduced me to Paul Volcker. I met Tilford Gaines at Columbia University in Arthur Burns's seminar, as I recall.

MS. FOX. We were curious about what kind of people went to work for the Federal Reserve in the 1940s and 1950s and thought that Tilford Gaines might be an interesting example.

MR. GREENSPAN. He was at the New York Fed, not at the Board. He was a very good economist. Remember that economics was different back then. The data were far fewer, the econometric models were nonexistent. You were basically somebody who watched the cycles and turns. He wrote his thesis on the government bond market, so he was a technician. Basically, he could just as easily have been at today's New York Fed. He went on to many other jobs subsequent to that. He died at a relatively early age, because he's been dead for God knows how long. We were the same age, and he must have died in his 50s.

MR. HAMBLEY. What about him did you particularly like, other than suffering through the same seminar?

MR. GREENSPAN. [Laughter] We had a lot in common. We were both number junkies and both young. We played golf. I don't think I played with Tilford. That was Clay Anderson, who also died at a young age. He was a financial person.

MS. FOX. Was Clay Anderson also a friend from Columbia?

MR. GREENSPAN. No. He worked at the Wellington Fund in Philadelphia. The Wellington Fund in 1953, along with Republic Steel, were my first two clients. Clay worked as a researcher at the Wellington Fund. Thursday night, I'm going up to Boston to do something for a client, and lo and behold, there's going to be a couple of people from the Wellington Fund, which is now situated in Boston. It's the first mutual fund; it was formed in 1928. Now they've got thousands of employees.

Changes in the Profession and Practice of Economics

MR. HAMBLEY. You mentioned that the economics profession was very different in the late 1940s and early 1950s, and that the practice of economics was different, in the sense that there was less applied econometrics, less data. Are there other ways that the world seems fundamentally different for that profession now?

MR. GREENSPAN. The computing technology is awesomely different. I used to have a little firm that I began in 1953, and the type of information that I would be selling would be seasonally adjusted, weekly department store sales. The Fed did not seasonally adjust its weekly department store sales index, so I did that. I would create monthly series and, in later years, which I'm still doing, weekly industrial production indexes. In other words, I would be creating numbers that, for all practical purposes, are now publicly available. And I could charge a good deal of money for those, because nobody else did it. Today all of that is in the public domain. Do you remember, for example, at the Fed how we used to—and still do—wait on the tips of our fingers for the purchasing managers report to come in?

MR. HAMBLEY. Yes.

MR. GREENSPAN. Well, I used to get the purchasing managers report—before I was in government—several days before it was released, because nobody cared about the number. Nobody knew about it. I knew about it, and I used to call and say, "Do you have your numbers yet?" They said, "We'll have them in an hour or so. Call back and we'll give them to you."

It was a very different world. And there were very few players. I was a founding member of the National Association of Business Economists [later changed to National Association for Business Economics, or NABE] in 1970; I was president. And there were just a few hundred of us who were basically non-academics.

There were a lot of people in the economics profession in the universities, but they were not numerical types. They were basically Keynesians who would be essentially discussing broad economic macro theory. Only in later years did those concepts develop into econometric models. The notion of people following, on a day-by-day basis, what the economy was doing was not applicable to the universities. They kept thinking in longer terms and principles and the like.

So you had this group of economists, mainly corporate economists—they would be economists of GM and DuPont and Alcoa—every major industrial corporation had an economist. That was a different breed. Even though I was not employed as a full-time economist at corporations, a big part of my business clientele was those corporate economists who took my stuff and used it for their purposes, or brought me in to do various special presentations.

Now, there has been a fairly significant merger of economic and institutional economists. It's difficult to differentiate them. The very early versions of the merger were the Brookings Panel on Economic Activity, which I believe began in 1970, with Arthur Okun and George

Perry. Formerly, it had Walter Heller on it. I joined, I think, the second week, or something like that. I was probably the first nonprofessional academic to join that group.

I had George Perry and Alice Rivlin here about two months ago with Charlie Schultz. We used to meet once a year at the Fed. But the profession has changed in a major way, with technology being the basic issue. And as far as knowing what the value of economic products was, in 1987, I had close to 50 people working for me, turning out a lot of stuff. I went to the Board, came back 18½ years later, and could reproduce what I did back then with three or four people, with Google, with the computer systems that we now have, the websites. And the products that I used to sell back then probably, if you sold them today, would be about one-tenth the price, because it's so much cheaper to do them. But I don't do that anymore, because my comparative advantage is always creating data that no one else has got. And I still do that. But it's now a lot different from what it was.

Ideal Background for a Fed Chairman or Board Member

MR. HAMBLEY. Previously, you talked about the role of the Chairman of the Board of Governors. Would you say that there is an ideal background to be a Chairman of the Board or a Board member?

MR. GREENSPAN. Yes. I would say that no matter how we cut it, monetary policy is a forecast. Nobody can really forecast. The only thing we can do is have probabilities of what the outlook is.

There's only one forecast that I ever made of which I was reasonably sure. That was in 1975 when I had, as CEA chair, a weekly GDP (gross domestic product) series. It was not something you would want to publish or sell to anybody, but it gave me an insight into how rapidly inventory liquidation was going on. And I knew—which is the only thing you know in economics—that inventories cannot be less than zero. Therefore, when inventories are declining, the rate of decline of necessity must slow, and at some point end. At which point, by definition, if you're liquidating inventories, production is below consumption, and therefore, unless consumption collapses, production must rise. That forecast I made was right on the nose. I have never since or before done anything that well, largely because there are very rare areas where you can forecast.

There are people who will, in retrospect, say, "Oh, I forecast this, that, and the other thing." People forget that if you have 10,000 people, and you separate them into groups of 5,000 each, and you have them toss coins, then you eliminate 5,000, then you eliminate 2,500, and you get down, and finally you've got 5 or 6 people who have just won coin-tosses of maybe six or seven matches. Try to tell them they don't know how to toss coins. I mean, they really know it. And so you're always going to find people who forecast this and that. Nobody ever forecasts that they would be the one who would forecast it. You know on sheer probability grounds that you are always—in a group of 1,000 people—going to find 50 people who look like forecasting geniuses. You will never be able to know in advance who they are. It's all chance.

MS. FOX. Is humility about forecasting a prerequisite for the job at the Board?

MR. GREENSPAN. Well, no. The problem is that we all endeavor to forecast the future—not just in economics, in anything. In fact, human beings cannot survive unless we act in the future. In other words, unless we plant our crops, we'll starve.

So from the most primitive level of societies, we require a forecast to survive. People who plant crops are forecasting that the crop will come up. People who step out in the street are forecasting that a car will not come by and knock them down. You have no choice but to forecast, and yet you cannot know for certain that any of those forecasts are accurate. But, as a mentality, you have no choice but to try to anticipate, as well as you can, what is developing.

The best forecasts are—immediately, in the short run—to identify imbalances directly in the immediate period. And I have found that you can do that best by not setting up econometric models too much, which don't work all that well—or at all—but to keep your data up to date. In other words, if you know what's happening in real time, you have at least some capability of judging what the next set of events will be. But unless you have some sense of understanding that, and moving the probabilities just a few percentage points—which is what you can do, but no more—then you don't have a leg up.

Assuming, on average, you anticipate by chance 50 percent of the time. When I was at the Board, I think the Fed maybe had 55 percent—which was actually not a small difference, but we were wrong 45 percent of the time.

You need people who, one, have a sense of how economies work, and, very importantly, you need at least some members who are technically very well oriented in the plumbing of how the system works. And, indeed, when I was there—and I'd say much of this exists to this day—the staff does about as good a job of doing all of those things as I know. There are always people on the staff who have information. I found I could pick up the phone and ask a question, like "What's the population growth of China in the year 1920?" Somebody will know it, or they can find it out very quickly. Knowledge is power in that respect.

In the current period, to have some judgments of how money and the economy and deficits and bond issuance work is indispensable. There's a remarkable ignorance about what derivatives are all about in the public press and, to a considerable extent, in the public. You have a Pat Parkinson at the Board who knows better. You have a Wayne Passmore who knows better.

Those are critical players in these areas where conventional wisdom is wrong so much of the time.

You need people who are really professionals. It's not enough just to have them on the staff; you have to have them on the Board itself, because unless the Board members can absorb the level of detail that the staff is creating, it's useless. Did I discuss the first Board member whom I met?

MR. HAMBLEY. Yes, you did. You were alarmed.

MR. GREENSPAN. Yes. If J.K. Vardeman, Jr. (Governor, 1946–58), in my judgment, were confronted with, say, a Pat Parkinson, his eyes would glaze over, and his mind, whatever there was of it, would shut down. And unless you could communicate with Board members—these are the people who vote—and the thought of having people who just don't get it and are making guesses as to what they should vote on is a very scary thought. So, fundamentally, what has evolved over the years is that you can't appoint a Board member any longer who doesn't have technical qualifications. I don't recall in my memory people appointed to the Board without the qualification. There happened to be a couple who really were awful.

MS. FOX. But they had credentials.

MR. GREENSPAN. But they had credentials. There was a Governor of the Federal Reserve who was highly recommended. But aside from that, and then maybe one or two others, by the time I became conscious of issues of Board membership and the like, which really was in the late 1950s and the like, it had already changed. The Vardemans of the day were pretty much gone. And there are clunkers if you look over the Governors, but it's rare. You don't get appointed to the Federal Reserve Board in recent memory wholly because of political connections, which I regret to say was not always the case.

MR. HAMBLEY. While you were Chairman, if somebody was being thought of as a Governor, would Presidents routinely ask for your opinion about the person?

MR. GREENSPAN. Yes. On occasion that would come up. I've forgotten particularly, but more under both George W. Bush and Bill Clinton, I would say that was probably generally the case. Not that I would have a vote or anything like that. And certainly, in the last Bush Administration, they would informally ask me. But I never pushed or in any way intervened.

I didn't push Tim Geithner for the presidency of the New York Fed because I thought that was the job of the board of directors of the New York Fed.[3] But when his name came up, I jumped in, and I said, "You cannot do better than this. Stop here. This is the guy you want." And then when out of the White House came the notion of Don Kohn [Donald L. Kohn, Governor, 2002–10, and Vice Chairman, 2006–10] as a member of the Board, I said, "Absolutely." Those are the rare cases, where I had some very considerable knowledge of the people in question and really felt strongly that it would be useful for the Federal Reserve to have these people in the System.

But, in general, I did not try to create a Board of my own liking. First of all, I didn't think that's right. And I would be uncomfortable with a Board whom I had chosen who would tend to agree with me, and I'd never have a notion as to whether the points of view I held were wrong.

MR. HAMBLEY. You wanted diversity.

MR. GREENSPAN. Well, look, the only time you learn anything is when you make a mistake. If you are right all the time, or think you are right all the time, you learn nothing. And I

[3] Timothy Geithner was president of the Federal Reserve Bank of New York from 2003 to 2009.

know enough over the years that, if you're not learning, you are going to go in the wrong direction.

MR. HAMBLEY. That's an interesting segue. So you had Boards with some members that you might have expressed an opinion on, but you basically were not going to stack the Board.

MR. GREENSPAN. I wouldn't be able to. But even if I could, I wouldn't want to.

Relationship with Board and FOMC Members

MR. HAMBLEY. How would you relate to the people that were appointed to the Board? Is there some particular way you approached relating to your colleagues on the Board, other than the respectful suggestion that "You have a point of view, and I want to hear it"?

MR. GREENSPAN. Well, it's hard to know it. How would you differentiate my reaction to Board members or to other professionals? You treat them as equals; we are legal equals. They've got as many votes as I've got.

I obviously did try to persuade them about my point of view as to what was going on in the world and what should be done. That's all in the transcripts. I chose to express my point of view on policy as the first speaker, rather than the last, after we went through a general economic discussion where we largely discussed what was happening in the economy, even though there were mavericks who talked policy then when they were not supposed to—generally policy was not discussed until the very end of the meeting. At that point, between the economic and policy go-arounds, I chose to set up a little soliloquy as to what I thought was going on, where I thought the economy was likely to go, and where I thought that policy should go. And I did that, in large part, by also thinking in terms of where all the members were.

I learned very early on, which was not the practice at the time, that Board meetings are too short to solve certain major negotiation problems amongst the FOMC. I made it my business to pretty much know where everyone stood—not by calling them or anything like that, but just observing what they had said in their speeches and seeing what they said the previous meeting around the Board table. So I would know fairly well where everyone was situated, and I would rarely raise a policy option on which I thought the majority of the Board was not in agreement.

The one case I got caught was in February 1994. We had not raised the funds rate for a very long period of time. We all recognized that we were going to have to raise it. I was dropping bombshells all over the place, sayings things like, "I wouldn't say we aren't going to raise it." I gave every hint I could give about the next meeting. We got up to the meeting, and I recognized that the markets really hadn't quite taken all of our verbiage seriously. And when it came to a vote, I said, "We have to move." What I realized was that, where I thought a 25 basis point increase—which was an extraordinary move, because it was a change—was the right policy, there was a majority for a 50 basis point increase. And I got scared silly. I said, "Oh, my God, if we do 50, the markets will go berserk." If you go back and look at the transcript, you're going to find that I was basically saying: "Trust me, this is not the right thing to do." Everyone eventually agreed with me. We went up 25 basis points, and the markets were—boom! If we had done 50, who knows what would have happened? After that, I said, "I will never allow that to happen again"—not to be aware of where the center of gravity of various members was.

That was not the way the culture of the Fed was when I got there. The general view then was that everyone would say their piece, no one would talk to one another, we'd all come to a conclusion. And I said, "That is a terrible way to make policy."

It's a far more complex process than is implicit in sitting down for an hour, an hour and a half, and coming to a conclusion. There's got to be a lot of give and take. And so what I chose to do was to have many conversations when I would run into Board members or presidents at various different meetings, and I would, if there were questions that were not simple—and they were becoming increasingly complex—I would try to do what, in a sense, they're now doing at their meetings. Although I didn't do it that way, I did it another way.

The truth of the matter is that the old notion that you can just sit down and reach a conclusion misunderstands how markets respond to the Fed. You can shock them badly. My view was, you never shocked the market unless you wanted to do it purposefully—that the ideal reaction of a market to Fed policy is when the Fed moves the rates up or down and nothing happens, because they fully anticipated you were going to do it. That keeps continuity, and the policy is not jerking around.

Periodically—for example, in the early days of 2001—we purposefully moved far more sharply and sooner than the markets had anticipated, because long-term interest rates had already fallen quite significantly, the economy was clearly unwinding, and our major concern was not to move the funds rate down too quickly—after the bubble burst—because it would move back up. But we were convinced by late 2000 that the time had come for the Fed to move off its 6½ percent funds rate. We did it earlier than the markets would have expected. I think we did it ahead of the meeting. And that was done purposefully—basically, to shock the market.

MR. HAMBLEY. Was this in connection with 9/11, or was it before that?

MR. GREENSPAN. This was before 9/11. But through the later years, our general procedure was to maintain policy changes that would not upset the market unless there was a specific objective purpose in that.

MS. FOX. Let me ask about managing the dynamics of the group in that context. You've already set out your process for understanding the way they were thinking; speaking to them when the opportunities arose between meetings; and trying, by the time you went into the room, to have a good sense of what the outcome would be. Having done that for 18 years, do you think the size of the FOMC and the size of the Board is appropriate? Did you work effectively?

MR. GREENSPAN. It's a very interesting question. I never thought of that question. I would say that I always felt comfortable with five Governors.

MS. FOX. When there were two vacancies on the Board?

MR. GREENSPAN. Yes. In other words, it's not the right size for the Board, but, personally, it made it a little easier for me. It made it a lot tougher for the other four Governors, because they had to handle a lot more. But that is strictly a personal view. I didn't personally object that we only had five Governors. But from a System point of view, seven is more diversified. Right now, with two vacancies, they're driving people nuts.

MR. HAMBLEY. You've said that one of the central characteristics of a Fed Chairman is the ability to listen and to get a sense of where people are—to detect nuances and changes of thinking, and also to be listening to the market and to have a sense of what they thought the Fed was going to do, which would require continuous monitoring of both people and markets.

MR. GREENSPAN. Yes. I have a general view—I've always had this—of the way the world works, both economically and in all other areas. The way I learn is when I find a fact that isn't consistent with my global framework, I then say, "This fact contradicts my view of the world. How do I change my view of the world to encompass that fact and bring it in?" I've always done that, and I still do. It's a combination of every form of knowledge that you have. But I'm continuously testing against reality.

And that's what I did at the Board. I basically sat there and I watched what was going on. I watched all different types of statistics. I would read anecdotal remarks in the newspaper. If some people would say something, I'd say, "Oh my God, if that is right, then this can't be." You don't know where you're going to learn. Half the stuff you read is worthless, but you don't know that in advance.

MS. FOX. What about on the human side? The job involved analyzing the data, but also organizing and coordinating with the people. What was your strategy when you were challenged?

MR. GREENSPAN. When I was challenged? My initial reaction was always, "Who's right?" I recognized very quickly that, if I was wrong, it would be just a matter of time before that would come out.

I didn't like to be wrong, but the main thing was, since there are human characteristics in all of us, the worst thing that would come to me is to be proved wrong. So if somebody said something, I wouldn't say, "No." I would say, "Oh, I never thought of that."

What I tend to do, and I always have, is figure it as a debate of philosophers where only the facts matter. I obviously cared that my original position be verified, but if it is wrong, the sooner I change, the better. I would prefer that I would be right all the time, but I also know that I can't be, and, too, that it's not desirable. How you handle that is important.

MS. FOX. Were there many times that you were challenged and had an "aha" moment and thought that perhaps you were wrong?

MR. GREENSPAN. There was a time, five years ago, when I thought that I was wrong, and I was mistaken. [Laughter]

Yes. There were lots of those. I just had one the other day. Allen Sinai and I were discussing the issue of the NAIRU (non-accelerating inflation rate of unemployment). He was saying that a lot of econometricians have a financial variable in potential output, and that the financial variable at this particular stage is actually eliminating a degree of capacity capability on the part of the economy.[4] [If] you can't finance it, it's not there.

I had different reasons for not believing in this huge unused capacity gap. But with all of my statistical stuff, and all of my knowledge, I had not put that obvious element in there. I'd thought about it as a factor, but I never integrated it into my thinking. And I said, "Oh, my God. Why don't I have an equation in my view of what constitutes the effective capacity of the economy which has got, for example, the Senior Loan Officer Survey [on Bank Lending Practices] in it, or something like that?" That happens all the time. Actually, it's still a delightful experience.

MR. HAMBLEY. You have described an unusual kind of mind—a willingness to continually confront reality and to adjust your views if the facts warranted it, to give up prior beliefs. That is not a common thing for people to do.

MR. GREENSPAN. It may not be, but it's a very efficient way to learn.

MR. HAMBLEY. It's also a useful thing for a Fed Chairman, in particular, since people bring so many prior beliefs to any job. Some of those prior beliefs, if you were to act on them and not see them working out, could hinder you from doing a good job. I think you've just

[4] At the time of the interview, Allen Sinai had been president, CEO, and chief global economist of Decision Economics, Inc., since 1996.

described the financial system as an independent actor in the ability of the economy to function, which I think is something we've all been learning about.

MR. GREENSPAN. Yes, but it isn't generally the case. It's only under certain circumstances, and this is one of them.

MR. HAMBLEY. Yes, but if you didn't recognize that, and if you weren't open to that possibility, you might not be able to do things that would ameliorate the situation.

MR. GREENSPAN. Well, this is a very critical issue right now. There's a whole series of policy issues that rest on the fact that there is a considerable amount of slack in the system, and that it's pushing prices ever downward, and that the notion of an inflationary reemergence is something you don't have to worry about for a while.

Now, that may be true. In other words, I think it's important to have a financial variable in the system. It doesn't, in and of itself, negate the overall conclusion that we still have excess capacity, it's just without that factor in there—you won't be able to catch it if, indeed, it is working. And one of the things I've been doing since I spoke to Allen, and he casually raised it, is, I've been thinking about, for example, what is steel capacity now relative to what it was five years ago? And the financial variable is in there, basically, because inventory costs are critical in the steel industry.

Organizational Structure of the Board

MS. FOX. Did you think much about the organizational structure of the Board—the divisions, the six or seven line operations—while you were the Chairman?

MR. GREENSPAN. Yes, but not a great deal. In other words, I have a general, vague interest in managerial organization, but it doesn't challenge me. It's not something for which there are unique differential equations you can write which prove that certain things are right and certain things are wrong.

I was and still am very impressed by the way the Board operates. I do know that the structure of the System, with the Reserve Banks, could improve quite immensely, because there are certain rigidities in the way the System works. But the System decides it's going to work around them, and it generally has. We shouldn't be having the St. Louis and a Kansas City Bank, and a Bank in Cleveland, and none in Los Angeles. It's an anachronism from 1913. But we work around it. Does it affect the issue? No, not much. It requires that the San Francisco Reserve Bank president do a lot more traveling than probably is necessary, but so what?

I never gave much thought to the committee structure of the Board. I always took it as a given. I thought that it worked the way it was supposed to. I never really got involved. And, to the extent that I did, I would leave it to others to get involved. Roger Ferguson did a good job, for example, in that sort of activity.

MS. FOX. And before that, Alice Rivlin [Vice Chair, 1996–99] did a lot to update the structure.

MR. GREENSPAN. Alice was good, yes. I generally viewed the Vice Chair of the Board as the chief operating officer who would engage the whole question of how the day-by-day operations ran and who reported to whom. I never sat there and decided explicitly who the members were going to be of each of the committees. When there were openings, I would generally have the Vice Chair make a recommendation. If I disagreed, I would say so, but that was very rare.

I had a tendency not to want to run the shop and control it. I didn't feel very comfortable in having, essentially, to determine who was going to be where in all of the various cases—rather than letting the consensus determine it, which is what it did.

In one sense, the statute doesn't give the Chairman all that much power. Theoretically, he can only set the agenda for the Board meetings. But then the majority of the Board can upset that, too. People look at the Chairman of the Fed as the chief executive officer of the System, as though it's like a corporation. Of course, it is not anything like that. There is no power for the Board Chairman other than convention and persuasiveness.

I always used to make a joke about being elected Chairman of the FOMC every February. Theoretically, that's not a statutory role, and it's become the convention. But I suspect it probably wasn't in the very beginning. Or we'd vote on making the New York Bank the institution which implements monetary policy. It's really quite remarkable how little of what the Board does is specifically required by statute—or the Federal Reserve Act, for that matter.

Relations with Senior Staff

MS. FOX. During the course of your tenure, there were discussions internally and externally about the internal structure of the Board of Governors and the very crucial senior staff—the division directors—who worked closely with the Chairman. Perhaps it was the end of the Volcker years, early in your years—do you remember them being called "the Barons"?

MR. GREENSPAN. The Barons? Oh, yes. Yes.

MS. FOX. There was an argument that the Barons had too much power, and that the Board was very siloed. Early on, and even later, certain Governors argued that the way the Board was structured and the power of the Barons was undermining the Governors' roles as members of the Board.

MR. GREENSPAN. I did hear those arguments. I don't know why that is the case, because if four Board members got together and agreed, they would have control of the total Federal Reserve System, including the 12 Reserve Banks and the Board. Unless my memory fails me, there is an article in the Federal Reserve Act stipulating that the Board of Governors can dismiss without cause any director or officer of the Federal Reserve Bank, which means, for all practical purposes, the Board is in control. Any four members of a Board could get together, and the remaining three—including the Chairman—would become wholly ineffectual. All that we would have are our own votes. It is true that the Congress requests that the Chairman come up, but it would be fascinating to see what would happen if it was no longer the Chairman who was basically the leader of the organization.

So those who say they were blocked out, I wasn't quite clear what they had in mind by that. And if there were Barons in the staff, it was because they were pretty formidable people. I remember who they were. They were people who, in many ways, were much smarter than the average Board member, had far greater technical knowledge, and had greater historic experience. I thought that was pretty neat. In other words, you'd had people on whom you could count.

MS. FOX. What advice would you give another Chairman about how to work effectively with those formidable and experienced people?

MR. GREENSPAN. Well, it shouldn't even be an issue that comes up. I was never acutely aware of the issue. I would meet with individual heads of the various different divisions or, in many cases, with other staff members where a division had two or three very good people. That was always the case in research.

My own view had very little to do with who was head of what. I would often reach down into the various divisions for people whom I thought would be useful on certain issues with which I was dealing. I did it quite often. For example, I dug down to get Nellie Liang because she knew things that nobody else in that division knew. She had data and she had information that was very important to me. This was particularly true on the issue of stock repurchase by corporations, which had important economic implications. I spent a lot of time there.

And then I'd spend a lot of time with Wayne Passmore, the reason being that his knowledge was so formidable. I didn't go through the hierarchy, and that may have caused a little friction. In other words, I didn't go visiting Wayne Passmore by first asking his boss. I said, "Forget it. I have no interest in doing that." In retrospect, I probably gave some problems to certain people. I'm sorry, but I would do it again.

Maintaining Quality Staff at the Board

MS. FOX. What challenges do you remember having in maintaining the quality of the Board staff?

MR. GREENSPAN. As far as I could judge, we never had problems with recruiting people of the highest quality. We couldn't pay them the levels they could make elsewhere, but the value of being involved in significant policy issues was drawing people from everywhere—the best academics, the most knowledgeable people on all different sorts of subjects. So I never saw a problem in recruiting.

Although we had no problems recruiting, I was also aware that if recruiting problems ever happened, we'd be in serious trouble. It never really happened in the years I was there, so it became a potential problem, but never an actual one.

MR. HAMBLEY. But at one time, didn't the Board have a serious turnover problem that led it to develop a new pay system and to declare independence from the government in that regard to avoid concerns?

MR. GREENSPAN. I think we were having many more problems with H-1B visas than we were with that sort of stuff. I think we picked up the issue of the pay-scale differential early enough to avoid any serious concerns.

I don't know of any serious problems we had. I don't recall people leaving. I'm sure there was one or two—I think there may have been—but I don't recall major people leaving because of salary after the changes were made. There may have been one or two just prior to the changes, but it was more a pending problem than it was, as I remember it, an actual problem.

And we had no problem going up to the Hill. There was no legal requirement that the Board pay civil service salaries. It became a convention. And since so much of what the Board did was convention, it was an important change, but the Congress had no problem with it.

Selection of Reserve Bank Presidents

MR. HAMBLEY. You touched on this subject of the Reserve Bank presidents. Talk about the process by which those people get their jobs, including the way that they get approval from the Board. Do you think that's an appropriate process?

MR. GREENSPAN. It varies from time to time. Early on, when I was there, the board of directors of the Reserve Bank would send three nominees up to the Federal Reserve Board, and the Board of Governors made the final choice. That was early on. Then it became two or sometimes one nominee. In a couple of cases, just before my departure, there were pretty firm pressures coming from the Bank's board itself. I thought the early version was probably the better one. But I also thought—as I indicated earlier—that it was very critical that we not employ the effective power of the Board on the Reserve Banks for fear we would lose the quality of the type of operation that they were running.

My view was that it probably was not a good idea to impose a president on a Bank. The directors, in cahoots with the officers of the Bank, probably had a far better judgment as to who would be the best president or the best officers.

MR. HAMBLEY. So when they sent a slate of three nominees, was it pretty clear at that time whom they preferred? Was your inclination to accept their preference?

MR. GREENSPAN. Sometimes, but not always, no.

MS. FOX. How did the conversation proceed?

MR. GREENSPAN. Sometimes we would just basically say, "Any of the three," as I recall—then they could make a choice if they wanted. I don't remember that specifically, but it was extremely rare that the Board would say, "None of these three nominees are adequate."

MS. FOX. Who talked to whom when a Reserve Bank president needed to be replaced? Did you talk with the chairman of the Reserve Bank's board of directors or the chairperson of the search committee? Did someone else on the Board side, one of your Governors, do that?

MR. GREENSPAN. I think it varied very much according to circumstance. More often than not, there would be an obvious candidate. I don't remember that particular process all that well. I would hear about nominees. Since I wouldn't know the nominees, other than a very few of them, it's all hearsay and all discussions. And I would just essentially—because I didn't know anything, particularly—rest on the judgment of others more, because they knew the potential candidates better.

And I didn't feel adequate to make a judgment, except in cases like Tim Geithner, whom I knew very well, and, on occasion, others who I had relationships with—in which case, I would basically say, "We're going to tell him." But the vast majority of the nominees were people I had never known. On occasions, the nominee for the presidency was from within the Bank, and

I had met the person. But it's extremely rare that I would have ever worked with them. They'd always be the person sitting in the back of the room, never saying a word. What can you learn about a person like that?

MR. HAMBLEY. I think you've described, basically, a willingness to let other people who have a better sense of this person and his or her qualifications make that judgment, and it would be very rare for you to undo that judgment.

MR. GREENSPAN. No, I preferred that they make the judgment because I didn't know enough. I felt very uncomfortable about doing it.

MR. HAMBLEY. You were always described as a very powerful person. But it was powerful without being interested in having power over your other Board members or over the Reserve Bank presidents.

MR. GREENSPAN. Power was never my interest.

MR. HAMBLEY. I understand, but you gained power by the force of your mind and the persuasiveness of your arguments. You were not interested in deciding who was going to be your Board colleague, who was going to be the Reserve Bank president. These people are going to be voting. They're going to have the same vote you do on many things, and you care about the outcomes. But you didn't want to determine it. You didn't want to stack the Board or the Bank presidencies. I think that's rather remarkable.

MR. GREENSPAN. You're saying it's remarkable. I don't think it's necessarily remarkable.

MR. HAMBLEY. Maybe I've been in Washington so long—

MR. GREENSPAN. [Laughter] Maybe you have. You've been polluted.

MR. HAMBLEY. Thank you for taking the time to talk.

August 13, 2009 (Third Day of Interview)

Fed Chairman's Relations with Board Members

MR. HAMBLEY. Let's talk about how you as Chairman related to various key constituencies such as Board members, Reserve Bank presidents, the Congress, the press, and the public. One important constituency of a Chairman is members of the Board of Governors. Once the members had been confirmed, once they had their committee assignments, how did you go about working with your Board colleagues?

MR. GREENSPAN. Well, to repeat, the Chairman of the Federal Reserve has to be acutely aware that even though he or she is technically the CEO, he does not have the powers that a corporate CEO has, in the sense that, once the board of directors of a corporation appoints a CEO, the CEO actually has unlimited authority over the decisionmaking process of the organization and tends to, as I like to put it sometimes, have essentially a dictatorial role until he or she fails. And then the board of directors reasserts itself and changes the nature of the corporate governance.

At the Federal Reserve Board, as we've discussed previously, all authority of the institution resides in the majority of the Governors. The Federal Reserve Act is written in such a manner that the Board itself has full control over the Federal Reserve Banks by being able, without cause, to discharge any director or officer. That is full control. As I discussed previously, we recognized that to implement that, in any general way, would probably undermine the cohesiveness of the System and eviscerate the powers of the Federal Reserve Banks, which would serve nobody's purpose that I am aware of.

For Board members, because the legal statute put unquestioned power in a majority of the Board, on which I would have only one vote, I thought that it was appropriate to deal with Board members essentially as one-on-ones. That's what the legal issues are all about. I can call myself "CEO," but it has no meaning whatsoever except that I can put in front of the Board the initial agenda, which the majority can then change immediately. So, effectively, there is no power there except persuasion.

That doesn't mean that everything is up in the air and has to be argued from scratch. There is a fortunate tendency that has evolved—and it's essentially precedential, but not fully—that the Chairman is to speak for the Board and for the System as a whole. And unless there are important dissents, the rest of the Board and, indeed, the rest of the FOMC tries to accommodate the Chairman as best they can.

There is a limit to that, and, indeed, one need only read the dissents that occur periodically. But you have to realize, they are really very few. And it is not credible that a number of educated people—in some cases, extremely well-educated people—from backgrounds in which they were "the boss," so to speak, would all of a sudden give up what is psychologically, in a sense, their way of functioning: namely, to recognize they have a problem, try to get control of it, and do what is necessary.

You cannot assume that you have seven Board members who happen all to believe exactly the same thing, which is immediately dismissible as any credible hypothesis. What you then conclude, if you get the type of unanimity we tend to get, there has to be an obvious persistence of a willingness to acquiesce in the view of the Chairman, provided it doesn't go fundamentally against the view of an individual Board member. The same issue extends to the FOMC.

MR. HAMBLEY. Is part of it that, once the Board members got their assignments, they had a lot of autonomy in the areas that they were responsible for, and you felt somewhat the same responsibility: If a committee had produced a proposal for the Board's consideration and had sent it to the Board, would you be inclined to accept it unless you had some strong reservation?

MR. GREENSPAN. I went a little further than that. On many of the issues where I felt I had less expertise than those on the committee had or the staff had, I would tend to automatically assume, knowing the people with whom I was dealing, that if they had a thoughtful insight into a problem or a solution, I could readily sign onto that without any real qualms. Had I tried to delve into issues that the Federal Reserve Board is legally responsible for in all respects, 28 hours a day would not have been enough.

MR. HAMBLEY. So, part of the issue is the breadth of the responsibilities of the Board?

MR. GREENSPAN. Yes.

MR. HAMBLEY. Each Board member has to trust the other members in the areas for which they're responsible.

MR. GREENSPAN. That is exactly right. On broad issues of policy, the whole Board has to debate them and get them set. But once they are set, then allowing [the] staff to implement the policies of the Board, and the committees of the Board, to essentially mediate between the staff and the Board and essentially present to the Board a committee's recommendation is the most effective way that I saw that the Federal Reserve System would work best.

MS. FOX. During your tenure, how regularly would Board committee chairmen check with you, providing progress checks, reporting, and making sure they were headed in the right direction?

MR. GREENSPAN. Many of the issues that went to committee were often initiated by a staff presentation. And the result of that was, the Board members would have a chance to interact with one another in questions for the staff person. Often, we could tell fairly quickly whether there was any significant problem with how [the] staff implemented the previously stipulated policies on certain issues that the Board had decided. So much of that discussion occurs at that meeting, and it was rare that I would find a chairman of a committee of the Board coming up to me and saying, "Do you think we ought to go this way or that way?" In 18½ years, it did happen several times, but extraordinarily few.

The Board's Responsibility for Regulating Consumer Financial Services Laws

MR. HAMBLEY. When a committee brought to the Board a proposal—perhaps about supervision, consumer affairs, or the payment system—that you felt uncomfortable about, how would you handle that?

MR. GREENSPAN. Let's take Consumer and Community Affairs, in which we have a fairly large ongoing number of individual issues that had to be raised. In that area, I voted in favor of every single recommendation of the staff, save one: That turned out to be a means by which you would calculate interest. I insisted that the formula was algebraically inexact, and to make the Federal Reserve put a stamp of approval on a calculation that didn't make algebraic sense when it was a shortcut struck me as inappropriate. So I voted "no," and I think I was probably the sole negative vote.

Aside from that, I know of no issue in which I voted other than "yes" with the staff, in part because the Federal Reserve Board is not asked for its opinion on the policy, it's asked for its implementation of a statute and the presumed notions that the Congress had in passing such legislation. And I felt that I had far less insight in making those judgments than either the

General Counsel's office or the staff of Consumer and Community Affairs. So I cannot recall a case in which I basically voted against or opposed a suggestion that came up from staff in a presentation to the Board for final adjudication.

MR. HAMBLEY. The calculation that you were referring to is the annual percentage yield calculation under the Truth in Savings Act.

MR. GREENSPAN. Yes. It's still wrong. [Laughter]

MR. HAMBLEY. So it was rare for you to vote against a proposal that had gotten to the Board table for consideration. Were there times where you became aware of an issue and, in setting the Board agenda, sent the item back, saying, "I don't want this to come to the Board this way. I would like you to go back and think about this again"?

MR. GREENSPAN. No. I never remember a single instance.

MS. FOX. When the Division of Consumer and Community Affairs presented to the Board, for consideration, rulemakings involving consumer financial services laws, the Community Reinvestment Act, any broad credit availability issues, or issues involving low- and moderate-income consumers, did those issues influence your thinking more broadly about the economy, monetary policy, the Fed's mission, or your role as Chairman?

MR. GREENSPAN. Some. But, by its very nature, it wouldn't really touch upon issues of monetary policy. It's essentially a micro issue, and it's a very serious question as to whether or not it serves a useful function being at the Board. My vague recollection is that, originally, the Board was opposed to it. The Board did not choose to have that function, because it has nothing whatever to do with supervision and regulation or monetary policy. In other words, you can implement both of those key functions without a consumer affairs division. The reason why the Congress put it at the Board was, they presumed we were the best able to do it. Rather than it helped us, essentially it helped the Congress.

I found some of the issues interesting, but it was essentially extraordinarily detailed discussions of various different ramifications of interpreting what the Congress meant when it had an ambiguous phrase—which it tended very often to have, in order to get votes that would pass and get legislation. It's not that the writers of the act just didn't realize that they were unclear; it's that they had to be ambiguous to pick up the other two or three votes in the Senate or in the House they needed, because you can then have a situation where one person will see one part of the elephant, and the other person will see the other part, and the fact that they're the same elephant, they don't know. But the Board cannot deal in that type of ambiguity; it's got to be very specific. Now, it's what is often called "legalistic hairsplitting," where I don't know the principles by which you make certain of those judgments. There's a general term called the "intent of the Congress," which means, what would they have in mind if they had it in mind? And it becomes a somewhat arbitrary analytical procedure from which I can say I learned nothing—except we shouldn't do things that way. [Laughter]

MR. HAMBLEY. Also, it was easier to articulate a general principle about the way things should be or the way one would like them to be, but overlying those general principles on actual products, actual markets, and actual practices is often extraordinarily difficult. Congressional intent was not always clear, because the Congress hadn't gotten that far into the subject itself. So a certain amount of decisionmaking was going on that wasn't literally forced by the statute, and that brought in other kinds of concerns.

MR. GREENSPAN. Yes. It brings a concern to me, because the Board is a group of unelected officials making law. I think there's a serious constitutional issue in that. Indeed, there is a currently sitting justice of the Supreme Court who is an old friend of mine who, when I first entered office in 1987, said to me, "I want you to understand that I think you work for an unconstitutional organization. But fear not. I am the only one of the justices who believes that. [Laughter]

The Fed's Use of Its Authority to Declare Acts and Practices "Unfair or Deceptive"

MR. HAMBLEY. While you were Chairman, by statue, the Board had some authority to declare certain acts and practices by banks involving home mortgage loans or credit cards as unfair or deceptive. Whether or not it was constitutional, there has been an issue about whether the Fed should have used that authority, particularly in the mortgage and credit card areas. Do you regret not having acted?

MR. GREENSPAN. First of all, "unfair" is a moral judgment based on a whole value preference system of an individual. Unfairness as an issue is something that should be voted on by the Congress. That's not only my opinion, but it was all of the Board members' opinion.

There was considerable reluctance on the part of the Board to make judgments—and indeed, the staff was very uncomfortable with exactly the particular phraseology which you adduced. We agreed 100 percent that, if it is an unfair or an egregious practice, it should be outlawed. Indeed, it is probably in violation of 20 different fraud statutes. But the judgment in reality, in a specific instance, of what is unfair or what is fair is a very different thing. The Federal Reserve Board then becomes judges of what is essentially an ethical, moral question. And in this government of a democratic society, you do not put an institution of unelected officials in the position of making moral judgments to which the rest of the society must legally adhere. That is in violation of all of our underlying views of what constitutes a democratic society.

We can go ahead and make such judgments. Indeed, if the Congress enforces it, we will make such judgments. But I came in late in the game. In other words, it wasn't I who essentially said, in the very beginning, "This is very difficult for the Board." I didn't. I came in late in the game and merely identified the issue that was bothering the staff.

The staff had considerable difficulty in specific instances whether it met the threshold of unfairness. "For the life of me," I said, "I can't figure it out. If you want me to toss a coin, I'll do that." But that's not an appropriate issue, so the staff continuously fought back with the staff of the relevant banking committee. And, at the end of the day, the Congress said, "You should have done that." But it is a very ambiguous issue. And if you're asking me, "Was the staff wrong in the position it took? Were the rest of the Governors wrong in agreeing with the staff?" The answer is "no."

MR. HAMBLEY. It's awkward. These authorities, by their nature, are the Congress saying, "We, the Congress, will *not* make a judgment. We will delegate to you to make a judgment, in part because you know so much more about things going on in the financial system." And where you're impelled, you're put into a very awkward position.

MR. GREENSPAN. It's got nothing to do with one's knowledge of what particular financial products are or are not. It has to do with one's fundamental set of ethical standards of what constitutes "fair," "unfair," "good," and "bad." They were having the same difficulty in the Congress that the Federal Reserve was having, and so they basically said, "You do it." I think the record will show that the staff on innumerable occasions didn't say, "We won't do it." They went up to the Congress and said, "You have to define more explicitly for us the particular criteria that we would employ in order to make these judgments. If not, we will find that we are using the arbitrary whim of individual, unelected officials to set the legal statutes enforced by law for the American people." We were having trouble with that. We were asking the Congress, basically, to give us not authority, but definition. And we never, in my judgment or my memory, succeeded in doing that.

MR. HAMBLEY. The Congress—particularly with regard to home mortgage loans—grappled with the issues of unfair lending practices. And being unable to deal directly with whatever issue was bothering somebody in the Congress, the Congress often would hope that, by giving this kind of authority to the Federal Reserve, it would get the result that the Congress wanted, but that it couldn't get through explicit legislative action.

MR. GREENSPAN. That would be true if they were, in fact, legal issues—or, I should say, "technical issues," with respect to the nature of the product that we would have more knowledge of. Or the legal issues of what banking statutes had to say, which we knew more than they did.

Clearly, a legal division of the Fed often wrote many of the statutes, and so they knew that. That's not what this issue was. This was an issue of morality and ethics, which we all bring to bear on an issue, and it was not a factual issue with respect to the nature of the financial system or the products that were being employed, which would give the Federal Reserve technicians an edge on making a decision of what is fair.

This just gets to a fundamental question: Are market prices fair? Now, that's got nothing to do with whether you're an economist or anything else. That's got to do with one's fundamental, underlying set of ethical codes. There is no substitute for that, and you cannot get around it by just using a lot of words.

The Board's Decisionmaking Structure

MR. HAMBLEY. Could you talk about the strengths and weaknesses of having a board run an organization like the Federal Reserve rather than, say, having just an agency head? Were there ever times when the Board didn't work together effectively as a group?

MR. GREENSPAN. I'd rephrase it. Was there a point in the ongoing day-by-day deliberations where I felt I was about to lose control of what events were going on? There was one. It occurred during an FOMC meeting. I had the view that our first move in February 1994 in raising rates, after not having raised them in a long period of time, should be 25 basis points and not 50. I had assumed all along that the issue was going to be between 0 and 25. When a vote became close, I realized it was 25 to 50. That was the only time I recall when I felt as though the FOMC was going in a little different direction, which seemed inconsistent with the way we function.

So there was a certain managerial loss there. I was blindsided. And it's important for the Chairman of the Federal Reserve never to be blindsided. You should never be in a meeting in which something very unexpected happens that is time relevant, where there's no time to go through it again or something of that nature, basically because if you have a seven-member Board—or five, or whatever it is now—it's critically important that there is a coherence and consistency in what the institution does. And if there is a corporation where there's a chief executive officer, that's automatically set, because the ultimate will of the decisionmaking is essentially by the CEO.

That is not the case at the Board. And so I always felt that I would always try to vote with the majority—which I actually always did—because it's the only way to get a majority of the Board members controlling how policy evolves and the analysis of what the alternatives are and the risks involved are. You cannot afford to have a fragmented Board, because if you do—and there are times when that's been the history of the Federal Reserve—it does not serve the institution well.

I thought the problems that Volcker had at the tail end of his reign were quite destructive for the System. And you cannot have a system going in one direction, with the whole staff and operation of the flow of information focusing on that, and then going, "Psst!" It's difficult to make policy in a disjointed way.

People often asked me whether I tried to go into a meeting of any type with an open mind. I said, "Almost never," in the sense that I had an open mind before I focused on the subject matter, but I should hope that, with due deliberations, I could get my view changed by others' comments. But that should be done leading up to the vote, and it should not come at the tail end. In other words, if you have real differences amongst Board members, it's far better to see if you can work them out in advance than have a vote in which there is a discontinuity in previous policy. It creates problems for the markets, obviously. More importantly, it creates internal problems for the System, because once you are committed to something, it's difficult to turn around.

And so I would say that, when a Board vote occurs, that should be almost like some congressional vote where you know what the vote's going to be in advance, because it's been worked out. It's gone through committees.

Surprises were okay when the Federal Reserve System was not an important vehicle. It is no longer the case. It hasn't been for a long while.

The Importance of Avoiding Public Disagreements

MR. HAMBLEY. Was it important to avoid making public any disagreements between the rest of the Board and the Chairman?

MR. GREENSPAN. Yes.

MR. HAMBLEY. Did those situations arise?

MR. GREENSPAN. There were a fairly significant minority of decisions I voted for that would not have been my first choice, but they clearly were the choice of the majority of the Board members. It had nothing to do with the factual analysis. We all agreed with the facts. But there were potential alternate explanations of the facts and, therefore, alternate policy choices. And I couldn't argue that I'm certain I'm right and I'm certain they're wrong. The world doesn't work that way.

So, in many instances, I would temper my views to conform to what I realized was a vote of a much broader segment of the institution. That didn't happen often, incidentally—it was remarkable when I was here—except at the very beginning, when we had a few mavericks. The Board held a surprisingly consistent general view of the way the world works, and the main disputes were factual. In other words, it was just "Is the housing market going up or going down? Is this going this way or that way?," not how the system works.

The Chairman's Relations with Reserve Bank Presidents

MR. HAMBLEY. Another constituency of the Fed Chairman is the Reserve Bank presidents. We have talked about how they are selected. But once they were in place, how did you manage relationships with them? For example, were there situations where you felt it was important that everybody have a consistent view, but some of them didn't? What would you do in a situation like that?

MR. GREENSPAN. Well, there's a limit to what you can and what you should do. On a day-by-day basis, you're talking to all the Board members, who are all sitting in the same building. But you don't have that view of the periphery, with the possible exception of the New York Reserve Bank.

There were always numbers of presidents with whom I did not agree on how they looked at the world. I won't mention any names, but there were a few peculiar people who represented their District very well. They did what they were supposed to do. I don't recall, incidentally, if we ever had a dumb president. That didn't surface from the boards of directors, and they usually were technically very good.

Whereas the Federal Reserve Board had a more conceptual comity in the way the System functioned, there were more outliers amongst the Banks. The conventional wisdom that there are more hawks in the Reserve Bank presidencies than there are within the Board of Governors, I think, is historically accurate. I experienced that. But the presidents themselves were not homogeneous. There was more difference amongst the presidents of the Banks, with respect to their general framework of how the economic world worked, than was the case at the Board.

MR. HAMBLEY. If Bank presidents thought differently about what monetary policy should be and would give speeches, did you ever feel it necessary to encourage them not to say certain things that they wanted to say or to get more on board with the program with the decisions that had been made? How would you approach that?

MR. GREENSPAN. Gingerly. My general view was that the Board members and the presidents were all independent agents. I almost never commented on or criticized one of their speeches, although, on rare occasions, a president would call me up and say, "I'd like to say this. Do you think it's a good idea?" and we'd discuss it. And one would go one way, and the other another. As a general rule, I would sometimes cringe at what I heard some of the presidents—even some of the Board members—saying, but I never said anything about it.

MR. HAMBLEY. Did that ever cause any problems for monetary policy?

MR. GREENSPAN. No—none that I'm aware of, let's put it that way.

The Chairman's Relations with the New York Fed President

MR. HAMBLEY. The president of the New York Federal Reserve Bank is different from all the others. From a Chairman's point of view, how different are the relationships with that president compared to the others?

MR. GREENSPAN. Well, a convention has built up over the years—with a very rare exception in the Volcker situation—that the Vice Chairman of the FOMC always votes with the Chairman. And so, in that context, the Vice Chair always knew where I stood before going into the meeting and could argue with me.

Jerry Corrigan was not a withering leaf on the vine [laughter], you know? Jerry would often change my mind on certain issues because he had been around longer than I, and I very much respected his market knowledge.[5] That tie exists, and it does not exist with the other presidents.

MR. HAMBLEY. Is the tie partly reciprocal, in the sense that it also commits the Chairman to be supportive of initiatives undertaken at the New York Bank?

MR. GREENSPAN. Generally, although strangely enough, in practice, I would say that probably extended across the System. I never recall not supporting a Reserve Bank initiative,

[5] E. Gerald Corrigan served the Federal Reserve System for nearly 25 years, including time at as a special assistant to the Chairman at the Board of Governors and tenures as president of the Federal Reserve Banks of Minneapolis (1980–84) and New York (1985–93).

with one exception, where I think one of the Districts—to remain unmentioned—couldn't find a building, when they had to abandon their original 1914 building.

They were looking for new office space in the bottom of a hugely depressed commercial real estate market. And so they were coming in with a new building, and I was saying, "Now, wait a second. Are you going to tell me that you cannot find what you need in a relatively recently built building selling at half its original [laughter] price?" And, sure enough, they came back: "We can't build the vault here" and all. So I gave up. They knew that they have basically printed money that they can spend [laughter]. And so it was one of the very rare areas when I would have questioned what the individual Banks were doing, because, remember, it's the Federal Reserve Bank Affairs Committee. That committee was very powerful. I don't recall ever finding myself at odds with the recommendations of that committee. I just assumed they dug in where they had to and had gotten it straightened out. And I thought it worked well. I may have been wrong on that, but I doubt it.

Long-Term Capital Management

MR. HAMBLEY. The action taken by the New York Fed involving LTCM was controversial.[6] When that occurred, did you feel that you had to stand by President McDonough of the Federal Reserve Bank of New York? Did you feel comfortable with the decision?

MR. GREENSPAN. I was a little uncomfortable with it on the grounds that that was the first time we had intervened. There were no monies involved—aside from the coffees that we provided.

[6] Editor's note: In September 1998, the Federal Reserve Bank of New York facilitated discussions in which the private parties arrived at an agreement for refinancing Long-Term Capital Management.

But there was no way that, if I had a qualm, I was going to express it publicly. I was fully supportive. It wasn't a close call. I could very legitimately see that what they were doing had to be done. To my knowledge, there wasn't a lot of communication with the Board about LTCM, but there was also a time frame issue.

It's not that I seriously disputed what was done—I didn't. I just would have preferred that it would have been handled more in the way of one-on-one with the owners of the LTCM and the individual banks who ultimately showed up at the Fed. I thought it probably would have been better if it could have been done bilaterally—in other words, get the meeting to be set up not by the New York Fed, but by one of them, so they all sit around and recognize that they had mutual interest.

The action that was taken, incidentally, was the right action because it was in the interest, by any objective criteria, of the lenders to LTCM—and also the owners, in part—to do what they actually did. I just would have felt more comfortable if the initiation of the meeting that created that unanimity had occurred at the behest of one of the members rather than the New York Fed. But if that is a big issue, that's got to be silliness. Compared to the stuff we're doing now [laughter], it's ridiculous!

The New York Fed President Voting on Monetary Policy

MS. FOX. The New York Fed president always has a vote in the FOMC—I assume historically, because the New York Fed is the operations arm of the FOMC and manages the Desk.

MR. GREENSPAN. That's not the reason. I think it occurs in the 1935 act.[7] It's essentially recognition that the New York Fed is basically "first among equals." My recollection is that the New York Fed gets a vote because the statute says so. So it is not an internal rulemaking. In other words, a majority of the FOMC cannot take that vote away from the New York Fed.

MS. FOX. Have times changed since the statute was instituted? Does the New York Fed need to have that vote at every meeting?

MR. GREENSPAN. I frankly don't know. I think it is right to rotate the votes of the FOMC, essentially, to give ultimate control of monetary policy to the Board. I don't know if it was the 1933 act or the 1935 act.

MR. HAMBLEY. The 1935 act, I think.

MR. GREENSPAN. Yes. Benjamin Strong was the key player. Benjamin Strong, the president of the New York Federal Reserve Bank in the late 1920s (1914–28), was the intellectual and power center of the Federal Reserve System.

And what history tells us is that, with the Depression and the like, the Congress restructured the Federal Reserve to put the central power of the system into Washington and take it from where it was, for de facto reasons, in New York. There was no legal issue which said the New York Fed is the most important bank. Of course, it turned out that way, because a very significant part of the financial transactions of which it was part occurred in the New York Federal Reserve District. I don't know what the congressional deliberations were leading up to the act, but I will bet part of the issue was a "bone," if you want to put it that way, thrown to the System that New York would continue to hold a critical place.

[7] Editor's note: An amendment to the Federal Reserve Act in 1942 gave the Federal Reserve Bank of New York a permanent seat on the FOMC.

And New York still holds that place. It is the fiscal agent of the Treasury. It's the individual Reserve Bank with which the primary dealers operate. In other words, most of the transactions that are relevant occur through the New York Fed. As a consequence of that, it remains the premier Reserve Bank. But I suspect that it's primarily the fiscal-agent issue that's relevant.

MR. HAMBLEY. In the 1935 act, this entity called the Federal Open Market Committee, which had existed internally within the Fed—

MR. GREENSPAN. Called the "Open Market Committee" at that point.

MR. HAMBLEY. That committee was formalized by statute to be the Board and these five rotating—except for New York—Federal Reserve Bank president members. The statute made the decisions of the FOMC binding on the System, and that's what you were referring to. It shifted the power from New York, where it had been de facto, to a larger group that was centered on the Board. And you think that the New York Fed always voting may have been a consolation prize for being deprived of the primacy that it had had previously?

MR. GREENSPAN. I don't know that. The only way to tell would be to go look at the hearings leading up to the act and how that developed. I don't remember that.

An early predecessor to the FOMC was called the "Open Market Investment Committee," which was a de facto meeting of all of the institutions—the Board and the Banks—to discuss monetary policy, the conceptual framework of which only emerged in the mid-1920s. And when they recognized that each individual Bank affected the other Banks, which was not the case in the early notions of the System, nor when it was originated—all the Reserve Banks had different discount rates, for example—when it became aware of the fact that the open market operations had a universal effect, then that coordination amongst the individual Banks became an issue, and that constructed the so-called Open Market Policy Conference, which then morphed through statute into the Federal Open Market Committee, with the very important decisionmaking capabilities. And it's actually in that particular unit in which the independence of the Federal Reserve becomes critical.[8]

The Chairman's Relations with Congressional Oversight Committees

MR. HAMBLEY. Another constituency of yours, or any Fed Chairman's, is the Congress—specifically, the committees that oversee the Federal Reserve to make sure that it's doing what the statutes ask the Fed to do and not doing what it's not supposed to do. How did you as Chairman relate in particular to the chairmen of the two principal oversight committees of the Federal Reserve? Generally, how did you approach relations with those important people?

MR. GREENSPAN. Well, basically, to keep them informed. On occasion, I agreed with the chairmen of the banking committees in the House and the Senate; on other occasions, I did not. But that was irrelevant to our formal relationships.

We were required by practice and statute to convey certain things to the banking committees either through [the] staff or other means. In that regard, I did not add to or subtract anything from what I was aware my predecessors did.

To me, the Federal Reserve is a creature of the Congress. We were created by the Congress; we essentially can be altered by the Congress—obviously, with the acquiescence of the President. But they're our boss. We are a financial subsidiary, essentially, of the U.S. Treasury—not legally; it's de facto. Our dividends go directly to them.

[8] Editor's note: Allan H. Meltzer (2003), *A History of the Federal Reserve, Volume 1: 1913–1951* (Chicago: University of Chicago Press), pp. 149–50, 260–61, 436.

But as far the structure of the Federal Reserve, the Federal Reserve operations, and the oversight of the Federal Reserve, it's the two banking committees that are the central vehicle through which we communicate what we're doing and try to convey to the Congress that we are operating in a manner which they perceive we should.

MS. FOX. Did you rely heavily on the Board's congressional people? Did you get advice from others outside of the Board who might know about congressional intents and interests? How did that work?

MR. GREENSPAN. Basically, I would lean most heavily on the internal congressional affairs staff and, especially when relevant, the Board's legal division. In other words, I essentially let the legal division and our congressional affairs staff determine what I should and shouldn't do. That's their job. I might balk because I was too busy to do certain things, or I didn't think it was appropriate, but that was extremely rare.

The Federal Reserve's Response to the Regulatory Consolidation Proposals

MS. FOX. At one point, the Congress and the Clinton Administration thought it might be wise to separate bank supervision from the central bank. During that time, there was certainly a strategy of informing the Congress—and maybe also the larger population of people that were interested—about the Federal Reserve's opinion on why banking supervision should stay at the Fed. What do you remember about the thinking, the strategy making in that particular instance?

MR. GREENSPAN. I think it would have to be 1992, 1993, because it was the early stages of the Clinton Administration. Gene Ludwig (Eugene A. Ludwig, Comptroller of the Currency, 1993–98) and Frank Newman (Frank N. Newman, undersecretary of the Treasury for domestic finance, 1993–94, and deputy secretary of the U.S. Treasury, 1994–95) were the relevant people. The three of us were discussing changes in the potential structure of regulation, and we had come to an agreement about certain changes that would occur. Then what popped out, much to my surprise, was legislation that essentially took a big chunk of supervision away from the Federal Reserve.

I thought it was essential for the Fed to have direct ties with banks to learn how they function, what they are doing, their views on the market, and, most specifically, to be able to talk to their senior officers and get a sense of what's going on that cannot be conveyed by a written document—which is essentially what was then being proposed instead: We were supposed to get the reports from the Comptroller of the Currency and do what we had to do about it, but we didn't have regulatory banking responsibilities or examination responsibilities. I thought that was wrong.

Frankly, it was wrong because I was blindsided, and I wasn't quite certain that all of a sudden, at the very last minute, the President had overruled what those two guys had agreed to. I'm not to this day sure of that. So I created a fairly quick response of how we'd get up there, and I think it was a tough haul, but we prevailed. We prevailed because they were wrong. [Laughter] Sometimes that happens in this town, but not often.

MS. FOX. That strategy involved making sure that the people who listened to the Fed's point of view on that particular issue were well informed?

MR. GREENSPAN. Yes. I tried to tell them that it does matter whether the Fed has direct examination authority for part of the banking industry—or whether it has none, effectively.

MS. FOX. Earlier, during the Administration of George H.W. Bush, there had been a similar effort when John LaWare was on the Board.

MR. GREENSPAN. Yes.

MS. FOX. And the same strategy was used?

MR. GREENSPAN. Yes. Well, we were never blindsided. In other words, that was up front. That occurs periodically. That always was a turf operation. [Laughter] But we had lots of fertilizer.

MR. HAMBLEY. This episode that you were talking about in the Clinton Administration—that was the occasion when you did an op-ed, saying that the Fed needed to be involved in the supervision—

MR. GREENSPAN. I did?

MR. HAMBLEY. Yes. You also said that there shouldn't be a single supervisor.

MR. GREENSPAN. There shouldn't be a single regulator. Yes. I think that's right.

MR. HAMBLEY. And if there was, it shouldn't be the Fed.

MR. GREENSPAN. That's right. Actually, I do remember what I did say. The critical issue—which is factually the case—is, there should not be a single regulator. That was the major issue, which they wanted.

I remember Senator Sarbanes asking me a similar thing. I was talking about sunset legislation in general—the idea that all institutions ought to go through a congressional review. And Sarbanes asked me—thinking he had caught me—he'd say, "Of course, you would say that was true of the Federal Reserve Act as well?" I said, "Most certainly, Senator." And I believe that.

In other words, I felt there shouldn't be a single regulator. It shouldn't be the OCC [Office of the Comptroller of the Currency], which is what they were trying to do. But it shouldn't be the Fed, either—that there was a certain advantage in the structure that we had, which ought to prevail. That won the day, although it was touch-and-go for a while.

MR. HAMBLEY. The fact that you did an op-ed was unusual for you.

MR. GREENSPAN. I frankly don't remember having done that. [Laughter]

MR. HAMBLEY. It suggested to me that the Fed was quite concerned for a while about the way things were going.

MR. GREENSPAN. Oh, absolutely.

MR. HAMBLEY. The Fed was really blindsided by the Administration's consolidation proposal.

MR. GREENSPAN. Yes. I think it was more Gene Ludwig than it was Frank Newman. I've always had suspicions of Gene. [Laughter]

November 19, 2009 (Fourth Day of Interview)

House Banking Chairman Henry Gonzalez: Release of FOMC Transcripts and Minutes

MR. HAMBLEY. In the last interview, we had begun talking about a Fed Chairman's relationships with one important constituency, the committees that oversee the Federal Reserve in Congress: the Senate Banking Committee and the House Banking Committee and, more recently, the House Financial Services Committee. We touched on what you thought was necessary for a Fed Chairman to do relating to the chairpersons of those committees. You said that you always tried to keep them informed even if you didn't always agree with them on particular issues.

Some of those relationships were very contentious, such as the one with Henry Gonzalez, who was chairman of the House Banking Committee. For Gonzalez, there was the issue of the FOMC transcripts. Tell us your memories of that controversy and what happened as a result of it.

MR. GREENSPAN. Well, Henry Gonzalez was anxious to get a far more transparent Federal Reserve System and policy than the Board thought prudent at the time. Ultimately, as I recall it, he would have liked to have seen the FOMC deliberations on television.

What I and all of my colleagues were acutely aware of was that those sessions—as you can tell from the transcripts—were a valuable means by which this group of diverse individuals with different degrees of expertise on various subjects came together. And, with the interaction that occurred, there was an accretion of knowledge. There was value in the willingness on the part of the president of one of the Banks to say, "I'm not sure I'm right on this issue, but I've just noticed certain things going on in our District that may have something more than just chance associated with them." And another president would pop up and say, "That's very interesting.

We're seeing much the same thing." That process brings up a whole series of interactions and new knowledge that we didn't have before.

Later on, as this process became more open, we observed that a number of the FOMC members would read their FOMC presentations, because they knew they were going to be recorded, knew they were going to be in print at some point. I always felt uncomfortable about that, because it was taking away the spontaneity and the willingness to say outrageous things—which, on occasion, were really outrageous. But 1 out of 10 of those outrageous remarks would spark some very useful piece of information. So the general view that I had, and I think at that time pretty much everybody on the Board had, was that there would be a significant loss of the quality of our deliberations.

We recognized our statutory mandate to basically implement the best policy that we knew how. At the same time, we are clearly overseen by the Congress. Our authorities stem from the Constitution, but Congress is our overseer. And the committees essentially are of that nature. So we are obligated to be as open as we can without conflicting with the basic issue of the efficacy of monetary policy.

It was that view which came out, and which arose when we were having our disputes with Gonzalez. It also came out at that time that we kept transcripts of FOMC meetings. I hadn't been aware of that, and, I gathered, none of the other members on the Board had been aware either. We knew that there were recordings, but we always presumed that they were there for making notes, and then you use the same tape and record over it again, and that they were never saved. So when it came out that we had these transcripts of the meetings, the ability to keep them confidential was critical, because if they were released, the efficacy of FOMC meetings would probably go down by 20 percent.

MS. FOX. When do you recall learning that there were transcripts? I think you had already said publicly, "We do minutes. We destroy the recordings." Then you learned that you actually had this pile of transcripts. How did that happen?

MR. GREENSPAN. I do not recall, but somebody came into my office one day—I've forgotten who it was—after I had made some of those remarks, which reflected my understanding of what was going on. My statements were based on my knowledge at the time. He said—it was a he—"You know, of course, we have been recording these things. We don't erase the recordings." And I said, "What?"—meaning, "You have?" He said, "We have transcripts of all the meetings going back X number of years." "Well, this is a nice time to hear about this," I said. I knew we were going to have difficulty, and I knew we had to release that to Gonzalez as quickly as possible.

Had we had a couple of weeks to sit down and discuss it with everybody and get a position, I think it would have come out somewhat differently, but not a great deal. But I do remember that I was quite distressed by the fact that we would have to do an about-face with Henry Gonzalez.

As it turned out, it wasn't all that bad. We still got the five-year moratorium on public release of the transcripts. But I will tell you, subsequent to that period, when everybody knew about it, there were three or four people who were reading from written notes in their opening remarks at the FOMC who hadn't previously.

MR. HAMBLEY. You could see that what you were worried about was happening.

MR. GREENSPAN. Oh, you bet.

MR. HAMBLEY. You felt, after the existence of the transcripts that you hadn't been aware of became publicly known, that you had to make the transcripts available. But to preserve the integrity of the policymaking process, there had to be a delay. Is that how the five years came about?

MR. GREENSPAN. Well, yes. But there was something in between that helped us a great deal. I think this was the time when the whole Board went up to testify before the Congress.[9] There was a telephone conference of the FOMC before it. We made that public in the minutes. Gonzalez said, “They were conspiring about what they were going to do up there.” He expected all sorts of things. He wanted us to make the actual transcript available, because the notice of the meeting appeared as part of the minutes. I said, “We’re not going to give you the transcripts, but I’ll tell you what. Send somebody down here. We’ll set them up. We’ll turn the tapes on, and they can hear them, provided that not only you as the chairman of the Banking Committee send a designate, but the ranking member has to send his.” And that’s what they did.

There was this huge fuss, but you have no idea how bland that tape was. There was no political stuff. I don’t know what they expected. But they expected that there would be secret stuff, and that when we talk, it would be the *Secrets of the Temple* type of operation.

The ranking member’s attorney or whoever it was came down and said, “You know something? That should be played for the public, because that’s the way policy ought to function, as demonstrated to civics classes in high school.” I never heard a word from Henry Gonzalez on that. I never heard a word from his lawyer, Armando Falcon.[10]

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[9] In October 1993, the Board of Governors and Federal Reserve Bank presidents testified before the House Committee on Banking, Finance and Urban Affairs. The hearing focused on making written transcripts of FOMC meetings publicly available and on the process for appointing regional presidents. Testimony given suggested that the Fed did not maintain meeting tapes; it recorded over the tape used to prepare summary minutes of the FOMC meetings. Subsequently, Chairman Greenspan revealed that written transcripts of FOMC meetings dating back to 1976 existed. Today, transcripts of FOMC meetings for an entire year are released to the public with a five-year lag. Alan Greenspan (1993), “Testimony by Alan Greenspan,” statement before the Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives[, October 13].

[10] Armando Falcon served as counsel on the legal Staff of the House Committee on Banking and Financial Services beginning in 1989; he became general counsel in 1995.

In later years, Armando Falcon was pretty bland, but he was a firebrand in those days. Armando never said a word. He didn't mention it. The issue just disappeared, I think, in part because we had demonstrated that this stuff is not what they thought.

What we do is a formal economic evaluation. We're a group of policymakers trying to peer into the unknown future as best we can and do optimum policy for the country. That telephone conference had very little if anything to do with the meetings, I vaguely recall. It may have had things on the logistics and a variety of other things. But it was a basic monetary policy substance discussion that was going on.

I've forgotten exactly the sequence, but what I found most interesting is that the five-year delay in releasing transcripts came out of it. It struck me, it was going to be very difficult to get five. I fought for five. We got five, and it's never been questioned since. In other words, either the logic of it is such, or the conspiratorial view of the Fed has disappeared.

MR. HAMBLEY. Since then, the Fed has begun releasing, and then releasing more rapidly, minutes of the meetings.[11] The Fed also has begun, and then has continued to do, the FOMC releases [postmeeting statements] that didn't exist at that time.

MR. GREENSPAN. As part of the five-year delay, we also speeded up the minutes. That was the time when we moved them up. The major problem we had in the timing was, it took time to listen to the two- or three-hour tape, condense it, and write it. It was not an issue of our basically saying, "We're not going to do it because of market conditions." We didn't. It was wholly a mechanical issue of how rapidly the minutes could be done and released. Since then, it's been more rapid.

[11] Editor's note: In 1993, the FOMC decided to combine the content of its postmeeting "Record of Policy Actions" and "Minutes of Action" into a single document, "Minutes," which were published three days after the subsequent FOMC meeting. In 2004, the publication of the minutes was accelerated to three weeks after the FOMC meeting.

There is a very long history here that goes back to the 1950s when there was a conscious effort for the FOMC to be "constructively ambiguous." That was the term, I think, that was used. The argument was—it is a valid argument—that if the markets know where the central bank is moving, it'll get the bid-ask spreads moving very dramatically in one way or another. What you want is a very liquid market, which occurs when the bid-ask spreads are very tight and there's a lot of volume. That is at a maximum when there is maximum uncertainty about what the Fed is going to do, because you have uncertainty on both sides of it. That general premise held for many years, into the 1960s and beyond. And the secrecy issues that were always associated with the Fed were based on that fundamental premise.

The markets themselves, however, have gotten larger, and that type of additional buffer is no longer needed. That became apparent five, six, seven, eight years ago. So the need that existed back in the 1950s as a conscious effort—and held for many years thereafter—basically got undercut as the financial volumes themselves rose to such a level that there was no longer a need to worry about whether in, say, the Treasury bill market, the spreads were going to be very narrow, and that the differentials, say, the structure of the market's degree of efficiency, needed constructive ambiguity anymore.

As that has occurred—and it was occurring in the latter years of my tenure—we gradually began to unwind. Ben Bernanke has kept going, because the markets have continued to change. Until September 15, 2008, then that all disappeared.

MS. FOX. With Chairman Gonzalez, there was an initiative to pressure the Fed across the board in every regard. During that period in which Gonzalez was attacking the Fed, you were quite calm and respectful.

MR. GREENSPAN. Of Gonzalez, yes.

MS. FOX. Yes, and in dealing with the whole issue. What about your philosophy or personality allowed you to take that approach?

MR. GREENSPAN. Well, it was partly Gonzalez himself. He truly believed the stuff he believed, which I thought was based on less than full factual information. He wasn’t a vindictive person. He wasn’t mean.

On a personal basis, we got along very nicely. He always used to visualize himself as a mathematics expert. We used to discuss that. I think he taught math in grade school or something of that nature.

I always thought it was the appropriate position. The Federal Reserve essentially views the Congress as its overseer and accords it due respect by that very nature. My view was that he was, effectively, representing the country. And we at the Fed are a bunch of unelected officials. We can disagree, and did firmly disagree, on factual issues and on policy questions. But it was always in the context that they are, and were, responsible for our oversight. I also realized, personally and peripherally, that while in this case the vast majority were things he actually believed, there was still some element of political stuff that he didn’t believe. But, strangely enough, he was a far greater populist than any of them today.

The proportion of his convictions to what he was doing was much greater than a number of the people who’ve turned populist for practical reasons related to when the next election date is on the agenda. And you can see that. You can see it in the votes in committees. You can see it in votes, in a way. I never thought that Gonzalez, for example, would vote against something he believed in. He came out of the Wright Patman school. When Arthur Burns would testify before Wright Patman, he always said, “Arthur deserves a double scotch this evening.”

With Gonzalez, it wasn't personal. It wasn't vindictive. If you sense I was calm, there was nothing to be non-calm about. That's what he believed. I think he was wrong. He had a right to believe what he believed. He was representing a significant part of the country. I'm not elected, he is.

MR. HAMBLEY. On a personal level, he may have felt much the same toward you. Do you have a sense that the two of you were going to disagree violently about things, but that Gonzalez was basically an honorable man who was trying to do the right thing, to act on his own convictions? Did you get any sense of that from him?

MR. GREENSPAN. I think a little, yes. He invited me to San Antonio periodically in order to do things.

Congressional Advice on Monetary Policy

MR. HAMBLEY. From time to time, important members of the Congress would give the Fed strong advice about what appropriate monetary policy should be. We just mentioned Henry Gonzalez. Another example would have been three senators—Don Riegle, Paul Sarbanes, and Jim Sasser—in the early 1990s. Other examples would have been Senators Tom Harkin, Byron Dorgan, Harry Reid, later in your career, and Jim Bunning. How would you, as Chairman, react to strong congressional advice about the proper conduct of monetary policy?

MR. GREENSPAN. Well, I was significantly influenced by a very important fact. Through all my 18½ years at the Fed, I do not recall a single instance where a congressman or a senator requested that we raise interest rates. With regard to all of the gentlemen to whom you referred, it was left unsaid and unstated. That fact alone tells you something. In short, I don't take it seriously.

Strangely enough, it's not true on other issues. In other words, I always thought that Senator Kent Conrad, for example, was a thoughtful person, and his knowledge of budget issues was profound. He held very much the same views that I did. So when he would say, "I don't agree with you on such and such a thing," I would listen, because I thought I might learn something. I was in a position where I would dutifully argue back.

Otherwise, I'm acutely aware that monetary policy cannot essentially encompass a view in which the only interest rate that is not too high is zero. Not everyone would agree with that. It becomes strictly an issue that they state their point of view, and I will respond to them. I'm sure there were occasions when they would give me information that would change my view. But it was very rare.

Testifying before Congress and Fedspeak

MR. HAMBLEY. You had to testify before the Congress many times. Did you have a strategy for testifying, or was there something you were particularly trying to accomplish in your congressional appearances?

MR. GREENSPAN. It varied. It depended on the particular testimony.

MR. HAMBLEY. Whatever the subject was, when a member of the House or Senate would ask you a question, what struck me was the attention you paid to it, the seriousness that you gave it, I think in line with what you just said. These people are elected. They have a status that is different from a Fed Chairman. They have a kind of legitimacy, even if you don't agree with their point of view. They need to be listened to respectfully and responded to respectfully. That struck me as something you did. Maybe it was subconscious, maybe it was conscious.

MR. GREENSPAN. No, it was conscious. It was conscious because that was my belief.

MR. HAMBLEY. If you were to advise a Federal Reserve witness about things to do and not do when testifying before the Congress, do you have rules of thumb that you would follow yourself or give them as advice?

MR. GREENSPAN. I assume you're not referring to "Don't chew gum" or something like that. Yes, take it as a serious, solemn occasion. It may not always turn out that way. It may turn out to be less impressive than that. But this is a reflection of the constitutional process that got us where we are. I've never forgotten that, because I've always been extraordinarily aware that this country owes an unbelievable debt of gratitude to the Founding Fathers who wrote a document that has essentially held sway for over two centuries.

Even in the extraordinary, almost constitutional crisis following the 2000 election, you still had Al Gore giving what I thought was the most impressive concession speech I ever heard. There's something about this country in which its institutions are rare in the world. I would never go up to the Hill without an awareness of the fact that this is democracy at its root. This is the way it functions. And this is the way we got here, and the way it's always been.

I'm acutely aware also that there are histories in which people on the floor of the House would beat each other with bats; it wasn't exactly civil. But the institutions have wonderful historic content. Still to this day, when I pick up a book and I read, say, a hearing in the Ways and Means Committee in 1907, there's a little bit of awe in that they're very similar to what we do today. There's an incredible sense of continuity that goes all the way back, rooted in the Constitution. This could have been a very different country if we didn't have, basically, the whole Bill of Rights, plus issues that got resolved—with difficulty, but they got resolved.

The one blot on all of that is the Civil War, in which there were issues of habeas corpus being rescinded, and there was a very serious question as to how the system would survive. It fundamentally came out of the one regrettable fudge that occurred in the Constitutional Convention, which was the slavery issue. It was never resolved before the Civil War. So it got fudged. It was a festering sore, and it blew up. Since, we got beyond that—we have elected an African American President. If you'd forecasted that in 1840, they'd have put you away for clear intellectual instability.

MS. FOX. One time you said to me that, when you were testifying on a particular topic, you started to speak, and you realized that what you were getting ready to say would be a headline in the newspaper, and so you stopped and you went in a different direction. You were obviously able to hear yourself as you testified and have this other audience in the back of your head. How did you do that?

MR. GREENSPAN. It's very simple. You construct a little hypothetical screen on top of your head, which is the following morning's *Washington Post* headline. You can see it up there, and you say, "Uh-uh, go in the other direction."

MS. FOX. When did you come by that ability?

MR. GREENSPAN. Well, probably in the Ford Administration. I became acutely aware that if there is any way your words can be distorted, they will be distorted. So you have to be very careful. One of the reasons that I learned what we subsequently call "Fedspeak" is, it's used as a transition from "about to make a mistake" to a more politically correct answer.

MS. FOX. Politically correct, in the sense that you weren't going to disturb markets or end up on the front page of the *Washington Post?*

MR. GREENSPAN. Exactly.

MR. HAMBLEY. Is some of what was called Fedspeak simply the difficulty of a specialist speaking to a nonspecialist audience on something that he knew a lot more about than they did?

MR. GREENSPAN. Yes, that's part of it. There's really several Fedspeaks. The one Fedspeak that is truly Fedspeak, which is utterly incomprehensible because it didn't make sense to begin with, is what would happen to me on occasion when I realized I'm halfway through a sentence and I do not want to complete that sentence. I would roam off almost irrelevantly, because I didn't care what the transcript said. Then I'd morph into what I thought was really an appropriate answer.

Ordinarily, in a regular conversation, you just keep going and correct it, but you can't do that when you are testifying, because a misformulation that may be irrelevant in a normal conversation that you correct five minutes later is set in stone. You can't afford to say anything that you did not intend to say. In other words, my fundamental endeavor up on the Hill was, "Don't make any inadvertent news."

MR. HAMBLEY. After one experience, as I understand it, you stopped doing television interviews. Was that because you were afraid you couldn't control the content?

MR. GREENSPAN. What happened was well before I came to the Board. I had agreed way in advance with David Brinkley, who was then doing the Sunday ABC show, to be interviewed. The date was set, and I hadn't realized I was going to be sworn in before then. But I did it anyway. I recall that Sam Donaldson kept pushing me. He's still around. I saw him the other day. He's still got as many marbles as he ever had, I'll put it exactly. He kept trying to press me on forecasting the stock market. I kept evading him. He wouldn't let me off the hook. I couldn't say to him, "Look, Sam, when I was in the private sector, you could ask me that question, I could give you some sensible answer. I can't now." I couldn't say that. I said, why put myself into a position where it's awkward, and I have to appear ungracious or something like that? So I never did television again. The only time I was on television in my recollection was, basically, in testimony or some public speech. I don't think I ever did anything.

MR. HAMBLEY. The concern was that some misformulation would rock the market one way or another, and it really wasn't what you meant anyway. So did that make you cautious about what you would communicate and when you would communicate?

MR. GREENSPAN. Absolutely. There was an overriding issue, because my normal inclination is to say something novel and new to keep people interested. And I said, that's not my job as Chairman of the Fed.

The Press and the Federal Reserve; Communicating with the Market

MR. HAMBLEY. How did you approach relations with the press?

MR. GREENSPAN. Well, it basically starts with the individual people who are the key contacts with the Fed at the *Wall Street Journal*, the *New York Times*, the *Washington Post*, the *Economist*, and the *Financial Times*. *Financial Times* has come up recently, but it wasn't a big deal back then. I would pick and choose. To those who were the most knowledgeable, you could talk and try to explain what it is you're doing.

Obviously, we didn't pick who was going to cover the Fed. Generally, they were not bad. I thought several of the *Journal* people were very good. But most of my communication was through speechs, because you needed a platform of enough length to cover and demonstrate the subject. Instead of having a bunch of conclusions with reasons why, I took time to indicate why we're doing something, not that we are doing something.

MR. HAMBLEY. So you would use speeches sometimes to prepare people for changes that you were going to make, or thought you were going to make, in the near term?

MR. GREENSPAN. Of course.

MR. HAMBLEY. Did you always have the idea that, before the FOMC changed something, there would be a need to prepare the ground? Was that always part of your strategy?

MR. GREENSPAN. No. Generally, it would be ideal if the response of the markets to an FOMC meeting was zero, nothing, which means, of necessity, that you would be preparing the market. You would not be doing monetary policy in a discontinuous manner. If you're going to change from this period to the next period, you would phase it in orally in a manner that, when you actually moved, the move was fully discounted in the marketplace. With the advent of federal funds futures, that became easier to calibrate, because we knew where the markets were all the time. We didn't have that in the beginning. And that changed a good deal.

But there were certain times when we wanted to shock the market—for example, in January 2001 when we lowered the federal funds rate. It was the first time we dropped the federal funds rate after a long period of increases. And we did so in an unexpected manner. We got a very big response, as I recall. That was done intentionally. We did it because the recession was beginning to take hold, and we wanted to get ahead of the curve.

MR. HAMBLEY. You've now described this several times in the interviews—the notion that you didn't usually want to shock the market. Did you always do that as Chairman, or did it evolve?

MR. GREENSPAN. Was it true in the beginning?

MR. HAMBLEY. Yes.

MR. GREENSPAN. It was true in the beginning. But there were two issues that were involved. The first is, there was an odd convention, which I'm not sure really existed, but I thought there was when I first arrived. Members didn't discuss monetary policy issues until they got into the room. I soon found out that was infeasible unless we were going to have a two-day meeting. That is because, in order to get continuity in monetary policy, you have to have consensus, which evolves slowly. If you're not sure as Chairman where the votes are, you can get surprised. And it's not good for the Chairman to be surprised, because his basic job is not expressing his opinion as much as it is getting a sense of what the consensus of the group is as I read it. In other words, I could very much write what the view of the FOMC was when we went around the room. But I didn't know it when we walked in the door in the early stages. I found that we were running up against the end of the meeting. We didn't always have that 2:15 announcement in effect.

Early in my time at the Fed, many things we never announced. We announced the discount rates, period. There were no federal funds rates that we announced. I began to get very uncomfortable about the fact that I wasn't quite sure that we'd complete our conversations, that we had a sense of where everyone was and could make some thoughtful judgments about what we say in the statement.[12] Remember, we didn't have a statement in the beginning.

Basically, you don't want to be rushed in deliberations. It's always a mistake. So eventually, as the years went on, I made it a rule, the best I could, to know where the Committee was going to be when I walked in the door for that meeting. I had the previous meeting to start from, but I also listened to what they were saying in speeches.

[12] The FOMC began releasing postmeeting statements in February 1994.

And I'd get to speak to most of them on occasion. It was very rare that I got caught up in not knowing where the Committee was. The one case I remember vividly was when we moved for the first time in February 1994 after a very prolonged period of holding rates unchanged. Inflation pressures were beginning to build, and you had to get moving. I thought that my job was going to be to convince people, as I walked in the door, that we're going to have to go up today. When I started deliberations, all of a sudden there were lots of people talking about a ½ point increase. I'm saying to myself, "You can't do ½ point when you've done nothing and it comes out of the blue. The markets will go berserk." I don't know how I made that point, but I finally got enough votes so they agreed to go with me. Markets went almost berserk, in any event. I don't know how that happened, because we kept telling them, "We're going to raise rates." I used to say I'd get out on the street corner and go bong, bong, bong, "Hey, listen, we're about to raise rates." Still, the market reacted negatively.

MR. HAMBLEY. Until you were able to have a fairly good sense when you went into the meeting what the outcome would be and be pretty sure of it, you wouldn't be in a position to tell the markets, to produce the smooth evolution of policy that produces hardly any market reaction at all.

MR. GREENSPAN. That's true. We were fortunate, in many respects, in that we had a high degree of stability through most of my tenure. And it was relatively easy to do. I can see, in other regimes, it would have been very difficult.

MS. FOX. It is absolutely a truism held by everyone at the Fed that no one at the Board puts words or thoughts or ideas about monetary policy in Reserve Bank presidents' heads or other Board members' heads. Everyone has a responsibility to do the work, come to their own conclusions, and then communicate their own views. The marketplace will listen to the range of views and come to its own consensus. When you first came to the Board, were Reserve Bank presidents as involved in that dialogue with the marketplace as they are now?

MR. GREENSPAN. Yes. Volcker's problems were not the presidents; they were with fellow Board members. The president of the New York Bank was always a player. Frankly, I haven't thought about this, but my impression is that the quality of the other regional presidents has come up. They've come up largely because the quality of the Federal Reserve has come up, and it's attracting better people.

MR. HAMBLEY. Going back to the press—if the Fed had a message that it wanted to deliver and thought it was important to deliver and the message wasn't getting out, was there anything extraordinary that you would do beyond your usual relations with the press?

MR. GREENSPAN. You can't. You have to be very careful that you do not get accused of manipulation—in other words, of trying to force the news in a way that looks like the *Secrets of the Temple* type of issue.

I remember one time when John Berry [a reporter for the *Washington Post*] went off on a kick about what we were going to do, which was just all wrong, but everyone had the impression that John Berry was sitting in my lap all the time and taking my phone calls or listening to the phone or something, which, of course, he wasn't. He was a good friend, but I never treated him any differently in that respect. But the answer is, I was very frustrated at certain times, but I chose to do nothing.

MR. HAMBLEY. It's one thing to have technically accurate reporting about what you're doing, reporting that is competent, not riddled with errors. It's another thing to have sympathetic reporting that understands the motivation for what you're doing. Doesn't it really matter if the reporter says, “This is what they’re doing, and they have these good reasons for doing it,” rather than the reporter saying, “This is what they’re doing”?

MR. GREENSPAN. It depends on the degree of aloofness you want the central bank to have. Throughout history, central banks have always been special, somewhat elite, somewhat aloof and secretive. And that served them well. When I arrived, that was the view, I will tell you. We’re not going to tell. There was this whole group of people trying to ferret out the secrets of the Fed. I think it’s a very interesting question that I don’t know the answer to: whether that still serves the purpose of the Federal Reserve or whether, if you don’t keep the notion that there’s something special about you, you would just become the Department of Transportation or something like that.

I think the Supreme Court does this. It maintains a degree of decorum that engenders respect. It’s not the substance of what they do, it’s the way they do it. I’m not sure, frankly, whether or not that’s still the appropriate stance in today’s environment.

Transparency and the Federal Reserve

MR. HAMBLEY. In our last interview, you said that when you got to the Fed, consistent with what you were just saying, people had to look at the Fed’s balance sheet, because the Fed didn’t tell them when policy was changed, and there were Fed watchers. You said that, at a certain point, you made the change to targeting the federal funds rate and, by doing that, became clearer.

MR. GREENSPAN. By switching to the federal funds rate, we created more unemployment on Wall Street than you can imagine.

MR. HAMBLEY. How about other milestones that struck you as important about the Fed being more transparent? Why did those come about?

MR. GREENSPAN. From the technical point of view, moving towards explicit fed funds rate targets was critical. We didn't do that out of a desire to do it. It was the markets.

The ability to set net borrowed reserves or other money supply targets to obtain the type of restraint that we wished to do was failing. We were unable to reach the federal funds rates that we wanted. So we ultimately came to the conclusion that you set them like a number of the central banks do. That was a profoundly important change.

MR. HAMBLEY. So you decided to target the funds rate. It's intrinsically easier to observe.

MR. GREENSPAN. Oh, obviously. That takes all the ambiguity out of it.

MR. HAMBLEY. Was that coincident with starting to tell the world at 2:15, at the end of FOMC meetings, "This is what we did to the target," or did that take a little longer?

MR. GREENSPAN. No, it wasn't coincident, because we didn't make statements at the end of the meeting.

MR. HAMBLEY. When did the statement start?

MR. GREENSPAN. We didn't make statements originally. I think the statements were part of the five-year delay in releasing FOMC transcripts. In other words, we did a series of things, and the FOMC statements were one of them. We originally didn't make a statement every meeting.

MR. HAMBLEY. Initially, there were press releases only if you had a change.

MR. GREENSPAN. Only if we had a change or we had something significant to say. And soon we realized that was infeasible, and so we automatically did it after every FOMC meeting. The critical change was going from net borrowed reserves—or "M's"—as targets and allowing the market's Fed watchers to determine what it is we were doing, where our goals were, and to infer things that we never said, which is what they did.

That, coupled with the evolution of the federal funds futures market, created significant changes in the whole communication area. Do you want the press to be more socially aware of the problems that the Fed has, or do you want to discuss other things, the critical things that really matter? That's on the margin. It really doesn't make that much difference one way or the other. What mattered was that shift towards a published target, towards the development of the federal funds futures market, the availability of information on a 24-hour basis—all really altered during my tenure.

MS. FOX. As this evolution was occurring, what changed in what you watched from the marketplace?

MR. GREENSPAN. It largely was determined not by credit markets per se, but by economic activity. The central focus of policy was forecasting the outlook. And if you are very good, you succeed 70 percent of the time, which means you're wrong 30 percent of the time. And there is where the real issues of policy lie, that the future is fundamentally unforecastable.

The only reason we come out right is we do probabilistic forecasts, and the probabilities do work on average. But that doesn't mean that you're right all or most of the time. It means that there are very significant periods where you are wrong.

MS. FOX. When you looked at spreads in different markets, it was more a test of credit flows than it was signaling anything. Am I overstating it or oversimplifying?

MR. GREENSPAN. No, that's correct, except in the most recent period, where getting a LIBOR–OIS (overnight indexed swap) spread of 364 basis points when it used to be 10 does get your attention.

November 19, 2010 (Fifth Day of Interview)

Avoiding Partiality

MS. FOX. Chairman Greenspan, whenever you went to a public appearance to testify or give a speech, you would take a bottle of water, but the Board staff always had to peel the label off of the water. Why?

MR. GREENSPAN. Because the Federal Reserve was not bestowing free advertising to individuals who happened to incidentally be part of the scene.

MS. FOX. So the water company wouldn't be advertised.

MR. GREENSPAN. We chose not to do that, but I'm certain that, on innumerable occasions, we failed.

MR. HAMBLEY. During your chairmanship, the Fed became a much more prestigious institution, and a lot of people wanted to be associated with it. How did you come to the idea that the Fed needed to be aloof and not be partial in that way?

MR. GREENSPAN. It's a view that I've always held, obviously. My biggest failure, if I may say, in that regard, was a very large picture of me reading the *Financial Times.* Now, I must admit, it's not too bad for the Federal Reserve to be associated with the *Financial Times.* It has a far longer history than the central bank about all sorts of things, but I really was aware of the fact that with the huge number of cameras and people taking pictures—Ben Bernanke told me the other day, I think it's 100 photos a day. That didn't happen in the early years, because photographs were expensive. With the electronic systems they now have, you can do anything, on any subject, with unlimited capacity. And you have to be careful about the fact that Governors do have certain personal favorites, and that if we can possibly avoid it, they should not be in the public domain.

Leaks about Monetary Policy Actions and Their Impact

MR. HAMBLEY. We've already talked about the Fed's and the Chairman's relationships with the press. Let me ask you about leaks and their impact. Why is it important for the Fed to prevent leaks about monetary policy actions?

MR. GREENSPAN. This raises a more general issue of the question of Federal Reserve communication. If we were in a society in which all statements of Federal Reserve officials were taken literally and said what they meant to say, then there would be no reason whatsoever why we couldn't be, on virtually all of our actions, totally open and, indeed, subject to television interviewing or television coverage.

The trouble, unfortunately, that we all learned much to our chagrin, is that markets don't behave that way. They always endeavor to read into any statement of a Federal Reserve official some hidden meaning or something such as, if we are arguing that the balance of imminence is to move in direction A and not direction B, where, indeed, we may still be deliberating and may very well change our views, the markets will assume that A is a fait accompli. And it is a very difficult thing to deal with because, to the extent that the markets perceive Federal Reserve intentions other than what they actually are, it means you're introducing a degree of instability in pricing the various types of assets, which will get reversed.

This instability is built into the fact that, if markets get it wrong, they have to come back eventually to where we are, because we're going to be announcing things that are going to be misunderstood by the press, for example. It's very difficult to deal with that sort of issue. And, as a consequence, there is a tendency, very obviously, on the part of the Fed to be very careful in what it says for public statements, because we have to avoid, if we possibly can, inadvertent reactions on the part of the press or others, which serve no useful purpose for either the economy, the society, or Federal Reserve policy.

Leaks are of that nature. That is, they have the same general characteristic, and more often than not, they are distorted leaks, and it creates a problem for the Federal Reserve. I'm not saying a huge amount of resources should be employed to prevent them, nor am I saying that there should be penalties for those who leak. For classified documents there are, in a law, penalties, but most of the leaks are just types of leaks of who said what when and are not helpful. But you also do want the Governors to be free to express their views, and there's always a very important balance to try to make on that issue.

I think there was only one case that I recall, in an FOMC meeting, in which I basically requested, if at all possible, a unanimous vote for a specific policy, and I did so because I raised the issue of the market consequences if there appeared to be dissention within the Federal Reserve. That's one time in 18½ years.[13]

More generally, I've always thought, as I think I may have mentioned before, that if you don't get people freely debating with each other, you don't use the maximum amount of information that these people have. And if there's any endeavor to direct the conversation in one way or the other or to limit what can be discussed, I think you're losing a lot of information that is very valuable for the purposes of policy.

MS. FOX. Sometimes it's hard to classify what a leak is, because people are in power and invited to speak their own views and opinions publicly and to give interviews.

[13] Editor's note: At the February 1994 FOMC meeting, Chairman Greenspan said, "I would request that, if we can, we act unanimously. It is a very potent message out in the various communities with which we deal if we stand together. If we are going to get a split in the vote, I think it will create a problem for us, and I don't know how it will play out. I rarely ask this, as you know. This is one of the times when we really are together, and I'd hate to have our vote somehow imply something other than the agreement for a tightening move that, in fact, exists in this Committee."

MR. GREENSPAN. Well, a leak, by definition, should be restricted to those who have input into written policy statements out of the Federal Reserve System.

MS. FOX. If someone talks about a policy action that is going to be taken and has been decided, is that a leak?

MR. GREENSPAN. Yes. There are certain leaks that have different consequences. There are leaks about policy, and there are leaks about what individual members said. The leaks on policy are a major problem. The others are a question of propriety.

MS. FOX. There was a gentlemen's agreement on the Greenspan Fed that, if a Governor or Fed Bank president were to speak, you were free to express your own opinions but not to describe the opinions of others.

MR. GREENSPAN. That, strangely, is a fairly general approach in many organizations. The Council on Foreign Relations, as I recall, has done exactly that in the meetings. What you say, you can discuss with the press after, but what others say, you cannot. And I would say, in general, even though there's no official statement or even a gentlemen's agreement—I thought I'd put it that way—that's an appropriate way for the Federal Reserve and other organizations that assume the nature to act.

MS. FOX. It has not been part of the culture of the Fed to use leaks as trial balloons, which sometimes happens in the political sphere?

MR. GREENSPAN. The Fed is often accused of that. I don't recall a single instance, at least in my 18½ years, that I knew about. I assume I knew everything—I hope I knew everything that was going out through your office (the Public Affairs Office) or a Board member's office. But it's rare, very rare.

MS. FOX. What leaks do you remember?

MR. GREENSPAN. The truth of the matter is, if I focused on it for a while, I may probably come up with one, but I can't think of any specifically. That's an interesting indication that I don't consider that a big issue. For a big issue, I'd remember them. It's bothersome, and it's a little bit petty on occasion. I don't recall a leak which created a disaster for us, but I don't rule out that it could happen.

MR. HAMBLEY. I guess you could also have times where people who recognize that if a leak is later not confirmed, the market will change. They could perceive that as an opportunity to get a particular outcome. You leak something hoping to get one outcome because you think the decisionmakers won't want to have the adverse market reaction. Might people use a leak as a way to gain more influence in the organization than they would have just because they were a Governor?

MR. GREENSPAN. As a general comment, I don't recall any such instance.

MS. FOX. I think, generally, for policy, a leak about which direction policy is going inevitably was accidental.

MR. GREENSPAN. Yes, but no individual Governor could make that statement as to which way policy is going which is not also evident to the press at the same time. I could, conceivably, as Chairman, and may have, on occasion, had a better judgment as to where policy is going, because I spoke with everybody, whereas not all the members speak to everybody else. So I happened to be in a position where I'm more likely to have gotten a sense of where everybody is than anyone else in the organization. But it's a very minor difference. There was only one case in which I misjudged what the votes of the FOMC were going to be as we walked into a meeting. That was in 1994.

Banking Supervision and Regulation

MR. HAMBLEY. We've talked about the fact that, when you came to the Fed, you decided that you were going to concentrate on monetary policy. That was your area of comparative advantage, and other things that the Fed does would not be as much of a focus. One of the principal areas of the Fed's responsibilities is banking supervision and regulation. What was your involvement in that? What did you see as your proper role in such issues? What philosophy did you bring to these matters, and how did it change while you were Chairman?

MR. GREENSPAN. First of all, a very significant part of bank supervision is implementing the intent of the Congress in legislation that has already been written. I have no legal capability even remotely comparable to that of the people who are in the Legal Division within the Federal Reserve System.

My view is that, if the intent of the Congress is what we are seeking with respect to supervision and regulation, it isn't I who should be making that judgment, because it's a legal judgment for which I am very poorly equipped. So I chose, very explicitly, to go wholly by the recommendations of Board staff, knowing full well that the laws that we were implementing may very well have been written by the lawyers within the Federal Reserve, as many of the laws were, because we had the technical capability of understanding what the intent of all of the statutes were.

On the issue of broader question of regulatory philosophy, I brought to the Board a 10-year stay on the J.P. Morgan board. It was coincidental, but having seen how a major banking organization evaluates the creditworthiness of the people to whom they lend money and then overnight, having left the Morgan board, coming to the Fed, I became acutely aware of the very significant gap between what Morgan knew about Citi and Wells Fargo and other banking institutions in a very tailored way, compared with the types of information that came into the Federal Reserve System. That led me to conclude that looking at risks and looking at the various different types of problems, you rest a great deal of your efforts, appropriately so, on counterparty surveillance.

In short, [I concluded] that Morgan is far more apt to get Citi to do things because they are required to be done for the general safety and soundness of J.P. Morgan. They're trying to protect their shareholders, but, in so doing, it's precisely the type of thing that federal supervision and regulation should be doing. So I always was aware of the fact of how important the issue of that source of regulation is. But the problem that you have is that the degree of supervision and regulation will never get to the level of detail that you would need to create, absolutely, safety and soundness except by shutting the institution down.

We have got, in any major bank or smaller bank, internal auditing, which presumably audits the system, knows the risks. On top of that, you've got the outside auditor, who has considerable skills and access in a way that examiners probably have and not very much more. Superimposed on that, you have the regulatory examination procedures of the OCC, the Fed, and the FDIC. By the time that you get to the issue of the quality of analysis, it's always been obvious to me that you, out of necessity, rest upon all the information that others come up with and conclusions that others come up with.

It's never been obvious to me that we can spot problems any better than the earlier stages can. I was, for example, shaken by the fact that we had a very large embezzlement in New York—Daiwa, if you remember. It's a public issue. The Federal Reserve examiners, doubtless the best regulatory group in the business, missed it in two reviews. For that to happen tells you a great deal about the underlying nature of the examination process: It's selective. It has to be.

For example, let's assume that we are examining a Bank A, and the Bank A has got a loan to a Russian bank. How do we know how good that loan is? Only if we go to Russia and look at the books of the bank and then take a look at what the individual people who owe money to the Russian bank are doing. In other words, when do you stop?

Back in the 1890s, the Comptroller of the Currency went right to the bottom. They looked at each individual customer, made judgments about the customer, and that was sort of complete. But as the system became more and more complex, that was not feasible. And so there's always a very uncertain issue of, how deeply do you go into the regulatory process? It's never been obvious to me as a fact that we've gained all that much knowledge that we didn't know otherwise.

I've never been impressed by how successful examinations have been. In past crises, we have observed that very few supervisors and regulators anticipated the nature of the crisis. And, indeed, one of the difficulties is that you cannot require our supervisors, regulators, and examiners to be able to forecast. If you think about, for example, the credit rating agencies—Moody's and Standard & Poor's and Fitch's—they argue that they are not forecasting, and I say that is absurd. How can you possibly put a rating on a bond without some forecast as to how that particular bond will evolve and what will occur in the future? That's the same problem we have with examinations.

In other words, there is a general presumption that there's no forecasting in the issue of into what particular category of risk we're putting the various institutions we were examining. I think that we, therefore, can make a presumption where the facts have definitely demonstrated that we don't have that capacity. Nobody has the capacity to forecast what types of crises are going to arise, and it is precisely that that we really have to have a judgment on, because if a bank goes from triple-A to double-A, there is no supervisory interest in that. When it goes from, say, marginal to less than marginal, that becomes a critical regulatory and supervisory issue, and, I submit, our ability to forecast that is virtually nonexistent even though we act as though we do.

So I've always had a problem with it, and that is the reason why I essentially, as I indicated in the book I wrote in 2007, pretty much decided that I'd have to rely on the views of staff. As a consequence, when I was dealing with our late departed good friend, Bill Taylor (then the Fed's director of Banking Supervision and Regulation), it always struck me that he fully understood what the law was, what was required, and, given the restrictions, he created as much protection as I think any of the subsequent people who headed the division after him. So I was essentially far more passive in those areas, mainly because I recognized my shortcomings, and I didn't want to impose views. And I didn't.

I know there are a lot of people who may have inferred many things from what I was saying, but as I think, you know, that on every single recommendation that came up through Supervision and Regulation and/or Consumer Affairs, with one or two technical exceptions, I voted in favor of the staff recommendation.

MS. FOX. It's absolutely convincing—the idea that an examiner is never going to find all the problems. Law enforcement people will argue that what they are doing is "the cop on the beat" strategy, even if you can't find all of the problems, to find some, and to be present as a deterrent.

MR. GREENSPAN. I agree with that, but remember, that's, I hope, the view of the people who are experts in supervision and regulation who worked for the Federal Reserve, and those views would be implicit in the recommendations that were being made to the Board. If I thought it were otherwise, you would find a number of votes on my part that were not in support of the recommendation on individual issues.

I did, however, always discuss the questions and raised issues, but that was after the recommendation. I can't think of any instance in which I talked any staff out of any set of recommendations. It is conceivable I did, but it was certainly not a conscious endeavor on my part, largely because my knowledge in the area was far less than almost anybody in the divisions that were doing the examination. More importantly, as much as I tried to catch up, there is a limit to how many regulations you can remember and all the cases that are involved. And unless you know those things, you are not in a position to make judgments. I thought it was working exceptionally well.

Obviously, we had a number of problems, but it didn't strike me that regulatory failure was a very obvious issue. It's also sort of a basic issue. Remember, an awful lot of regulation has got nothing to do with the Fed; it's promulgated by a combination of the FDIC, the OCC, and the Fed. I don't know if that addresses the issue.

Financial Stability

MS. FOX. I want to go back in history and have you talk through your recollections about banking crises and about how your view of financial stability played out.

MR. GREENSPAN. Well, let's be very careful. Banking supervision and regulation is individual institutions. It's got nothing to do with systemic risk, even though it is true that the *Purposes and Functions* of the Federal Reserve does list—has always listed—the functions of the Federal Reserve as monetary policy, supervision and regulation, and systemic risk.

Systemic risk is a separate issue which presupposes an ability to anticipate a crisis. A crisis by definition is a discontinuous break in asset prices, and, by definition, that necessarily means it was unanticipated, because if it were anticipated, all of the evidence suggests that it gets arbitraged away. The vast number of crises has never emerged visibly to anybody, because before they even became exposed in the marketplace, they were arbitraged away. And, indeed, it's true at all times. We can judge the size of risk-taking by looking at yield spreads, and you can do it every five minutes and you get a reading. You will not, however, be able to use that as any indication of when a crisis will arise, because those types of spreads remain either too high or too low relative to normal for years. As a consequence of that, you could be very premature and wrong.

I'm famously quoted as saying in 1996 that the stock market was getting very speculative and was in the grips of "irrational exuberance." The stock market then proceeded to go up for four more years, and the Dow Jones Industrial Average went up 80 percent, as I recall, after that remark. Now, if you took that as a policy issue—one on which you would act—you would have knocked out a very significant part of fairly extensive gains and innovation and the like. And, remember, ultimately the dot-com boom deflated, but it left virtually no imprint on the economy.

So what would have been lost if we had clamped down? We, in the Federal Reserve, can always break the back of any bubble. It might require a 20 percent funds rate and, if not that, 50 percent. At some interest rate, the Federal Reserve, the central bank, can always break the back of an economy's expansion.

The question essentially is, is that what you want to do? Well, if you want to get extreme on this issue, you could avoid bubbles at all times by implementing highly inflationary monetary policy. No bubbles arise from income-producing assets, I should say, when you have chronic inflation, so terrible monetary policy is the best preventative for bubbles. Now, that may seem a little stupid. It isn't. And that's one of the really serious dilemmas that we have, because I argue that a period of prolonged, fairly good monetary policy over the decades will engender a degree of risk-taking, which ultimately creates a problem.

As I recall, John Maynard Keynes thought very highly of Benjamin Strong (first president of the Federal Reserve Bank of New York, 1914–28) and the policies that the Federal Reserve pursued during the 1920s. The problem is, it was that very success that helped generate the problem, and I don't know any way around that, which leads me to conclude that the most important thing is to have adequate capital in your system so that, when bubbles burst, all of the losses go to shareholders and not to senior debt holders.

You cannot have a contagion crisis unless there is default. If you have adequate capital, you can have a collapse in asset values without default, and that, to me, is the critical type of thing on systemic risk that you can do. But anticipating a crisis, I'd say, by its very nature, is not possible.

MS. FOX. Essentially, what I think you said is that volatility inhibits risk-taking.

MR. GREENSPAN. Yes.

MS. FOX. And monetary policy presents a conundrum. A good, predictable monetary policy that creates consistency and stability has a paradoxical effect of encouraging risk-taking.

MR. GREENSPAN. Well, the issue is not so much predictability but appropriate policy. In other words, the critical issue has got to be that it is policy that best forces stable, low price inflation. It's the low price inflation that is consistent with a lower amount of instability, because what the data show is that, as you get increasing inflation, the volatility of inflation goes up, so that if inflation is low and relatively stable, you will gradually close risk spreads and eventually, perhaps, close them to points in which you are vulnerable to a bubble breaking.

MS. FOX. So what is a central banker to do?

MR. GREENSPAN. Well, this is a very interesting question, because that question itself presupposes that there is an answer to every problem, and the fact of the matter is, there is not. Now, this is one of these major dilemmas that central banking confronts. No one has come up with an answer to it. And the reason that we haven't is that, internally, to its structure, it is—you're led to the question, did you have to make the choice to stunt the growth of the economy, create a degree of uncertainty which diffuses any bubble, and you never have a bubble bursting? Or should you do the type of low inflation policies with very little instability and increase the confidence people have about what the future is going to be like, not because there's any increased stability in the future, but people are less concerned about things going wrong? You don't have any possibility, in reality, of having both simultaneously.

The presumption is—and it's true in fiscal policy, it's true in government policy generally—if there is a problem, fix it, which is very nice. The only problem is that there are issues which have no solutions, and the reason is, in reality, they have nothing to do with the discretionary actions on the part of monetary officials.

MS. FOX. It's the psychology. Maybe it's human nature?

MR. GREENSPAN. Primarily, it's human nature. Can I just go back to something? Because it is human nature, and the problems are the product of certain stabilities in the way you behave, even irrationally, there are certain irrational behaviors which are stable or consistent and forecastable, and they repeat time and time again.

There is no way to confront a human being with an increasingly protracted period of stability in core assets and not have that person begin to start dipping their toes in the water, become more aggressive, become more willing to take risks in the world, because there is no way we can live without taking risks. Zero risk-taking means you starve. So there's no way of preventing people, when they feel increasingly stable, from taking more and more risks. That will happen 100 percent of the time.

MS. FOX. One approach that you took to the problem of low and moderate stable inflation generating increased appetite for risk: You warned people about that condition.

MR. GREENSPAN. I did, and I found out very quickly that it has no effect, because it's an internal process of people, which is very rarely deflected by other people warning them. You can look at every crisis, and you will find the number of people warning everybody is enormous. There's a little bit of a statistical bias in there. Your question is, people were warning that this was going to happen and that was going to happen. That is true, but what they forget is the huge number of people who were warning that the sky is about to fall and it never did, and you never hear of it again.

So the problem that a policymaker has is that, if he sits there and just listens to outside advice, what he's going to get is a huge number of people who are saying the markets are overvalued and a huge number of people who say the markets are undervalued. Now, it's going to turn out that these people over here are all wrong. You never hear of that and you never hear of them again, but the five people over here that, by chance, got it right, it is assumed that there's some omniscience there.

The difficulty that I have with this is the following example, which is a little bit not really appropriate but gives you the flavor of what the real problem is: If you have 1,000 people, 500 against. [So,] 500 tossing coins. Then 500, then 250, then 125, and getting all the way down to the bottom, and you get 2 people who are left. Try to tell them that they don't know how to toss coins. It's a wholly random event, and you will find that there will always be a significant number of people who "anticipated" the crisis. Why didn't the central bank or the Treasury

Department or somebody deal with it? People forget, but it's getting more and more difficult to forget, because now we've got internet access to all previous events and you can find something in there that looks remarkable, the results of what people actually said. And it's very tough on the political system, because if you can find too many things—

There is a deep-seated human characteristic which, time and time again, will not respond to warnings. I thought my warning about irrational exuberance would have some effect, and it did—for 24 hours. In fact, it was the result of an evening meeting. I knocked the Tokyo market down very significantly, and by morning, it all recovered. And there is a reason for that. Part of the development of euphoria is an utter blacking out of contrary opinion, and I don't know of any way that one can succeed by basically getting up and saying "The sky is falling."

MS. FOX. Okay, so the warnings don't work, and no one is going to make monetary policy more unpredictable—just to keep people in check, I assume?

MR. GREENSPAN. They don't do it purposefully, no.

MS. FOX. So, again, using some of your words, how does one fetter greed as a policymaker?

MR. GREENSPAN. The point here is to recognize what you're trying to do. The only way to get greed down is probably through church on Sunday, not through monetary policy. But what you do instead is to recognize that greed has characteristics which will induce abnormal movements in markets.

What you can do is what I mentioned before: Make certain that you have adequate capital in the institutions that are involved so that those people who are most likely to get major profits because they are shareholders and not bondholders—I mean, those who are the most greedy—have both the greatest capacity to gain something. But there is a cost, and the cost is that their equity is wiped out before anybody else's liabilities.

MS. FOX. And there are costs along the way, because capital has a cost.

MR. GREENSPAN. Well, what I'm saying is, essentially, what our job should be is to make certain that the people who are taking the greatest risks are also exposed to the greatest losses. Ideally, if you have adequate capital—which means enough capital so that, given all of the losses, you never work your way through the equity part of the capital structure—and then have trouble servicing your debt and you go into default, that's where you try to draw the line.

You should not be trying to protect common stockholders from losses, because we want to translate the notion of greed into balance sheets. Greed is significant only to the extent that you're a common shareholder. You cannot exhibit or capitalize on your greed unless you are an equity holder. But the way you handle that is to make certain that it's a two-sided game—that if you wish to be greedy, you may succeed in obtaining increased wealth, but you are also going to be first in line to take losses. That's the cost of greed. I do not see anything else supervision and regulation can do that will actually work.

MR. HAMBLEY. The first time I remember you talking about capital the way you just did was in connection with the government-sponsored enterprises (GSEs). They had a game that was highly favorable to the shareholders, to the management. It was a one-sided game, as we've now seen. What was the intellectual process by which you came to this conclusion—that (a) you couldn't foresee the crisis, and (b) what you needed to do was to prevent the crisis from reaching a point that it was so bad it was going to cause a default? How did you come to that? Did some particular person impress those things on you?

MR. GREENSPAN. No. Moi.

MR. HAMBLEY. “Moi.” You discovered them.

MR. GREENSPAN. Well, no. It’s interesting. I was a very successful forecaster in the private sector. I made a lot of money, and my particular skills were very much in demand, and yet I knew that I cannot see beyond the edge of my nose as to what is going to happen. And I said, “If I can’t, no one can.” And because I’m aware of human psychology, epistemology, and our whole means by which we gain knowledge, and I spent a very considerable time in trying to understand how I know what I know.

It’s very obvious to me that the best we can do is to examine the current situation, see if we can find instabilities that are likely to work their way out in one direction or another. But you can never know that for sure. So all of my forecasts were what I would call “probabilistic.” I would never be able to say that statistic X is going to go up there or something like that. I would always be formulating in terms of where the weight of probabilities was. And that’s the reason why I would never submit a point forecast on the economy to the FOMC under the Humphrey-Hawkins requirements, because I said, “That is just not possible, and I will not engage in that activity.” And for 18½ years I never submitted a point forecast. I used to argue if we’re even going to take the staff forecast, and I would vote for the staff forecast, but they didn’t want to do that.

MS. FOX. And this is just to clarify—this is when the FOMC is developing the central tendency, when everybody submits their forecast, and it’s how much inflation, how much employment—and you never did that?

MR. GREENSPAN. I don’t know how to do that, and I know that they don’t either. You’re asking, how do I know? Well, I’ve been in the business since 1948.

MS. FOX. Well, it does take on an aspect of probabilities—if you have a number of people doing it and coming up with a consensus, that makes it a little bit softer than a point.

MR. GREENSPAN. Well, if you want to be honest, you have to argue as a statistician, and it's a random sample. The truth of the matter is that the particular choice—which goes back to Arthur Burns's Administration—on how these Humphrey-Hawkins requirements were going to be met was clearly not the optimum way to do it. If you really wanted to get what the System believed best, I would think you would want the Federal Reserve Board to start forecasting, because that's the most intellectually consistent, structured, thoughtful forecast.

The Board staff did a better job, in my judgment, than any of the individual Reserve Banks. So adding up the other individual Banks isn't necessarily going to give you a better forecast than staff's, but Arthur Burns chose not to do that, and I think the reason he chose not to do that is that he did not like the whole operation. I know he didn't, because he told me—and that he was trying to meet it without compromising the Fed's position.

Remember, none of those forecasts were associated with a particular policy. Isn't it odd for a central bank whose job it is to set an interest rate which is relevant to the forecast? Each one of those forecasts is an assumption about what they think monetary policy will do rather than somebody saying, "Give us your forecast based on unchanged policy." That is not what their planning was. And so it never served a particularly useful purpose.

But to really answer Lynn's question, I learned very early on that we have no choice but to forecast. That's what we do in our lives—we're always looking forward. But it's quite another to think that we do it well or effectively, but we have no choice but to try to do it. And that is true in monetary policy. We do make forecasts, and we act on them, but they are probabilistic forecasts, because that's all we can do. And I don't think we can ever improve that unless we can somehow alter human nature.

MR. HAMBLEY. Let's go back to the issue of capital. I would frame it as, since you can't forecast, you want to make the system as tough as it can be through reasonable capital standards. And, presumably, those standards are going to have to be imposed externally, because the interest of the parties involved are to have uneven games, and your interest as a regulator is to make the games more two sided.

MR. GREENSPAN. There's a more important force in there. Remember, the reason that a bank has capital is to be able to sell its liabilities. The purchasers of those liabilities, whether they're depositors or the purchasers of the debentures, look at the capital buffer because, remember, it is the capital that protects the bondholder's principal. And so it's not simply the issue of regulators versus individual institutions, because the primary determinant is what the people who invest in the banks are willing to take, so that it is inevitable.

Even though supervisors don't emphasize this point, we invariably were drawing levels of capital from what the markets required. For example, I have a chart in a paper I did a while back in which I note that the capital in banks in the 1830s and '40s was over 50 percent. And the reason is, that is what they needed to induce people to hold their liabilities. As the system got more sophisticated and reserves were consolidated and the ability to transfer funds rapidly became ever more facilitated, capital requirements fell. But they fell basically because, at those lower levels of capital, the people who held the liabilities of banks nonetheless felt that they were adequate, given the capacity of the bank to always reach out to another bank to borrow money or to do numbers of things that enabled them to meet their obligations.

In the agricultural economies of the 1830s, you couldn't do that. Then, an individual bank had its gold reserves, and it had better have a lot of them, because if they ran down, there was nobody from whom it could borrow. But by the 1890s, there were people, and therefore you didn't need gold reserves as much. The holders of the liabilities didn't require as much capital because they were interested in maintaining the safety of their principal. The safety of their principal in the 1830s required 50 percent capital. In 1900, safety required, say, 20 percent, and after World War II, much less.

MR. HAMBLEY. That was partly because of the development of the so-called safety net.

MR. GREENSPAN. That is only for deposits.

MR. HAMBLEY. Well—and also, increasingly, the perception that if you're a large institution, there is a kind of protection that isn't related to your own capital.

MR. GREENSPAN. Yes. Being bailed out by the government?

MR. HAMBLEY. Yes.

MR. GREENSPAN. That was a very recent phenomenon. I mean, that branch of Continental Illinois, that's 1984.

MR. HAMBLEY. Since the 1980s. I think one of your testimonies showed what people could get away with without holding capital and still issue and sell liabilities.

MR. GREENSPAN. Let's go to 1950 to 1980. Capital was quite low at that point, and I don't recall—and I'm sure you'd want me to say this—that there was any "too big to fail." I mean, there wasn't, to my recollection, before Continental Illinois. I just don't recall an institution being bailed out.

MS. FOX. I don't know about what happened in the '50s, '60s, '70s, but to the extent that there was a resolution mechanism and banks that went wrong were purchased by other banks and resold, they were bailed out.

MR. GREENSPAN. Well, that's a possibility. In other words, you have to ask yourself, [if] I'm the holder of the debentures of a bank, how much capital do I think they would need? If I thought they were going to be bailed out, I'd say, "We don't need any capital at all. We're going to be bailed out, so be it." And if you had deposits that are insured by the federal government, the particular institution that holds them is utterly irrelevant. The capital you're looking for is federal capital. It's infinite. What I'm trying to say is that, going back to your original issue about that there is a fight that goes on between the banker and the regulator, that clearly is the case.

We had these hearings on Basel. The things that were going on were just outrageous. But, ultimately, if the regulators say you can hold 7 percent capital but the market says you need 10, the regulator's capital requirement is irrelevant. The regulator's regulatory capital is irrelevant. It's the higher that matters, and it's only when regulators are above where the economic requirements are that their requirements really become effective. And that is basically saying to the issuer of the liabilities that we, the regulators, want your capital higher than even you want it. And I think, in most instances, that's what the case is.

MR. HAMBLEY. What you just described sounds very much like the philosophy of Basel II, which was an endeavor that began under your chairmanship, and it was far advanced by the time you left. I thought that the basic notion of capital in Basel II was to have the regulatory capital aligned with the economic capital.

MR. GREENSPAN. Well, but you have to say at least it's aligned, because if it's below, it's inoperative to begin with.

MR. HAMBLEY. Right.

MR. GREENSPAN. So the other one's got to be at least as high as economic capital.

MR. HAMBLEY. But the idea was that the banks themselves had a better idea of what the economic capital requirement would be, and they would be a source that you would go to, to help you calibrate the capital requirements.

MR. GREENSPAN. No, you tell it by market price. In today's market, you have credit default swaps. You can tell. In fact, I did this Brookings paper back in June in which I tried to judge after the market crash, what was the market telling us about how much capital was below requirements? Or, put another way, what are the current capital requirements, from the economic point of view, relative to where they were before the crisis? And I did it by evaluating the credit default swaps movements.

For example, on the day the TARP was announced, the price of insurance, as measured by the credit default swaps, fell by half, and that is the same thing as saying that the riskiness that was associated with what was, in effect, a 2 percentage point change in the capital available fell. TARP added 2 percentage points to the capital asset ratio, and the implicit price was that risk fell by half. And so I could extrapolate from that to determine what the markets were saying that capital requirements would be in the current period relative to where they were in 2006.

There are now very similar ways to judge when capital is required in an institution or not, and I assume that everybody is watching what is happening now in the credit default swaps and a whole series of other things, which tries to get a market bearing on how risky a particular financial institution is. And I'm almost certain that the reason why Basel III is so much higher than Basel II is not that there is a huge amount of difference of knowledge from one to the other. Nobody learned anything except that the markets were saying, in retrospect, banks learned to capitalize in 2006, this is the proper level, and unless regulatory capital is at least as high as economic capital, it is utterly nonfunctioning.

And so what we're getting now in Basel III is merely reflecting the fact I was arguing in this paper, that capital was short 4 percentage points as far as the market is concerned. If you look at Basel III, it looks like 4 percentage points. In other words, they're coming at it from a different point of view and coming up pretty much with the same answer.

Basel

MS. FOX. I'd like to hear about your Basel experiences.

MR. GREENSPAN. In Basel II?

MS. FOX. Going back, yes, in Basel II, and even what you first recalled, thought, believed. Initially, it was Chairman Volcker's efforts to strike a deal internationally where bank capital would be raised. Basel I was 1987, right before you came.

MR. GREENSPAN. It was before I came, yes.

MS. FOX. Right before you came. Volcker sent Bill Taylor—the director of the Board's Division of Banking Supervision and Regulation—off, and he negotiated with the Bank of England, and they came up with a bilateral agreement—

MR. GREENSPAN. That was basically because of regulatory arbitrage, because they wanted to get everybody on the same level playing field. It wasn't a level-of-capital issue.

MS. FOX. It was a competitive issue. It was to make sure that these banks didn't venue shop for the lowest capital levels.

MR. GREENSPAN. That's right. Capital is determined first by the marketplace. And then the only issue is, therefore, how much did regulatory capital go above that? To the extent that it was the same, it is a wash. To the extent that it is below, it's irrelevant. And so, if, for example, the United States had regulatory—a couple of requirements—so, let's say, for example, 6 percent, and the United Kingdom had 4 percent, and the market was saying it's 8 percent. Then the regulators would be utterly irrelevant.

And so it's not a question strictly of the regulatory parties. They both have to have the starting position above where the market is. If they don't, then they're having a meaningless discussion. I'm saying the two parties wanted more capital than the markets required, and that does become an issue of regulatory arbitrage, and that's what I presume was the deal struck by Bill Taylor in Basel I. It was a leverage ratio. I didn't follow it, obviously, that closely, because I wasn't around.

MS. FOX. And it was a very simple kind of agreement and soon became somewhat irrelevant, because people were able to game the system.

MR. GREENSPAN. They gamed it largely because of the fact that all assets are not the same, and so that led to the adjusted capital requirements of Basel II.

MS. FOX. Different weights for different assets.

MR. GREENSPAN. Yes. I was aware of exactly what was happening, but I remember it was Roger Ferguson who was doing most of the footwork on Basel II.

MS. FOX. It seems to me there was a whole series of people who did footwork on Basel II.

MR. GREENSPAN. Basically, the only one whom I listened to and trusted was Roger Ferguson. If you remember what was going on, we had the criteria set up about optimum risk-based capital. We were coming in with regulatory capital that was way below where Roger and others thought we have to be. I'm talking about people within the Fed. It was a big fight. We didn't prevail as much as I think we'd have liked to, but in the end we were all wrong, but in the wrong way. The ink wasn't even dry on Basel II before it was proved to be inadequate. We never signed it.

MR. HAMBLEY. It was signed, but it hasn't been implemented.

MR. GREENSPAN. What did we sign, the general agreement?

MR. HAMBLEY. We have the agreement in Basel, and then you have to implement it domestically. The United States approved the regulations that were necessary, but there was a delay in the effective date. I think it's still the case that there are no U.S. institutions on Basel II. So all of what's happened during the financial crisis was under Basel I, as far as the United States was concerned. Some European institutions had gone on Basel II when the crisis hit.

MR. GREENSPAN. It didn't matter. It was too low.

MS. FOX. A minute ago you mentioned, as an aside, other crazy things around Basel II. I'm thinking of the banks complaining.

MR. GREENSPAN. Yes. Here's what the problem was: As part of Basel II, there were certain groups of banks that could implement their capital requirements on the basis of sophisticated capital asset models. What I don't think anybody really anticipated is how easily those things could be played. This is hearsay, because I wasn't there, but my understanding about what was happening was this: These banks would come in basically indicating that they could exist on very much less capital than was being required. And, indeed, and I always remember this, Walter Wriston, many, many years ago, was then chairman of Citi, and he said that an international bank doesn't really need any capital.

MS. FOX. Because he thought that borrowing countries can't fail?

MR. GREENSPAN. Well, no. It wasn't the country, it was the bank. He was saying that Citi could function with literally no capital. What he meant by that is that they're doing so much overnight funding in all sorts of wholly liquid markets that they could meet any set of obligations that came to them within 24 hours, and that was assuming that the markets were going to remain as liquid as they were. And in this case, if you have complete capacity to sell any of your assets at any time and you structured your maturities such that your losses are never very large, you can have a very low amount of capital and still function quite well. But the key presumption is that liquidity is always there, and that's a fallacious assumption.

Liquidity is, again, a function of human nature. That is, if you get euphoric, you will bid up everything under the sun. If you're fearful, you will sell everything under the sun. At the time of any crisis, liquidity evaporates overnight, because people just turn like that. And so the bid-ask spreads, which were tight as a drum with huge volume on the bid side—overnight, liquidity just disappeared, 100 percent.

MS. FOX. No bid.

MR. GREENSPAN. That's what happened. That's why banks fail.

MS. FOX. So, irrespective of the big crises, when all that you assumed disappears overnight and the markets change, what would be the lesson learned for your average Federal Reserve Chairman or a poor Governor assigned the responsibility of tackling this capital issue? What would you say is the lesson learned?

MR. GREENSPAN. I'm not allowed to use the current period—because I learned a lot from the current period.

MS. FOX. A lesson learned over the span of time is perfectly fine for you to articulate.

MR. GREENSPAN. In general, you start with a bid-ask, a given—namely, that if you have "adequate" capital, any capital, you will not have a default of a senior debt or any debt.

Default presupposes that you cannot pay interest on your liabilities. If you can avoid that, then all of the losses, by definition, accrue to the shareholders. And since there is no default with that, if your shareholders lose 90 percent of their money, the bank is not in default. Consequently, you start off with the proposition that, if you cannot forecast, you can nonetheless provide enough capital such that the chances of your actually being unable to meet the service costs of your liabilities is de minimis to nonexistent. Here you'll find that, in a partnership, capital is very large, because the potential of losing everything is such that you're very cautious. And it's very rare that partnerships go bankrupt.

And so, essentially, it's an issue of recognizing that if you cannot forecast when a crisis occurs, try to at least make a judgment as to what the extremes will be. We didn't know what the extremes would be in 2006. We thought we did. We all recognized that there was a sort of a fat tail on the probability distribution, which had the distribution of risks. We had never observed it, because we had never observed anything of the order of magnitude of what happened after the Lehman bankruptcy. We now know. We actually traced out what happens in that particular period, and we found that instead of the negative risk tail, which means the fat stretches out a long way—it wasn't fat; it was obese. It was a huge loss function, which nobody in the risk-management business had projected. I know of none. The way you calculate your required capital—taking as a given the risk adjustment of assets—is algebraically determined by the shape of the probability distribution, as far as you stipulate what type of losses you wish to protect against, and you set your capital at that level. It's a simple mathematical calculation.

MS. FOX. Now that we have had that experience.

MR. GREENSPAN. Yes. But you need to have the full distribution, and until 2008, we didn't. But we still conjectured what it was, and it was from that conjecture, coupled with the known experiences, that capital requirements were estimated. And it turns out that the reason they were underestimated is an assumption, which I made myself, about the shape of the tail. We all acknowledged that at least the thing was a normal distribution, which goes up like this and then out up like that smoothly—it's a bell curve. We began to get evidence in various different markets early on that it clearly did not have the characteristics of normal distribution at the tail end. But we had some of the measure of that, and so we then basically said, "Well, it's going to be fat," meaning the bell curve is slim down here. But what actually we were assuming is that it comes down and then it picks up, sort of being fat tailed, but it turned out that it was like that [even fatter], and we had no way of knowing that in advance.

But if you do the algebra—though it's really calculus—working through the distribution, you get a specific number that is the capital requirement of the firm. That was missed badly. And I would say that future supervision, with knowledge of what types of things can happen, has a better capability of knowing what needs to be done, because the only thing that supervision and regulation can do and should do is to protect the bondholder, because there should be no consideration for the greedy shareholders, if you want to put it in your terms. That's what protects the system of the whole.

Falling stock prices do have an effect on wealth and spending. But, as the dot-com boom demonstrated and others previously—such as 1987—demonstrated, there was no evidence that a huge drop in stock prices, more than 20 percent in one day, had any effect on economic activity, much to my surprise. But that's the point that's critical, that supervision and regulation shouldn't be concerned about how much the shareholders lose. It should be very concerned about the issue if the buffer of shareholder values collapses to the point that the value of the debt becomes a problem, and that you don't need a forecast for. It's basically a simple question of, what type of risks are you trying to prevent against?

I wrote a speech I gave in 2000—I've forgotten where it was, but what I was arguing is that the central banks, as supervisors, by our very nature, construct regulatory requirements that do not cover 100 percent of all possibilities.[14] That's exactly what we did, and we knew it consciously. And I was saying so in the year 2000, and nobody disagreed with it at the time. But I also pointed out in that speech that that meant there was some time frame for which we were not covered, and that then central banks would have to substitute their credit for private credit. It wasn't very large, because back then it was very small, but it was non-zero.

MS. FOX. The probability that that would happen was small.

MR. GREENSPAN. Was very small. I was actually saying it's a once-in-a-100-year flood. I remember—I had forgotten about it. Do you know Wrightson?

MS. FOX. Wrightson, the consulting people?

MR. GREENSPAN. Yes. A while back, they came up with my speech—this is probably in 2006 or something like that. I had forgotten about that speech. I didn't forget about the concept, but—I was making this long speech, and Wrightson comes up with this, their favorite Greenspan speech. I was reading it, and I said—this is actually before the crisis—"I wouldn't change a word." And this is six years later. So it's not as though we were unaware of the issue, but protecting against a 100-year flood, who cares about that? And what we ran into is a 100-year flood.

[14] Editor's note: Alan Greenspan (2000), "Technology and Finance Services," speech delivered at the *Journal of Financial Services Research* and the American Enterprise Institute Conference, in honor of Anna Schwartz, Washington, April 14.

MS. FOX. When the regulators want to raise capital, the bankers believe that's crazy and come in and complain in all sorts of ways, with great arguments, great models, political pressure. It's definitely a dialogue.

MR. GREENSPAN. Dialogue implies some sort of equality in the discussion.

MS. FOX. What's your advice for central bankers in dealing with that process when working through issues like capital?

MR. GREENSPAN. I would basically say that the bankers will come in and demonstrate that their model suggests that their capital should be X. Regulators don't dispute that. They take that as that's what the market would want, but we want an additional premium, because implicit in that calculation by the individual bank is that small part of the risks they may take that will be covered by others.

MS. FOX. They're getting a little insurance, and they need to pay for it.

MR. GREENSPAN. Okay, you can call it that way. The way I put it in this Brookings paper is that, for 50 years, the American taxpayer was subsidizing the American banking system—of course, with some encouragement. The bill didn't come due until 2008, so we didn't know how much they were being subsidized—until 2008, when we found out.

I think that the argument has got to be that you don't have an argument with the risk managers who are making assumptions about what Citi or Wells or somebody needed with respect to potential capital requirements. It is perfectly possible that they are right. But, as I said before, regulatory capital, to have any meaning whatsoever, has got to be above market capital, and then that's a judgment that the bank is not a participant in.

MR. HAMBLEY. In effect, the bank's decisions have a potential externality?

MR. GREENSPAN. No, I thought the way that Lynn put it was correct.

MS. FOX. It makes a lot of sense that the risk managers know what kind of capital they need, given the way the world works. And the way the world works, there is public support.

MR. GREENSPAN. A fraction of 1 percent—½ of 1 percent—of the time, you will get supported, but that means that they are acting rationally. But taxpayers are not acting rationally by taking a decision. They weren't planning to put the money in. If that's what they're planning to do, okay, then that's fine, but they're not.

MS. FOX. So, in some sense, the regulator should not even have the argument about the models or the weighting. I may be stretching it, but [the regulator] should say, "You come and tell me how much capital you require, the market requires, and then I'm going to tell you, based on my perception of the world, how much of a premium I'm going to require"—

MR. GREENSPAN. Precisely.

MS. FOX. —"and it's my calculation, it has nothing to do with what you see."

MR. GREENSPAN. Right. Because it's my calculation, which essentially is based upon what price we want to charge you for the insurance you're employing.

MS. FOX. That is an excellent lesson learned.

MR. GREENSPAN. I didn't know that going in.

MS. FOX. No, none of us did. That was not the way anybody thought.

MR. GREENSPAN. But there's no alternative to that, and I don't think we're doing that now.

Regulation

MR. HAMBLEY. I would like to go back to regulatory philosophy. I believe it was also an aspect of your philosophy of regulation that the mere presence of a regulator may, in a sense, provide a false sense of comfort to participants in the market who are dealing with an institution.

And, in that sense, regulation may actually be dangerous. Given the limitations of what regulators can actually do, when people see that there's a regulator, or a "cop on the beat," they may be less inclined to be looking out for themselves.

MR. GREENSPAN. I think that's called "moral hazard," and there's no doubt that is the case. I never made very much of that, and the reason is, it is very difficult to get hard evidence. I'm pretty sure it's correct, and most everybody believes it was correct, but it is very tough to get hard data.

I don't think you can run policy on the basis of anecdotal evidence or suspicions. If you're in the public policy area, you've got to be very careful to have objective data rather than your own suspicions. My suspicions can be very different from anybody else's, but they would be irrelevant, because the question is, we all should be dealing with the same facts, hopefully.

MR. HAMBLEY. That would be nice.

MR. GREENSPAN. That would be nice. But, in all fairness, we tend to do that. Most of the interest rate discussions are remarkably free of political discussion, and there is no question that there are many druthers. Some of the members would like to see interest rates lower, because they think that will be of greater assistance to the lower-income groups; others don't. That doesn't hold very much water, because we're both using the same facts about a specific situation. Those types of druthers, unless they're based on fact, don't carry very much weight in the Committee, as far as I remember, and shouldn't.

Deregulation and Mergers and Acquisitions

MR. HAMBLEY. During your chairmanship—particularly in the late 1990s, early 2000s—there was a trend of deregulation. One change was in the mid-1990s, when the Congress allowed much more full interstate banking and branching.[15] And another one was in late 1999, when the Congress passed the Gramm-Leach-Bliley Act. How did you feel about changing laws that restricted interstate branching or restricted affiliations?

MR. GREENSPAN. Interstate branching, I was very much for it—Texas being an excellent example.

MR. HAMBLEY. Did you favor expanded interstate branching because you saw that banks were vulnerable to the degree that they were forced to operate within a limited geographical area?

MR. GREENSPAN. Yes. For no reason other than political.

MR. HAMBLEY. Yes.

MR. GREENSPAN. That's the same issue we're having now with health insurance.

MR. HAMBLEY. One of the consequences of liberalizing the interstate banking and branching laws was that there was a wave of mergers and consolidations. There were later mergers, and the Fed approved a lot of those mergers under existing law.

MR. GREENSPAN. We had to approve them.

MR. HAMBLEY. As that was happening, did you feel any discomfort?

MR. GREENSPAN. Yes. Remember Allen Berger's analysis about the benefits of size in banking?

MR. HAMBLEY. Yes. He said there weren't any.

MR. GREENSPAN. There weren't any.

MR. HAMBLEY. Right.

[15] Editor's note: The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 removed many of the restrictions on opening bank branches across state lines. In addition, the act allowed banking organizations to acquire banks in any other state under a uniform, nationwide standard.

MR. GREENSPAN. There were benefits—economies of scale—in banks up to $100 million or something in assets. First of all, I was surprised by that, originally—Allen and his colleagues, this is in the 1990s.

MS. FOX. Who was Allen Berger?

MR. HAMBLEY. He was an economist at the Board who did antitrust analysis.

MR. GREENSPAN. He did some very clever stuff about efficiencies of size and the like. And I must say, it went against my suspicions as to what size did or didn't do. But when you looked at his data, you couldn't get around the fact that, yes, it doesn't show economies of scale in production in banks above a certain asset size.

I always, from that point forward, was very uncomfortable with the issue of our moving forward and approving a lot of these banking mergers and acquisitions. But, as far as I'm concerned, we had no legal basis to object.

MS. FOX. I remember there were talks, studies, whatever—about, what is the economic rationale for these giant mergers? And using, I don't know, data like that or whatever, you couldn't find a lot. People said it had more to do with territory and CEO ambition.

MR. GREENSPAN. I think it's very largely individual CEOs who wanted to be in a larger firm. But, remember, there were statutory requirements as to how the Fed could go about making a judgment on mergers and acquisitions. There wasn't just an arbitrary judgment, it was based on, we had to have formal reasons as to why we would reject.

MS. FOX. There were market competition tests and so on, and it was clear—I think you believed this—it was clear, in the era of limited banking and limited mergers, that there needed to be consolidation. Am I right? They supported disbanding the barriers to strengthen the institutions and give them more market access.

MR. GREENSPAN. I don't remember very specifically. But I was always aware of the fact, and made speeches citing Allen Berger's work, that we had difficulty finding stuff. I remember having discussions like this. I said, "What is it that the large banks receive that suggests to them that these mergers actually create increased capital wealth?" What, in effect, we were doing was saying that there may be synergies that we have not yet measured.

There was one specific composition I do remember. This is the Fed staff saying, "We're not sure that there aren't significant advantages"—I think on the international markets, but it wasn't an issue that they thought that there were. They were less certain of Allen Berger's conclusions, and I think that was true pretty much right up to the end. I don't think we had the legal authority, at any rate, to restrict mergers strictly on a basis of size.

MR. HAMBLEY. But you had to consider the convenience and the needs of the communities and competition and the Community Reinvestment Act, CRA. But the standard was basically tilted toward allowing mergers and consolidations.

MR. GREENSPAN. My recollection is that we were working under existing banking statutes that prevailed at the time. And unless I am mistaken, all of these were permissive, providing conditions 1, 2, 3, 4, and 5 were met. In other words, the Board did not have the discretion of just saying "no." We could not do that. We had to do it for legal reasons. And we couldn't find them.

MS. FOX. Do you recall times that you wished there were a legal reason to decline?

MR. GREENSPAN. Not in any individual case, because I couldn't argue that maybe, indeed, there had been new synergies that we hadn't identified yet. The arguments that [the] staff was making were not an issue of definitive arguments. They were basically saying, "Maybe it is possible that the banks were seeing things we don't see," and I pretty much agreed with that.

I didn't agree, I just assumed that the staff's view was correct, and I had no reason to believe that [the] staff's views did not warrant agreement. But my conviction that size was not that important was largely undercut.

MS. FOX. Undercut by people in the market who obviously believed it did matter?

MR. GREENSPAN. Yes. And that was always the problem, which is in my mind. The one banking system that did very well during the Great Depression was Canada, with its few—seven—large banks.

April 28, 2011 (Sixth Day of Interview)

MR. HAMBLEY. Let's talk more about the FOMC—how people communicated in the FOMC and how the FOMC meetings were structured. Then we'll talk later about some broad ideas that are relevant to monetary policy and its evolution.

Conducting FOMC Meetings

MR. HAMBLEY. How did you run an FOMC meeting, and why did you run it that way?

MR. GREENSPAN. I inherited a structure from Paul Volcker and he from others, and they're probably very close from one Chairman to the next.

I quickly determined that we had a limited amount of time. We would have two-day meetings on occasion, but we tried to keep things within the one-day context against the formidable barrier of 2:15 [p.m.], when, in more recent years, an announcement had to be made.

The question was, do you try to restrict the number of hours that you ask the FOMC to gather relative to what they could be doing otherwise? Over the years, the Board sometimes met for, it used to be, every day in the morning, and the FOMC met periodically. I would presume it was less so in the very early years, when coming in from Chicago and especially San Francisco was a rather long trip, so that—a great deal is dependent on the issue of how one sees the tradeoff of time of the people who are there and what needs to be done. I tended to restrict it to as little time as possible in the context of getting what I presumed to be the maximum amount of information required to function as a committee, recognizing fully that that's not the only time you have communication with the other members of the FOMC. It's essentially an ongoing process, and I often would fill in my lack of understanding of what a particular member's position was by calling him or her on the phone and discussing it.

It worked out that the time allotted, which I presumed that I inherited from Paul, was absolutely workable over the full 18½ years that I had, in the sense that I think we had enough information presented to the FOMC and time for interaction. There was never a problem of inadequate information to make decisions.

That's not the same thing as saying you could not use more time productively, but it's always at whose cost and whose time for doing something else. So it's a tradeoff. And I found that, as the years went on, we settled down into a fairly stable way of running the FOMC. I can't honestly say, because I never gave it all that much thought, whether we could have done far more or whether we could have done less and still done well.

MR. HAMBLEY. Early in the meetings, there was the economic go-round. You spoke at the end and summarized the go-round. Is that correct?

MR. GREENSPAN. That is correct.

MR. HAMBLEY. Then when it came to talking about policy options, you flipped it, and you began the discussion subsequently. Was there a purpose for that?

MR. GREENSPAN. Yes. The purpose basically was that I knew pretty much where the Board members stood with respect to the outlook, but one of the major inputs into an FOMC meeting is a president's input. A president's input usually had one very helpful characteristic: It was right up-to-date, because each president, in preparation for the FOMC, brought together his research people. They had contacts with the people in their District that garnered information that was not available in any other way.

Today we have purchasing managers indexes all over the place. They're pretty much current, and they do a lot of what we tried to replicate in the early years of my tenure by bringing all the presidents together and essentially getting a purchasing managers index. That's how I would put it.

I chose to start off with the FOMC members giving their outlook, because I wasn't absolutely certain what they were going to say in all regards. What they did say often altered my view—not necessarily in quantum steps, because I'd be keeping up with their views intrameeting, but there were always nuances that either confirmed or didn't confirm my view of what was going on. So having heard that type of analysis with some but not all that much interaction amongst the members, by the time it got to the end of the economic go-round, I could alter my view as to what I was going to say before going into the policy go-round to the extent that it coordinated with what I heard.

There were often cases when I would hear things from, let's say, two members. You might hear the same thing from Kansas City and San Francisco, and I would say to myself, that's unusual. I hadn't heard that before. Hearing it in two places struck me as maybe significant, maybe not. I then essentially stipulated what I believed, which also integrated what I learned from the staff, because the staff had previously done something in presentations at one point or another.

We then moved into the policy area. It struck me that when you're dealing with a limited amount of time—this is where the time issue comes in—rather than having each individual have his say and then have somebody coordinate that, if you look at what the alternative was, the alternative was for me, having heard the particular views of all of the various members, I could infer what their policy implementation was going to be. So I already knew what the policy implementation was going to be. What that did, largely, was to allow [to] form [an] internally consistent position that individual members could then say they agreed with, they disagreed with, or they disagreed with it but they could live with it.

That differs from starting from scratch, where you don't have any notion of what each individual member's tolerance for positions other than his position would be, unless you asked them to say, "This is my position," but I could go this way or that way. It is quite efficient to start off with a particular proposition and then have individual members take shots at it. I found over the years that that worked very well, because it immediately set up where everybody was relative to a given position and didn't require getting everybody's opinion, then trying to formulate what some middle position was, and then getting some judgments as to how people are going to vote or not vote. Theoretically, you should come out in exactly the same place. It differs, however, because I think the second means is far more efficient, and it saves time, and, basically, I think over the years it worked very well.

Influencing Policy Decisions

MR. HAMBLEY. How did other participants in the FOMC meeting influence policy, given how the meeting was structured? At least for a portion of your chairmanship, when you had a policy preference, you would talk to the other Governors. You would go to their offices and tell them what you proposed doing and hear whatever they had to say. But at a certain point that stopped, and you went to what was called a Governors-only session on Monday to talk about monetary policy. Am I correct about that?

MR. GREENSPAN. I think so.

MR. HAMBLEY. What occasioned that change?

MR. GREENSPAN. I don't recall. I do recall it happening. My recollection was that it was at the recommendation of the staff, but I frankly don't recall it, nor was I aware that it made any difference. It allowed the Governors to interact with one another.

My recollection is, if it wasn't working, we would have stopped and gone back to the earlier thing. It's obvious, in some sense, that if you're meeting together, it's more efficient, because they can interact. How many years into my tenure was that?

MR. HAMBLEY. That was in the llate 1990s.

MR. GREENSPAN. For the first six months, I was trying to meet everybody. Meeting together is so obviously a better vehicle. But whenever Governors had something they wanted to discuss, they could come to my office and sit down and talk, which they did. So the Governors-only meetings didn't preclude anything else.

Did meeting as a group in and of itself serve a useful purpose? I suspect that it did. It helped me. I think it may have helped the other Governors to see what everybody else was thinking. I'm not sure it affected policy, from my point of view.

MR. HAMBLEY. As a result of those meetings, would you know where the Board members were on the likely policy proposal?

MR. GREENSPAN. I would, but I would know either way. The purpose of my earlier going down the hall was to integrate the positions of the Board members. Let me say this: There were many occasions, when starting the concept of formulating policy, I would have preferred personally to be right here with one policy. I ended up on many occasions over here with a somewhat different policy as a recommendation, because I realized that I was not reflecting the consensus of where the Board would be most comfortable. In many instances, it was basically because I presumed—obviously, that would have to be the case—that I was wrong, and they were right. If they were otherwise, I would try to talk them out of it.

MS. FOX. Conceptually, that's why monetary policy was made by a committee.

MR. GREENSPAN. The point is, I have one vote, and on many occasions, they didn't let me forget that fact.

MR. HAMBLEY. Were there memorable times when other FOMC members, either Board members or Reserve Bank presidents, persuaded you to make a change that you were not ready to make yourself, but then you heard them, and then you changed?

MR. GREENSPAN. Oh, my God, there must be hundreds of those.

MR. HAMBLEY. Are there specific ones that you remember?

MR. GREENSPAN. No, but in the early years, we did not have the real-time information that we have today. There's a very odd sense in which you almost don't need meetings—the communication is so general and the information is so voluminous. I know what's going on in the San Francisco District at exactly the same time and in exactly the same depth that the president of the Reserve Bank today would know.

That was not the case in the late 1980s and in the 1990s. And, as a consequence of that, I would very often learn as the meeting went on. I don't think that would be that much the case today, but I don't really know, obviously.

MR. HAMBLEY. When Reserve Bank presidents, who might have information that you didn't, wanted to communicate a strong policy preference to you, was it a matter of them getting on the phone, or did they have other ways of indicating to you what their preferred policy outcome would be before the FOMC meeting?

MR. GREENSPAN. There was only one vehicle they had: a telephone. The 19th century technology was all that existed.

MR. HAMBLEY. Was there a signaling, for example, when the Reserve Banks requested changes in the discount rates? Were they using that as an opportunity to say, “This is where we thought policy should be going”?

MR. GREENSPAN. By the time they were indicating that, I already knew. It wouldn’t come as a great surprise to me.

MR. HAMBLEY. If you had a strong preference for a particular policy outcome and you saw that you might have difficulty getting it, what kinds of things would you do to make people comfortable with the outcome? You could obviously change your own position a little bit, but were there mechanisms where you could help to get people on board?

MR. GREENSPAN. I didn’t view my job as persuading individual members other than making my pitch at the FOMC. I finished with the economic analysis and then went right off into policy. And often they sort of merged. I used that vehicle to stipulate my case as best I could. It was only in the Q&A that emerged in which I would respond. But I didn’t, as a general rule, go around and try to convince people that the policy that they were advocating was not correct, and that I thought there was a better one.

In fact, I remember only one single instance when I went out of my way during a meeting to get FOMC members not to vote where they were going. This was the very first move in 1994, the February meeting at which I was caught unawares by the fact that they were thinking in terms of increasing the funds rate by 50 basis points. As I started to go around the room, I said, “Oh, my God.” It caught me flatfooted. It was the only time in all of my years in which that type of thing occurred.

I've forgotten what exactly I said, but I basically said, "We're taking a high risk on the market's reaction. Do we really want to do that?" And I did get enough votes to go to a lower 25 basis point increase. The market still went berserk. I thought that was bizarre. We had been out there waving, in early 1994, saying, "Hey, we're going to raise rates." And so we said we just raised rates. Everybody was saying, "What?" It was sort of a shock.

I did not press for conformity. And one of the reasons is, most of the time it wasn't necessary, in the sense that we all had, as members, fairly similar philosophies. In the very beginning, that wasn't true. Martha Seger was an outlier in the number of dissents. Every once in a while we'd have an outlier, but through a big period of my tenure, everyone had the same view of how the world worked, how monetary policy worked.

The only critical differences were their interpretation of events around the meeting, what was going on at the time. These were factual reporting questions, not deep conceptual issues as to whether this policy works or that works. There was very little of that. It was, really, "Do we go tighter or do we go looser?" and it was all dependent on what the economy was doing, and that got down very simply to what the data were showing. Even though the data were not anywhere near as good as they are today, they were good enough so that, if the FOMC would look at the same data, a majority of us would come out the same way. That was largely the way it worked.

MR. HAMBLEY. For the directive to the New York Fed, if you had FOMC members that were uncomfortable with the basic policy recommendation, say, about the funds rate, you might be able, by shaping the directive to the New York Fed about the "tilt" for policy going forward, to make them more comfortable and get them to agree. Did you ever do that consciously?

MR. GREENSPAN. Oh, yes. That was one of the standard procedures to marshal a group of people who are dealing with probabilities, not with exactitudes.

One of the ways of going forward was, we always decided, well, what's the vote? Who votes what way? If there were those who were basically undecided or biased in one direction or another, then I would raise the issue: "If we altered the directive in the following manner, would you feel more comfortable with that?" Then I'd ask the rest of the members, "Would anybody else feel uncomfortable if we were to do that?" I don't recall how it all came out, but that was sort of the normal procedure by which you bring together 12 people—all of whom, one would presume, were independent souls—into a very similar, relatively tight framework.

MR. HAMBLEY. It was important to you to have as much agreement as you could get with a good policy outcome?

MR. GREENSPAN. Well, with one caveat. I was always uncomfortable with too much unanimity, and the reason was precisely the issue I just raised with you. It's not credible for intellectually independent people—and they're all of stature of one form or another—continuously agreeing. I actually felt a lot more comfortable when there were periodic dissents. On many occasions, somebody would come into the office and say, "I'm uncomfortable where we're going. Do you think it would be a problem if I were to dissent?" And I would say, "On the contrary, please do." Of course, it wasn't that there were many of them, but there were a number of them.

If I'm looking at a group of people month after month, meeting after meeting, and they all agree, I would say, "This sounds like an authoritarian government." It's just not credible. And it wasn't, in fact, that way. And this is where the tilts came in. It's not that they were really big disagreements. They were on the outlook. We were often wrong, but we were wrong together. The variance was not all that considerable.

MR. HAMBLEY. So for a move of 25 or 50 basis points in the funds rate, it might not really be that big a deal? Or if a smaller move might precede a larger move, it might not be that big a deal, and you just couldn't be sure that one course was right?

MR. GREENSPAN. I think that's correct, yes. You have to remember, as much as we would like it to be otherwise and as much as we act otherwise, we cannot forecast.

For 18½ years, I steadfastly refused to submit something for the forecast, because it frankly was not a legitimate forecast, in the sense you never specified what your assumptions were. Ordinarily, one would say, "This is the forecast of what you think might happen, provided there is no change in the funds rate." That's a credible coordinating forecast, but that was very specifically not a function of what Arthur Burns, who set the whole thing up, really wanted. It was more a response politically to the Humphrey-Hawkins Act, which I don't think he was favorably disposed to. So, to this day, they do it that way, and the press takes it and says "Oh, the FOMC believes this, that, and the other thing." I say, "Give me a break!"

MR. HAMBLEY. Well, FOMC members who submit forecasts are saying they believe there's a policy path—which they haven't specified—that could produce such and such an outcome in some probabilistic sense.

MR. GREENSPAN. But it's an unknown policy path. If the policy path is unknown, you're saying the policy path doesn't matter, and then why are we here?

MR. HAMBLEY. I was never aware, when those forecasts were made public, that you had not provided a forecast that was among the ones that were reported on.

MR. GREENSPAN. It's 18½ years. I said, "I'll give you a range. I'll give you a probabilistic forecast. If you insist, I'll give you the staff forecast," which I generally agreed with, "but I'm not going to give you a specific number." I didn't use the word "fraud," but that's what was in the back of my mind. I just said, "I do not know how to do this, and I don't want to pretend that I do. Moreover, I know that the people around the room haven't a clue any more than I do. So there."

FOMC Dissenting Votes

MS. FOX. What was your general impression about what gave rise to dissents about monetary policy actions?

MR. GREENSPAN. In the very beginning I would say it's part of personality, because it was a very different FOMC membership that I inherited than I was engaged with over most of the time.

MS. FOX. Was there any time at which you had a sense that you were in a challenging period and there were going to be more dissents?

MR. GREENSPAN. A challenging period and more dissents would seem to have a relationship. I don't actually recall it happening that way. We all went into the period as deeply confused as at any other time, and there was a tendency to believe that this period is more uncertain than any other.

You will probably hear that statement more often over the 18½ years that I was there in periods when it was tranquil and as simple and balanced as you can imagine. It's a very sobering experience to read those transcripts when you know what happened over the subsequent six months. Your immediate reaction is, "Where's the nearest match?" [Laughter]

There was this big dispute in the 1990s on where the NAIRU was. And it mattered not because of the academic nature, but it mattered how you interpreted what was going on. There were differences, but there were differences in periods of tranquility that probably were just as great. It's just a fact that everyone thought things were going to change and look worse, and it didn't happen. But we were all wrong together. So the variance didn't change.

Growing Comfortable as Fed Chairman

MR. HAMBLEY. Many of the things you did in your early career were more industry specific or not particularly macroeconomic. Did you become more comfortable as Fed Chairman? Did you feel that you grew into the job? Was there a point when you came into the office and you weren't worried any more about how things were going to work?

MR. GREENSPAN. Oh, yes. I think I said in my book, *Age of Turbulence*, I wasn't quite sure whether I wanted to take the job, because I didn't know how to do, quote, "monetary policy" even though I was very close to Arthur Burns when he was the Fed Chairman and I was chairman of the CEA.[16]

During almost two years of his reign, Arthur kept me informed on a very detailed level. I knew what was done. I knew all the levers, and I knew what was supposed to happen. I knew what was happening in the textbooks.

One thing about monetary policy—take a look at it now or take a look at it 10 years ago—you'll always find that there are disagreements within the most sophisticated groups of people about monetary policy: about, one, what the policy you just made over the last six months did and, two, not particularly any greater, what you think the next six months are going to do given the policy you just implemented. That tells you how uncertain it is.

[16] Editor's note: Alan Greenspan (2007), *The Age of Turbulence* (New York: Penguin Press), p. 99.

And when you continuously have academic articles written on the new channels of monetary policy, you've got to ask yourself, "What is it that we are doing?" We kept doing things because we had to, because, essentially, once you're off the gold standard, there is no mechanism in a fiat currency system other than the central bank to determine how many claims you print. And that number of claims is a very critical aspect of the way the economy works.

Milton Friedman used to always argue that it should be an automatic mechanism that the central bank should essentially increase the money supply by 4 percent a year or something like that, which you can do, but the notion of discretionary policy is still controversial to this day.

More on Monetary Policy

MR. HAMBLEY. Is there something about monetary policy that, in retrospect, you wish you had said in your recent book that you didn't?

MR. GREENSPAN. No, not really, because that presupposes that I had the knowledge I would have had later. If you're going to say the things you would have done differently in retrospect, I cannot. The list is so long, I don't know when to stop.

MR. HAMBLEY. I'm really asking about things that you have talked about in your book, whether there were some subjects that you should have talked about or wanted to say something about and didn't.

MR. GREENSPAN. Well, the major issue that I remember is the angst that Secretary Rubin and I had about the stock market bubble in the 1990s. We knew that there was, as I put it in 1996, irrational exuberance, but there was an unwritten rule that the monetary authorities did not discuss the stock market—things like bubbles—or things which now everyone talks about. It was not the role of the central bank, whose central focus was essentially to maintain the stability of the currency. That's what existed prior to the Humphrey-Hawkins Act and, really, since.

The central role of monetary policy is to try to replicate what the gold standard did without the gold standard problems. Central bankers around the world actually tried to do that, but there were very few tools that worked simply. We do know that, if we wanted to, a central bank can quash any expansion, any inflationary process. If you cannot do it with a 6 percent federal funds rate, try 12. If 12 doesn't work, try 40. Somewhere in that progression, you will stop the economy cold, because you will draw the liquidity out of the short end of the market, and the system will begin to tighten up inordinately.

The reverse is not true—namely, that if you expand the money supply, things will get better, although that is the conventional wisdom. Over the years, a goodly part of monetary policy has been run on the principles outlined by John Maynard Keynes in 1936.

It's always been a debate with people inside the Federal Reserve and outside the Federal Reserve about how monetary policy works. We all seemed to agree during my tenure that if the economy is showing inflationary pressures, and you lean against it, that's good. Whether it works or not is less important, but that's what you should do, on the grounds that it's likely to do some good—but it may not. Similarly, if the economy is running significant high unemployment, it's better to run a looser policy. Not that the looser policy would necessarily improve things, but relative to tight policy, it is likely to be less onerous on the economy.

The thing that has been extraordinary and which hasn't changed through all the years I've been observing monetary policy is that there is no established view of the way monetary policy works. Milton Friedman had a very large school that had very explicit views as to exactly how it worked. He reached hegemony in 1979 when he demonstrated that you needed to tighten to squeeze the inflation out of the system.

If there are principles that we do know, there is no question that inflation is a monetary phenomenon. And in one episode after another—not necessarily in the United States, but maybe abroad—the way you controlled inflation is through tightening monetary policy. There are maybe four or five general principles of that nature which do work. But you're making monetary policy every six weeks or, in fact, every day, if you want to put it in those terms. You don't have these large things occurring any more than twice a year, if that. And so what do you do in the interim? Most of the problems are, what do you do in the interim?

When we tightened in 1994, we judged that inflationary processes were in the process of building. Therefore, we should lean against them. In early 2001, the stock market had already come down a bit, the economy was quite wobbly, bond yields had come down a great deal. So we started in 2001 to bring the federal funds rate down. Now, did we know whether that would do a great deal? We weren't sure. We knew that lower bond yields would do a lot, but would the additional short-term liquidity in the system make that much difference? We wouldn't know, but what we could be reasonably sure of is that the alternative couldn't be better—namely, tighter monetary policy.

A great deal of monetary policy is made in that type of area. It's not the science of quantum mechanics, where you do this, and the probability is .9999999 that that will happen. In monetary policy, you do this, and sometimes it does this, sometimes it does that. You don't always think of it in those terms. You ask yourself, "What if it does this, and I am wrong?" or "I think it's going to do this, or I try to make it do this, and I'm wrong?" versus "If I do this other thing, and I'm wrong?"

If you have no way of knowing what the outlook is, policy is often best done by asking yourself the question: If there are two alternative policies, each of equal validity, you tend to operate in the area where making a mistake over here is far more costly than making a mistake over here. A goodly part of policy is done that way. You never hear that conversation, but that's what happens.

MR. HAMBLEY. This is what you call the "risk-management approach" to monetary policy?

MR. GREENSPAN. Exactly.

The Risk-Management Approach to Monetary Policy

MR. HAMBLEY. In your book, you talked about the Asian crisis as though that might have been the time when you developed the risk-management approach. How did the risk-management approach to policy develop? Was it that episode, or was it a gradual discovery?

MR. GREENSPAN. Risk management really starts in the 1950s with Harry Markowitz. He was a University of Chicago economist who was endeavoring to talk in terms of stock market risk management, of how you balance portfolios and, for example, why diversification lowers risk.

There's a series of economic evaluations about risk and risk management. Fischer Black would have won a Nobel Prize if he didn't die. The number of Nobel Prizes that were involved in developing risk-management structures is really quite large. With the crash of 2008, I think that the Oslo group who awarded the Nobel Prizes probably wanted to get them all back, because a lot of them are now argued as the cause of the 2008 crash. I think they're wrong. I think that Fischer Black's mathematics on the pricing of stock options was brilliant—really terrific mathematical insight.

As the years went on, I was more and more involved in the academic aspect of risk management, and I found it a very useful way of understanding how people behave. As you put it before, I come from industry, steel. Everything is what we call statistical input–output. There's no probabilistic issue if the level of steel inventories have risen such and such, and, unless they turn around, X, Y, and Z are going to happen. Those are like necessary propositions.

The notion of risk, which goes all the way back to Frank Knight in 1921, really defined the structures. This was evolved and developed through the 1950s, 1960s, 1970s, and 1980s, and I was always aware of what was going on, getting more and more interested in that concept.

Before I entered the Fed, I was already involved in thinking in those terms, but I think you're quite right, I guess it started with the Asian crisis, basically. It's hard to remember, but there is no doubt that, by then, I'm thinking more in probabilistic terms, and the most important issue is in formal probabilistic terms.

I'm now writing a book in which I'm recovering all of this information and consolidating it. I was going to call the book *The Econometrics of Human Nature*. It is endeavoring to put numbers on how human beings behave in a probabilistic sense. Several of the examples I'm probably going to give are in monetary policy decisionmaking. So it's mainly that it evolved.

The best answer to your question is, my risk-management approach slowly evolved over the years, in one sense actually unbeknownst to me. It sort of just percolated. And epiphanies don't occur by accident. Usually, you throw in an awful [lot] of information, let it stew, and then new insights arise. And they're still popping up. Unfortunately, maybe a third of them are popping up, saying, "What you believed previously is wrong." But it is a new insight.

Chairman of the Council of Economic Advisers

MR. HAMBLEY. You were the chairman of the CEA from September 4, 1974, until January 20, 1977, a time when inflation was beginning to be a problem. What were your views then, and what do you remember about the dominant view of economists about inflation and its prospects at that time?

MR. GREENSPAN. Inflation didn't show really independent pressures until the early 1970s. In 1971, we had wage and price controls, because the CPI was going up over 4.5 percent a year. That seems like a lot today. It seemed like a lot back then, but considering it got up to 12 percent, it's not.

Milton Friedman wrote *Newsweek* articles that had very wide circulation. He had a famous chart of the rate of inflation in which the peaks were always higher than the previous peaks, and the lows were always higher than the previous lows. So you had a ratcheting thing going up.

It wasn't apparent until probably about the mid-1970s, when I got involved, and we did talk about inflation a great deal. In fact, a goodly part of economic policy in the Ford Administration was an anti-inflationary policy, but, of course, it got worse and worse until it peaked late in 1979 or early 1980 at heretofore unimaginable rates. This was peacetime, and it looked as though the American economy was in very, very serious shape.

MR. HAMBLEY. Were you confident that some policy could be pursued to stop inflation?

MR. GREENSPAN. Oh, yes. This is one of the key areas where we know monetary policy works for sure. The question was, could you put the clamps on politically? There was all sorts of stuff being written. I'm sure that they'd love to disavow it in today's context, that the cost in increasing unemployment by tightening up was not worth it.

A number of economists, very well known, were arguing that their econometric models said that the cost in unemployment to get the inflation rate down was going to generate vast problems. Now, it turned out that that's not the way it worked. As we got into the 1980s, we were getting both a decline in the unemployment rate and a decline in inflation, and this was not in anybody's textbook of slack being the critical variable in inflation. But if you're asking, "Was there a considerable amount of discussion about it at the CEA in that period?" the answer is "yes."

MR. HAMBLEY. Among many commentators, there was a sense of hopelessness, that maybe this inflation was something new and there was nothing that could be done about it—a general feeling that you might actually be powerless.

MR. GREENSPAN. The equivalent of saying "You're powerless" is that the cost of addressing it is unacceptable.

MR. HAMBLEY. So what did you think had caused the inflation, and what role did you think the Federal Reserve had played in that development?

MR. GREENSPAN. The data do show that unit money supply—which is M2 in most formulations today divided by the capacity of the economy or by the GDP or some other measure—fits the long-term trend of price inflation. I formalized it at the Board in a thing we called *P**, which staff periodically reproduced. You could see the role over the long term of what money does to prices.[17]

In recent years I have developed econometric models that show that a combination of a slack variable—meaning the rate of operations or the employment rate—coupled with a long-term money supply statistic forecasts the change in the CPI core remarkably well to this day. The difference is that the lead in the slack variable is, like, nine months, the lead in the unit money supply variable is more like several years.

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[17] Editor's note: Jeffrey J. Hallman, Richard D. Porter, and David H. Small (1991), "Is the Price Level Tied to the M2 Monetary Aggregate in the Long Run?" *American Economic Review*, vol. 84, pp. 841–58.

You could see those trends developing within the period when I was at the Board. What ultimately is verified by all of this is Milton Friedman's proposition that everywhere inflation is a monetary phenomenon. And if you go outside the United States, it very clearly is. You will find no instance of which I'm aware in which inflation is roaring away and money supply growth is 2 percent.

MR. HAMBLEY. Did you take that insight, as you understood it at the time, and say that it must be the case that the Federal Reserve has at least allowed this inflation to accelerate?: "The Fed has underwritten the acceleration of inflation, and that that has to change." Would you have said something like that at the time?

MR. GREENSPAN. I was basically in favor of Paul Volcker doing what he did. By then I was in the private sector. If you're asking me was it necessary to do what Paul's FOMC did, I would say, "Absolutely." In fact, I was very much surprised that they got the response they got, which was alien to all of those forecasts that said their actions would have a very major impact on unemployment. Now, it did knock the economy into severe recession, but nowhere near the order of magnitude that the earlier models had suggested.

MR. HAMBLEY. Inflation accelerated in the United States in the 1970s, and the Volcker treatment of wringing inflation out of the system was painful. Did that experience govern what you tried to do as Chairman?

MR. GREENSPAN. As I came into office, my basic goal was to preserve the inflation gains that Volcker's Fed had accomplished. I was able to carry them further, but not because of anything we did.

Ultimately, the end of the Cold War brought on a number of economic policy changes within the developed world that led to a huge increase in the rate of growth in the developing world, especially in China, where, in turn, the rate of consumption could not keep up with the rate of gain in the growth of those economies, which meant a huge amount of it was saved. That savings spilled over into the developed world and the world generally, bringing real long-term interest rates across the board down so that, by 2006, every single major country had long-term interest rates in single digits. But so did a very large number of countries for the first time ever.

This was a very critical issue that, by bringing real rates down, inflation would come down with it, because you had low nominal long-term rates functioning at that time. That was a bonus. That was not my goal. I didn't think it was feasible. But I had no real understanding of how extraordinary the political changes in China, India, and the whole East Asian bloc were going to be. So I would have been more than satisfied if I could have kept the gains that Paul had made.

MR. HAMBLEY. Was that partly an awareness that, if you didn't keep the gains, if policy allowed a new acceleration of inflation, that it would be quite expensive to put the genie back in the bottle? Did you feel that it was just much better not to get into that situation again and not have to deal with it again after the fact? My impression is that what had happened with inflation was so unpleasant, and dealing with it was so unpleasant, that for a long time on your FOMC, the desire was not to go there again, but to nail inflation down.

MR. GREENSPAN. That's actually accurate.

MR. HAMBLEY. As inflation was accelerating in the 1970s, you had both the final abandonment of the relics of the gold standard—

MR. GREENSPAN. August 15, 1971.

MR. HAMBLEY. Right. Was that a contributing factor to the inflation that occurred later?

MR. GREENSPAN. First of all, remember that we abandoned gold basically because the inflationary policies of the previous period had created too many claims in dollar assets relative to our stock of gold.

MR. HAMBLEY. So there was already an inflation problem?

MR. GREENSPAN. Oh, well before then. In fact, the very first signs of it were in the Kennedy Administration, where we had a little blip up in the $35 announced price of gold, which then got suppressed successfully.

But it's the Vietnam War and all that preceded it immediately and thereafter. It has, in many respects, similar characteristics to today, where the budgets were getting somewhat out of control periodically, but the size of government was increasing very rapidly, with the consequence that it would be having an effect on the general price level. It was never enough to really be concerned about, because there was the view that, because the United States was essentially an inflation-resistant economy, inflation was not something that would bother the United States.

We got through World War II—I couldn't say without a significant rise in [the] price level, but without inflation from 1948 pretty much until the early 1970s. It was a nonevent. It was quite remarkable. We were gradually eating up the excess money supply, and that kept inflation subdued, but when we got to Humphrey-Hawkins—I was not there when the policy began.

The conventional wisdom is that the Fed was too easy during the 1970s. I lived through the period. It wasn't that self-evident at the time. It wasn't that the Fed was inflationary and everybody else was holding the line. If anything, everybody else was far more inflationary than the Fed.

In retrospect, was the money supply growth, as such, a particular problem? I would say probably, but it has been grossly overexaggerated in that particular period. The issue is the Vietnam War, the development of the Great Society, which changed the whole budget structure very substantially. These were all factors which weighed on the gradual development of inflation. I can't say I anticipated it. I knew it was going on. I knew it was getting worse. I found it very worrisome and argued strongly against it.

In 1981, I even talked about having a gold-backed U.S. Treasury bond on the grounds that nostalgia for the gold standard had reached new heights.[18] There was a commission on gold at that point, and so it wasn't difficult to be against inflation and it wasn't difficult to know what had to be done. The real issue was the tradeoff, to what extent controlling inflation increased unemployment.

MR. HAMBLEY. So if you were an economist who believed in a simple tradeoff between unemployment and inflation, you might see the cost of conquering inflation as being just unacceptably high. It would suggest that you'd have to hold unemployment very high and maybe indefinitely to suppress inflation.

MR. GREENSPAN. Certain Nobel Prize–winning, famous economists held exactly that view.

MR. HAMBLEY. This was also the time when economists like Friedman were developing the notion that perhaps there was a Phillips curve, but it might depend on inflation expectations. And factoring that idea into an inflation-fighting regime might suggest that the cost of fighting inflation will ultimately be less, because inflation expectations will fall, and that will tend to improve the tradeoff.

[18] Editor's note: Alan Greenspan (1981), "Can the U.S. Return to a Gold Standard?" *Wall Street Journal*, September 1.

MR. GREENSPAN. That's essentially what rational expectations was all about at that particular time. And, in retrospect, there's no question it was right. Because you cannot both be right that the cost of containing inflation is a very large increase in unemployment and, on the other hand, that the cost of containing inflation is small relative to the consequence of not doing it.

MR. HAMBLEY. But there was an intellectual revolution going on at that time.

MR. GREENSPAN. Oh, yes. Friedman was in the middle of it, but the whole Chicago school was. It had a very profoundly important effect on monetary policy.

The Federal Reserve's Monetary Policy Mandate

MR. HAMBLEY. I'd like to ask you about the Federal Reserve's monetary policy mandate. The words that tell the Fed what goals it's supposed to be pursuing emerged in 1977 even before the Humphrey-Hawkins Act, but they were there in Humphrey-Hawkins as well. They said to the Fed, when you conduct monetary policy, pursue "maximum employment, stable prices, and moderate long-term interest rates." In your mind, how are these goals related to one another?

MR. GREENSPAN. They are related only if you argue that a noninflationary monetary policy will keep long-term interest rates low, the economy moving, and therefore unemployment low—that, therefore, a necessary condition for low unemployment is low inflation.

We successfully maintained that view throughout pretty much the whole of my tenure, and nobody challenged it. The reason they didn't is that you couldn't. That's what the facts were. That's not what the facts were as viewed by Humphrey and Hawkins back when they talked about it.

For example, in 1979, you had lots of economists who said it's not worth bringing inflation down. It's a theoretical issue of the way the economy functions. I happen to think the one I just postulated is correct, and I think the evidence definitely confirms that, but it didn't for a while.

There was a big dispute within the Fed in the early 1990s about where the NAIRU was. A very high NAIRU presupposed that the cost of bringing inflation down is very expensive. I argued that the NAIRU was nowhere near that. And, indeed, when the unemployment rate eventually got below 4 percent and no inflation occurred, the issue was no longer on the table.

MR. HAMBLEY. I want to focus on the evolving understanding of the meaning of the dual mandate. How could monetary policy be consistent with the words that the Congress had written? I think you just said that, in principle, there is a state of the world with low inflation that simultaneously meets these other two goals.

MR. GREENSPAN. Precisely. I always argued that there is no such thing as the dual mandate. There's one mandate, keeping inflation low. That will create low unemployment over the long run. The dual mandate comes from the Keynesian structure where the only way to get inflation down is to keep unemployment up. And if you allow a little inflation, it is very helpful for unemployment.

There was a period where it was believed that it's always good to have a little inflation, because it creates much lower unemployment. It turned out that that was false. But it was not known to be false until the late 1970s, because you couldn't argue all during the 1930s, during the war and in the early post–World War II period, what ultimately became the NAIRU or whatever we wanted to call it at the time. There was no notion of what the Phillips curve looked like. The argument was, and most models had picked it up, in order to get the inflation rate down, you need a very major increase in unemployment.

Everybody agreed that inflation itself can undermine economic activity. There was so much evidence that that was the case that there was no real big dispute about that. It was, basically, what is the tradeoff between unemployment, on the one hand, and inflation on the other? Everybody agreed inflation in and of itself was bad except, at the margin, for very small changes.

But there was very vast disagreement on the relationship between unemployment and inflation. The standard Keynesian models, which prevailed almost without exception through the Vietnam War into the early 1970s, ran into a fundamental contradiction late in the decade where you were getting to high unemployment and high inflation, and these models said that's not possible. At that point you had this major swing of people coming in saying, effectively, that expectations of inflation in and of themselves will create the same problem. What we did know is that the data showed that you could reduce the unemployment rate and the inflation rate at the same time, which meant the sign was wrong in the early standard Keynesian models.

To account for this, there are expectational variables in FRB/US (the Board's large-scale econometric model) and every place else. We cannot in any of the longer-term models have continuous inflation and falling unemployment. At some point the model will force it to reverse, with the model capturing the type of events that we experienced during the 1970s. But in that sense, Humphrey-Hawkins was based on a mistake.

MR. HAMBLEY. The law itself states *three* goals for monetary policy. As I remember it, during your chairmanship, it had become what was then called "the dual mandate," dropping out the part about moderate long-term interest rates. But at that point, people were not thinking "maximum employment," but "maximum *sustainable* employment" and stable prices. So my question is: Where did the word "sustainable" come from?

MR. GREENSPAN. I inserted "sustainable."

MR. HAMBLEY. Basically, the notion is that you can't have zero unemployment. There's some low but positive rate of unemployment that's sustainable.

MR. GREENSPAN. It's called "frictional unemployment."

MR. HAMBLEY. You can get to that low rate of frictional unemployment and you can maintain it over time, but that's really the best you can hope to do?

MR. GREENSPAN. Correct.

MR. HAMBLEY. You said you had inserted the word "sustainable." How did we get from a triple mandate to a dual mandate, and then to a dual mandate where the employment part was qualified in that special way without some big discussion? It just sort of happened?

MR. GREENSPAN. I don't remember any big discussions, and the reason was an acute awareness that Humphrey-Hawkins was really a tribute to a dying Hubert Humphrey. I may be mistaken, but I don't recall very much in the way of congressional reaction when somebody would raise the issue of an unemployment–price tradeoff. I'd say, "What you really mean is sustainable, long-term unemployment." To get unemployment that is, on average, low but it's going up and down is not something that one would want, nor would it sustain a stable economy. So the word "sustainable" is implicit of necessity in the law. It would have to be, because to say "nonsustainable" is a contradiction in terms—or, more exactly, undermining the basic purpose of the act, which is maximum employment and minimum inflation, and the minimum inflation would be reflected in long-term interest rates.

In effect, what I basically did was say, "These are not independent variables." If you solve the issue of inflation—stabilize the price level—you will bring long-term interest rates down, bring the economy's level up, and therefore bring the long-term sustainable rate of unemployment down. The sign is not a negative sign between inflation and unemployment, meaning the negative sign implies a tradeoff. I would deny that the tradeoff existed. No one ever questioned that.

MR. HAMBLEY. I would say that an economist's understanding of the relationship among those variables is fundamentally different from the understanding of the people who wrote the law.

MR. GREENSPAN. This was very different from the conventional economic wisdom in 1979. I could name to you very famous names who really differed with that particular point of view. The problem is that it's either true or false. And what the decline in the inflation rate from the mid-1980s forward demonstrated was that that proposition was correct. It's not quite the issue of the 1919 demonstration that gravity bends light that developed the general theory of relativity, but, in economics, it was almost that level. It had the great effect of quieting the other side.

Importance of Price Stability

MR. HAMBLEY. Yes. You've already stated what was obvious during your chairmanship. You believed that price stability was the single most important goal that, in some sense, would unlock what the economy could really do on a sustainable basis.

MR. GREENSPAN. It was a necessary condition.

MR. HAMBLEY. Do you also think it's a sufficient condition?

MR. GREENSPAN. I don't think so, no.

MR. HAMBLEY. I think we've learned that it's not enough to achieve that.

MR. GREENSPAN. Yes.

MR. HAMBLEY. You can get good macroeconomic outcomes, but you may also have other problems.

MR. GREENSPAN. Right.

MR. HAMBLEY. How did you become persuaded intellectually that price stability is key to good macroeconomic performance over time? Was it a matter of being influenced by certain thinkers? Was it a matter of observing the world?

MR. GREENSPAN. It's a syllogism. First, an economy, to go forward, needs productive capital investment to raise productivity and standards of living. The types of decisions that are made in investing are a function of what people expect about the future. In short, if you are on a capital appropriations committee of a corporation and you're deciding whether or not you're going to build an aluminum rolling mill, and its life expectancy would be 30 years, you judge its average rate of return will be 25 percent a year. And then you ask the question, "What are the alternative forecasts?" In other words, to be sure, it's [a] 25 percent rate of return, but what's the range of error? What you can demonstrate is that, to the extent you have price stability, the variance of that distribution is at a minimum. That is, there are fewer variables that can affect it over the longer run.

If you are told as a given that prices will not change for the next 25 to 30 years, that variance will be much less than if it's going to be up 5 percent a year, on average, and variable. You can demonstrate that the greater the variance, the greater the uncertainties, the less likely that the capital that will be invested in is the capital that is most productive for the nation's standard of living. Capital investment will be that which offsets, or fights, the inflation in part at the cost of new productive equipment. That general principle, which is verified time and time again by what's actually going on in the economy, is what governed my view.

One aspect of my being in the private sector and analyzing, for example, an aluminum rolling mill—I would do that sort of thing and see what the consequences were of different types of assumptions. Granted, that we cannot forecast, but how do we determine whether we should take the liquid cash flow of a corporation that's coming in from the profits and allocate it to irredeemable long-term fixed investment? You can't sell the aluminum rolling mill except at scrap prices, and so your rate of return's going to come back through depreciation and profit. It's wholly illiquid. That is a major commitment that is irreversible on the part of the board of directors of the corporation, and it is a function of that distribution.

MR. HAMBLEY. In a way, it was a micro view that led you to believe that price stability was a desirable macro outcome.

MR. GREENSPAN. It's a micro view that is a very general proposition.

MR. HAMBLEY. Most macroeconomists wouldn't have arrived at that proposition that way.

MR. GREENSPAN. There are very major advantages in coming at being a macroeconomist from the detail. You know all the qualifications about what the equations are saying that you wouldn't know if you didn't recognize that, instead of dealing with consumption expenditures generally, which is what the equations tell you, it matters what's in those consumption expenditures: What vegetables? What cars? In short, the details do matter.

When you come out of many, many years of dealing in every single industrial area that you can think of in great detail, which is what I did—even though, when I first came to the Board, and I said to myself, "I really don't know how to do this," I said, "You do know how to make judgments about the probability of what the economy is going to do. And does that really differ all that much from what policy is? Supposing you basically translated your view of when to tighten or when to ease as to when you thought the economy was going up or going down. Is that an adequate monetary policy?" And I said, "Yes, as far as I know, it's probably the best you can do." I still hold to that view. It's about the best we can do.

MR. HAMBLEY. Having accepted the proposition that price stability is important, how does one define it and know whether you've achieved it? When you were Chairman, you would publicly define price stability in qualitative terms: Price stability is when people, in their planning, are not worried; they don't factor inflation into their decisions.

MR. GREENSPAN. That's exactly what I just mentioned. In other words, if you're looking at a distribution of probabilities and you think inflation is going to be zero, which is a critical issue, you don't worry about it, and you worry about the other variables.

MR. HAMBLEY. So price stability is really in people's minds. It's their reaction to what they think is happening and whether or not they take it into account. Is that the reason why you resisted measuring price stability in terms of a particular price index?

MR. GREENSPAN. At the moment gasoline consumption is 3.5 percent of personal consumption expenditures, and you would think gasoline prices have a weight of 3.5 percent. Now, in the mind of the average person who is exposed to gasoline prices every two weeks—comparable pricing—it is a very different view from when you buy a new bicycle every five years. There are certain prices that are very visible and have disproportionate effects, and they are relevant. And the whole concept of price expectations, to a very large extent, depends on whose.

You cannot basically say, “The market is saying this.” That’s telling you something, but that doesn’t tell you everything. For example, the TIPS (Treasury Inflation-Protected Securities) will reflect the average CPI change, because that’s essentially what it is. Therefore, you’re going to be compensated for what the total CPI does. Yet the total CPI can have a hugely different impact on expectations of households that are sitting there worrying about what they’re going to do with $4 or $5 gasoline, even though it is a small part, on average, of the total CPI.

MR. HAMBLEY. I was wondering about this very example. It seems that when you shop for gasoline, that’s basically all you’re shopping for most of the time, and you’re very focused, you’re very aware of what that price is. It’s printed up there on a big sign. But it’s not mixed in with the prices of a list of groceries, for example.

MR. GREENSPAN. That’s right.

MR. HAMBLEY. So it is a much more visible price.

MR. GREENSPAN. I suspect the price of milk has similar characteristics. It’s homogenous and used quite often and priced consistently. That’s the reason why I would say that, if you’re looking at how expectations of price inflation affect behavior currently, you have to ask, “Who is doing the viewing?”

MR. HAMBLEY. So that makes it hard to use whatever you know about expectations to make policy.

MR. GREENSPAN. That is why monetary policy is not easy. You’re dealing with human beings, and it’s a mess. We’re a mess.

Public Inflation Targets

MR. HAMBLEY. Were there policy reasons why you didn’t want the Fed judged by the performance of particular price indices? Were there policy reasons why you didn’t want the Fed to have a formal inflation target expressed in terms of some price index? What was the reason for that?

MR. GREENSPAN. That wasn't the argument. The question is, do we announce it or not? We always had an inflation target. In the economic sense, it was 1 to 2 percent. The issue was, what is gained by announcing that? I always argued that announcing it is a mistake, because you can never know, as the price inflation rate gets up to the 2 percent level, whether or not it's about to keep rising or come back down. It may very well be up at 2 percent and rising, but the unemployment rate is going up as well.

In short, if you announce a target and specific actions that are required to reduce inflation to the target, you may be implementing policy that makes no sense whatever. It is perfectly credible to me that, since prices are a lagging indicator, you can have price inflation up at 5 percent—much too high for your goal—and, at the same time, the economy's collapsed three weeks ago, and the unemployment is rising a percentage point a week. Now, you're going to tell me you're going to tighten in that period? And you're going to say, "No." And I have to say, "Why not?" because you've chosen one policy. Don't tell me that the unemployment rate is rising. That was not in your policy stipulation. If it is important, say so. Then it is no longer a simple target.

So my issue had nothing to do with whether we should have a goal or target, it had to do with whether we announced it and then had to defend why, in the event that prices moved up beyond it or below the low level, that we took no action. No action, in many instances, is exactly the right policy. It's the formulation of the question that is an issue.

MR. HAMBLEY. If inflation is too high relative to your target, it may be in the process of coming down without policy action—you could say it wouldn't be necessary to take action because we believe it's going to come down, and it would be the wrong policy if we actually increased the funds rate?

MR. GREENSPAN. That's exactly right, but what is the point of announcing a goal if it is not for purposes of taking action? And then the question is, what action would you take? The implication of having a single goal delimits the action, in the sense that unemployment is not part of the sentence.

MR. HAMBLEY. This seems like a reasonable place to stop.

MR. GREENSPAN. With high unemployment, yes. [Laughter]

MR. HAMBLEY. Thank you very much.

August 22, 2012 (Seventh Day of Interview)

The Causes of Inflation and the Central Bank's Responsibility for Inflation

MR HAMBLEY. I'd like to begin with some basic questions about inflation and the responsibility of central banks for keeping it under control. In earlier interviews, you've mentioned many times the importance of price stability, of controlling inflation and keeping it low for the purposes of promoting maximum sustainable growth in employment and rising living standards. What causes inflation, and what can the central bank do about it?

MR. GREENSPAN. Well, the very simplest explanation of a price level is, it's the ratio of money available in the society—that is, claims to goods and services—relative to those goods and services. And one would say, price—say, it's $10 for a yard of cloth—we're basically saying, that's the amount of purchasing power that claims on that physical amount. If the relationship was always constant, then prices would be exactly the ratio of the total amount of what we call "transaction balances" to output. Money supply or purchasing power is a disputable question, but money related to goods is what we mean by "price." And what we mean by "inflation," in the simplest terms, is any deviation from stable prices, constant prices.

There is a bias in all price indexes that we publish, which is in the area of 1 percent, 1.5 percent. And, consequently, something in that area on the rate of increase of a price index is tantamount to no change in prices. Ultimately, by inference, the primary role of the central bank should be stability of prices as a primary and, in many cases, perhaps the sole goal, depending on what you want your central bank to do. So, obviously, inflation exists when the amount of money growth exceeds the increase in the supply of goods over a period of time. And, indeed, if you look at very simple relationships like one of our standard measures of money supply, which is M2, it's a certain adding-up of currency and bank deposits of a certain type (and money market mutual funds) on the grounds that they are what is directly related to the purchases of goods and services. If you look at the data over a 50-year period, lo and behold, the increase in the amount of money supplied divided by the physical quantity of production—or, more sophisticatedly, the capacity to produce—that moves very closely with the actual recorded change in prices. To be sure, it doesn't change easily one year to the next or sometimes even three years to the previous three years. But, over a long period of time, it has always come out that way.

Central banks originally began when the gold standard was still in place. And under the gold standard, because gold was the essential basic reserve of the banking system, the supply of gold essentially determined the amount of credit or money that was created and, therefore, kept the price level essentially stable. And, indeed, the data show, going all the way back as far as we have it, to the beginning of the 19th century and earlier, that prices didn't change that much. Prices, I would say, sometime in the early part of the 20th century, let's say 1932, were approximately at the same level.

MR. HAMBLEY. So, basically, inflation is an imbalance between the growth of money over a long period of time compared to the growth of the production that an economy is capable of.

MR. GREENSPAN. Precisely. Thank you for summarizing it very quickly.

MR. HAMBLEY. What causes these prolonged bouts of difference that result in measured inflation over time?

MR. GREENSPAN. You mean, the differences between—

MR. HAMBLEY. The growth of money and the growth of potential output.

MR. GREENSPAN. It's hard to know. I haven't looked at the numbers too closely recently. But it used to be that the ratio of unit money supply divided by price levels, which is what you're asking, would actually reflect the fluctuation of interest rates, so that you could define, given the money supply and the income velocity—you have an approximation of what the relative tightness of money would be and, hence, in interest rates. My recollection is—and I haven't looked at this in recent years—that that relationship is no longer that simple. And, indeed, one of the problems that we have is, we're not quite sure what money is.

For example, I can say it's a transaction balance, but I can take, say, a thousand shares of a $30 price-per-share stock and go to an auto dealer and say, "I'll swap you this stock for a car," and that's an actual transaction. Now, the auto dealer will basically say, "That's fine, but I will have to tack on a little extra fee for the time and effort of converting your stock into cash." But there's no reason why any claim that has market value and is capable of being sold in the marketplace isn't ultimately a claim against the productive capacity of the economy.

Fiscal Policy and Inflation

MR. HAMBLEY. Is it some policy action that tends to cause periods of persistent inflation? For example, is it fiscal policy that somehow translates into too rapid growth of money relative to output? Is it policy mistakes by a central bank? What causes inflation? And then, what can central banks do once they see it happening?

MR. GREENSPAN. Well, first of all, let's start with fiscal policy. Fiscal policy is usually a necessary but not a sufficient condition to get inflation going, because it's perfectly credible that if the central bank holds its reserve balances very tight and the federal government creates a large deficit, what that deficit will do is crowd out other parts of the economy, because there is a certain limit that the central bank will determine. So, ultimately, while unquestionably very large deficits put very extraordinary pressures on central banks to expand and, essentially, at the end of the day, over the centuries, monetize the fiscal deficits, it depends on what type of regime you're under. It didn't exist and couldn't exist under the gold standard, because gold standard reserves are limited. And if governments ran a deficit, what they would end up with is higher interest rates.

Higher rates were necessary to crowd out the private sector, but you would not end up with inflation. But if you are not on the gold standard, then somebody, meaning people, have to make the judgment as to how much money should be created. Milton Friedman, as you may remember, was always in favor of the Federal Reserve creating an increase in the monetary base of, I believe, 4 percent a year, on the grounds that it was sort of equivalent to a noninflationary growth rate.

The key question here is, ultimately, if you do not have a gold standard, the only restraint that exists in the United States is in the FOMC. It makes the judgments as to how much of the monetary base, which is essentially the equivalent of the gold reserves, gets created.

Over the decades, when the Federal Reserve was protractedly loose in periods when the economy was rising significantly, we engendered a significant amount of inflation. And what we subsequently learned is that inflation, at the end of the day, is self-defeating, and economic activity and standards of living are not enhanced—except under extraordinarily limited circumstances—by that type of action.

MR. HAMBLEY. Going back to fiscal policy—fiscal policy, if it were accommodated or accompanied by an inappropriate monetary policy, could lead to inflation, but it would not cause inflation by itself?

MR. GREENSPAN. That's correct. In other words, if you get what economists call "monetizing the federal debt," you are creating claims for goods and services without producing the capacity to meet those claims.

MR. HAMBLEY. So if the economy is suffering inflation, it would take deliberate action by the central bank to restore the appropriate relationship that should exist. In some sense, you have too much money for each unit of output, and, over time, you have to whittle that excess down, is that right?

MR. GREENSPAN. Precisely.

Energy Price Shocks and Inflation

MR. HAMBLEY. In the United States, we've often had energy-price shocks, such as a sharp rise in oil prices, both before you got to the Fed and then during the time while you were there. Can such phenomena cause persistent inflation by themselves?

MR. GREENSPAN. It depends whether they are accommodated, and, once being accommodated, what happened when the energy prices receded. This is strictly a hypothetical case, because I cannot imagine it occurring in practice—because that, of course, requires a forecasting capability that none of us has.

Let's assume the oil price went up very significantly and absorbed a very significant amount of the claims on productive capability, and you accommodate that by increasing the money supply. Then when the price turned and came down, you reversed the process. You could end up, at least theoretically, going through that particular period with very little change in the degree of inflation. It's extraordinarily difficult to pull that off. And so the general attitude of central bankers has been, over the years, do not accommodate what appears to be commodity price changes, which historically have gone up and down.

Now, you often will run into a problem where that has been true of certain commodities, but after a while you find out that, indeed, that period of long-term stability is no longer the case, and that there are some chronic shortages within the world that cause the price to be chronically rising, which would be like many commodities or many products.

MR. HAMBLEY. So if the increase in the price of a commodity doesn't reverse itself and you have not accommodated it, then—

MR. GREENSPAN. You're putting a restraint on it that, in retrospect, was not necessary.

MR. HAMBLEY. As a general proposition, what is the right response to an adverse supply shock like that? Does it depend on correctly forecasting the path of the commodity's price and then doing the right thing?

MR. GREENSPAN. Yes. Remember that monetary policy, to a very large extent—and to a much greater extent than is the conventional wisdom—actually requires the central bank to forecast, because every action the central bank takes implies a forecast, whether or not it is a conscious projection. There's no way of getting around that. And there is also no way of making the FOMC omniscient so that it would always get the right result. As a consequence, there's going to be a necessity, probably inevitably, that a central bank will look at its results not in terms of how many mistakes it made, but whether its "nonmistakes," if I may put it that way, were at least significantly greater than its mistakes, so that over the longer run, it was a reasonably sensible policy path.

MR. HAMBLEY. The bottom line is that, ultimately, inflation is the responsibility of the central bank, for good or ill, and the central bank probably won't be able to be perfectly successful in keeping it stable.

MR. GREENSPAN. Probably.

MR. HAMBLEY. Inflation will not be perfectly stable, but the central bank is really the only actor that ultimately is responsible for whether there are persistent periods of inflation or deflation, under the kind of monetary system we have now.

MR. GREENSPAN. Yes.

Independence of the Federal Reserve

MR. HAMBLEY. Let me turn to a related concept, and that is the independence of the Federal Reserve. What does it mean for a central bank to be independent? Does it mean it can do whatever it wants to?

MR. GREENSPAN. If you want to use the term in its precise meaning in the English dictionaries, yes. You're either independent or you're not independent, and there, of course, are very significant degrees of independence.

The FOMC is legally independent in the sense that there are no other agencies of government that can override the decisions of the majority of that committee by law. That does not mean, however, that those decisions are not subject to other people's actions. For example, the Congress can change the law, and the degree of independence of the FOMC can be altered. The Congress would have to do that, because, under the existing statutes, there is no means by which the FOMC's policy decisions can be overturned—aside from the courts, and there are cases that obviously can exist. But in our legal system, these are decisions that are final decisions, and they never are capable of being overturned under any circumstances. For example, let's assume that the Federal Reserve Act was established by the Constitution and the Constitution had no means for amendment. Then the Federal Reserve would be truly independent. Short of that, no.

MR. HAMBLEY. It's also subject to a law that states the goals of policy. And it's also subject to operating within legal authorities, such as, for example, what kind of assets it can buy. So there are some legal constraints.

MR. GREENSPAN. But not on the actual policy decisions themselves.

MR. HAMBLEY. Well, no, as long as they're within the authority of the Fed to take them.

MR. GREENSPAN. Correct. Well, I would presume that the Federal Reserve would never make a decision that, in fact, was in violation of that authority. I take that as a given. Obviously, if the Federal Reserve is breaking the law, they ought to put the FOMC in jail or something like that. But that—I accept that as a given. The Federal Reserve will not allow itself to issue some form of directive or some form of monetary policy action that is in basic contradiction of statutes that govern us.

MR. HAMBLEY. One of your former colleagues said that the Fed has a great deal of operational independence but is constrained both by the laws that specify the kinds of things it can do and also by the goals for policy that it's been given. Would you agree with that?

MR. GREENSPAN. Well, it's not clear exactly. This is an interesting issue of interpretation. Give me his statement again, let me take it apart.

MR. HAMBLEY. He said the Fed has a lot of operational independence within the authorities that it's been given to make decisions, but it is also subject to the law that we call the dual mandate or the triple mandate, and that, also, in some sense, is something of a constraint on the discretion of the Fed.

MR. GREENSPAN. I agree with everything except the last statement. The Federal Reserve, when I belonged to the [Federal] Open Market Committee, operated implicitly on the concept not of a dual mandate, but interpreting the Humphrey-Hawkins Act, which essentially stipulated that a necessary condition for long-term, steady employment growth was low inflation or non-inflation. So, within our interpretation of the law, we did not have a dual mandate. You can stipulate in law things that economic policy ought to do, but, if the law violates the laws of economics, it will lose.

MR. HAMBLEY. Even if you interpret this as primarily a price-stability mandate, it would constrain what the Fed could do operationally, from meeting to meeting.

MR. GREENSPAN. Yes, but it doesn't change the issue of independence. The Fed is perfectly capable of taking an independent action that is wrongheaded. That's not what we're talking about. The freedom to be foolish doesn't say anything about the issue of what you're being foolish about.

The Importance of Central Bank Independence

MR. HAMBLEY. It is an article of faith, I think, at least at the central banks I'm aware of, that the independence of the central bank is important, in the sense of having a chance to get the best possible policy outcomes. Why would you say it's important for the Fed to be independent?

MR. GREENSPAN. Well, very much for the same reason that was embodied in the 1913 statute—that monetary policy and money has always been and always will be a critical issue in a democratic society and in the political realm that's associated with it. One can very readily demonstrate that the decisionmaking in the type of federal republic that we have will lean towards a much shorter time frame than is a time frame on which monetary policy optimally needs to function to be effective. As a consequence, if, for example, any particular Federal Reserve Governor or FOMC member could be, at the discretion of one house of the Congress, deciding on policy grounds to rescind the authority of that single member, that would effectively create a far less effective monetary policy.

History tells us that there is a tendency within our political systems towards short-term values being given very significant positioning in the policymaking apparatus relative to longer-term values, and the reason is very simple: It’s virtually impossible to forecast, and, in fact, it is impossible to forecast other than in the context of probabilities. And the longer out the forecast is, the lower the probability of success. Therefore, there is a bias built into the political system, were it in charge of monetary policy, to be very much more short-term oriented than is necessary for an effective policy. That essentially was the reason for the 14-year terms of Governors. In other words, elsewhere in the U.S. government, there are no such things as 14-year terms, with the exception of members of the Supreme Court, and it’s a signal of something. Indeed, my recollection is that the discussion in the formulation of the Federal Reserve Act was essentially a recognition of that fact.

MR. HAMBLEY. The act also says that members of the Board cannot be removed except “for cause,” which is another aspect of what you said.

MR. GREENSPAN. Absolutely. What constitutes “cause” could not explicitly, as I recall it, have anything to do with policy actions themselves.

MR. HAMBLEY. “Cause,” in this context, is committing a crime. You’ve committed a crime, and that’s the kind of thing for which you could be removed from office. But you cannot be removed from office because you didn’t agree on policy with whoever nominated you or whoever confirmed you or whoever might have power over you.

MR. GREENSPAN. I’m not an expert on this, but my recollection is, that’s one of the original provisions within the Federal Reserve Act that has not been tampered with.

MR. HAMBLEY. One thing that made the Fed different from the two central banks that preceded it in the United States was that it didn't have an expiration date in its charter, which would be a kind of protection or an insulation to the organization. It's going to take a little more effort to change a law, if people in the Congress are really unhappy with the central bank, rather than just having a charter expire automatically in 20 years.[19]

MR. GREENSPAN. That's a good point.

MR. HAMBLEY. It's interesting that the people who created the Fed, even so long ago, would have a perception that what this entity was going to be doing needed to have more time than it might be allowed to take if it were more politically connected.

MR. GREENSPAN. There is certainly nothing in the history of this country, since December 1913, which as I can see has changed that concept at all. Human nature has not changed since then.

Culture of the Fed and Its Independence

MR. HAMBLEY. Are there other attributes of the organization that you see as helping the Fed to be as independent as it is within the political setup that exists?

MR. GREENSPAN. I'd say the culture, in the following sense. There was extraordinary pressure on the Federal Reserve during an earlier period, when the chairman of the House Banking Committee called up—I think if I get this right—all the Reserve Bank presidents and Governors to testify. The chairman then noticed that we had a telephone conference prior to that meeting. At that point, we were not showing [releasing to the public] the FOMC's transcripts of those meetings. He wanted to see the transcript of the conference calls, and the reason he did is,

[19] In the Federal Reserve, the 12 District Reserve Banks were chartered for 20 years. The McFadden Act of 1927 granted them permanence. See Meltzer, *A History of the Federal Reserve,* p. 67.

he expected that the Federal Reserve was involved in all sorts of political manipulations as to what should be said and how they would say it.[20] The assumption was that the Congress wanted to know that, and the implication was, that's how the Federal Reserve functioned.

We eventually compromised and had a select group of people listen to the tape of that telephone conference of the FOMC. One member of that group came away from that meeting and said to me, "That was just an extraordinary thing to listen to, and that should be placed in every civics course in high school around the country." We never heard about that issue again.

What that said to me was that people don't realize that the Federal Reserve is not a political organization. I went through 18½ years in close contact with a very large number of people at the Fed. With very rare exceptions, I couldn't tell what political party, if any, any individual policymaking people were affiliated with. I can think of one or two exceptions when the [Federal] Open Market Committee was literally discussing politics and elections and what it may do, and even in that context, it had to do with the technical aspects of what would be going on in the marketplace. It was not a partisan discussion or anything of that nature.

There's a formality in the Federal Reserve that I originally, when I joined the Fed, felt very uncomfortable with. There's a formal way that everyone is called by their titles, not by their first names, and that gives you a certain sense of responsibility.

MR. HAMBLEY. Going back to independence, if the outside world has a better understanding of the way it actually is within the Federal Reserve, can that help the Federal Reserve to be more independent, less subject to outside pressures, because people are better informed and less concerned?

[20] Greenspan (2007), *Age of Turbulence*, pp. 150–152.

MR. GREENSPAN. If people were all rational, absolutely. But I regret that we are dealing with human nature, and my experience with that is that it doesn't work that simply—I wish it did—because of the motives of the people involved. They want something beyond the issue of knowing in detail what is going on. I don't wish to get into this subject matter—I have strong views on it, having lived through it—but the issue of taking as a given what people are saying they want to see and, therefore, once they've seen it, they won't talk about it anymore is alien to the facts of the case.

MR. HAMBLEY. I think we can leave it there. Let me ask you about some other things and how you perceive them contributing to the independence of the Fed. Importantly, the Fed has an independent source of income. It doesn't depend on appropriations from the Congress. It generates its own income, in ordinary times, by seigniorage. It has income. It doesn't have to ask for funds, and so it doesn't have conditions attached to its funds. Rather, it generates its funds, uses what it needs to, and then hands over the rest to the Treasury. It seems to me that that's a very important thing. I think it's also an original part of the Federal Reserve Act, too—

MR. GREENSPAN. It is, yes.

MR. HAMBLEY. —because the Federal Reserve has had the responsibility for issuing the currency. So that might be another example where the creators of the Federal Reserve were rather farsighted. That seems pretty important to me.

Federal Reserve's Prudence in Budgeting

MR. GREENSPAN. But it also shows something else. The Fed publishes, in great detail—aside from what other people are saying—exactly what its balance sheet is, what its income statement is. I know of no financial aspect of the Federal Reserve System as an organization that is not in print. When I wanted to find out what was going on in the Fed, I took a book off the shelf that's a published document.

The problem that is not understood here is that, because there is so little external oversight of what the Fed spends its money on—that, at least, when I was there, and I'm certain it was the case previously and now—there's an extraordinary prudence and responsibility on the part of those who determine what is spent and how, throughout the System, recognizing that there is no other constraint. And since we are dealing with taxpayer money, it is the Federal Reserve's responsibility to make certain that it is not spent in a manner that would be inappropriate by anybody's standards.

I remember innumerable internal discussions about new Reserve Bank buildings. I and others would argue, "Well, now, wait a second, there's an old building that is much less costly. Explain to me why you can't buy it." And then we'd get a long discussion as to why the cost of building the vaults into the old building would be such. Now, that's a good reason. I don't consider that an illegitimate reason.

There was continuous probing to see what expenses are. And it was only under the duress of market competition that the Fed had to make requests to have salaries of people within the Fed raised, because we could not maintain the quality of what the Federal Reserve Act required us to do at the salary levels we were able to pay to professionals. All of the people that I know in the Federal Reserve System are forgoing income of one level or another because of the privilege of working in the institution. It should not be taken advantage of.

MR. HAMBLEY. It is very striking that, in the time that I have worked in the Fed, there has never been any effective oversight of Federal Reserve budgets. There were congressional hearings, usually with the Administrative Governor, about the Federal Reserve's budget.

Representative Steve Neal had these hearings in a subcommittee of the House Banking Committee, but eventually even that stopped.

MR. GREENSPAN. It stopped because it produced nothing.

MR. HAMBLEY. Because they didn't find anything to worry about?

MR. GREENSPAN. Exactly.

MR. HAMBLEY. People learned that the Federal Reserve's budget was just not something you needed to worry about. It would be properly addressed.

MR. GREENSPAN. I have no objection whatsoever to congressional oversight of our actual budget actions. If the Congress can legitimately say—not just in second guessing, but based on a forecast of some form or another—that something is an inappropriate expenditure for the Federal Reserve, I think that's perfectly appropriate. That doesn't mean we have to adhere to the suggestion, but you want information from all parties. We are a democratic society. The Federal Reserve is not some autocratic institution that can do as it sees fit.

Working at the Federal Reserve

MR. HAMBLEY. You talked about the culture of the Fed. Is an aspect of the independence of the Fed that the people who are drawn to it are basically interested in policy—doing policy as well as they can to get the best outcome for everybody—and that they tend to be willing to take risks or be willing to take some heat to do what they think needs to be done to get the best outcome? Is it something about the Federal Reserve that attracts people who are willing to do things that may not be popular?

MR. GREENSPAN. I don't think so. I think that the attraction of coming to work at the Federal Reserve is twofold. One is, if you are drawn to an academic atmosphere where facts, ideas, and the like are the culture of the institution, and, most importantly, that unlike an educational institution, a university or such, you can actually see the decisions made by that institution implemented in the real world, then that's an exciting thing to be associated with. And I would say that if one were to try to infer the amount of forgone income of the Governors and the staff of the Federal Reserve as essentially a contribution to the American taxpayer, it is not a small amount of money, because there's a privilege in working at the Federal Reserve that no other institution can offer.

MR. HAMBLEY. Is it also a sense that, if you make really disastrous policy, the consequences for millions of people could be really serious, and that that makes you really careful?

MR. GREENSPAN. It should make you careful.

Relations with the Executive Branch: Maintaining Independence

MR. HAMBLEY. Another aspect of the Federal Reserve's independence relates to the Executive Branch and the presidency. During your chairmanship, you had regular contacts with the Treasury Secretary or with the CEA and sometimes with Presidents themselves. How did you manage to have those contacts and still manage, at the end of the day, to be independent, to be able to do what you feel you need to do?

MR. GREENSPAN. It's very simple. There's a simple word that has got two letters in it—it's called N-O. And you know that the President, to start right at the top, cannot dictate monetary policy. There's no vehicle that they actually have to do so because of the mandate. Now, they can threaten to have the law changed, and that has happened on numerous occasions; in fact, they did, in 1935.

First of all, let me just say that there's really only one government, and there's really only one set of economic policies that the government should implement. To have the central bank operating on a different assumption and counter to the Treasury Department is a wholly undesirable situation.

Over the years, it's become increasingly evident that the Federal Reserve—even though it is not run by the U.S. Treasury, it is like our sole owner is the United States Treasury [in that] they get all of the funds that we produce. But they're like preferred shareholders with no vote, and there's no common stock.

So, in my 18½ years, I always felt confident in going into the meetings of the group of four that had existed for many years before I was there; the Quadriad is what they called it, which was the Chairman of the Fed, the CEA chairman, the head of the Office of Management and Budget, and the Treasury Secretary. The meetings were essentially to coordinate policy when possible, and it actually worked and was very useful.

Needless to say, I would often have conflicts where one of the members of the Quadriad would be saying, "We think your policies are too loose"—I'm sorry, "too tight" is the usual version. In fact, I don't remember the other one. That was chronic, and I was publicly at odds with the President, George H.W. Bush, on that for several years.

Volcker went through a period when he was being accused of all sorts of things that were just outrageous. So there's no real concern. If you deal with Presidents or senators or congressmen or any of the members within the Administration, the Federal Reserve has got a very simple card, which is, "You can't force us to do anything." That meant that I never felt compromised in talking to the President or to any people in the Congress or anybody else. I know of no instance in which they had an effect on our policies. They could have if they had come up with some ideas that said we were doing it for the wrong reasons and improved it. We would have changed. In 18½ years, that never happened.

MR. HAMBLEY. But still, even if you know that you could say “no” and know that there’s no way, ultimately, for the other people to make you do what you think is wrong or improper, it still takes a certain person to assert that. If the President is going to make speeches denouncing the Chairman of the Fed, or if—

MR. GREENSPAN. In fact, there’s—

MR. HAMBLEY. It did happen?

MR. GREENSPAN. I got accused on many occasions, and I knew that they had very little capability of doing anything about what they were saying despite the fact that they could order a nuclear attack on somebody else.

MR. HAMBLEY. So you were confident in your ability to say “no”?

MR. GREENSPAN. It wasn’t always a show of confidence. It just was a fact that if I stood my ground, they could do nothing.

Serving under Four U.S. Presidents

MR. HAMBLEY. You served as Federal Reserve Chairman under four Presidents, going back to President Reagan. Did you see noticeable differences in the approaches of different Administrations to the Federal Reserve? You’ve already alluded to one Administration’s approach. Take Reagan’s Administration. Once you were installed, do you think that they basically respected what you had to do and gave you latitude to do it and didn’t try and make you do something you didn’t want to do?

MR. GREENSPAN. Certainly that’s true of President Reagan, but some of the people who worked for him tried to get us to do different things. We just said, “No,” and we prevailed.

MR. HAMBLEY. So after a while they stopped?

MR. GREENSPAN. No. They wouldn't do these things in a private room. They were talking in public, so their audience was a little more than the Federal Reserve. And the mere fact that I would say "no" did not stop them, because that's not really what it was all about.

MR. HAMBLEY. You've alluded to the first Bush Administration. They had a number of things they would like you to have done.

MR. GREENSPAN. That's correct. And kept misunderstanding, for purposes of their own, what I was talking about when I was saying, for example, that if fiscal policy is sensible, interest rates will go down. I'm talking about market forces, and I'm saying the Federal Reserve does follow the markets. They took that, or chose to take that, as an agreement that we would lower rates if they put certain fiscal policy in place, which I was very scrupulous never to say. I always said that, as a consequence of what you're doing, such and such should happen, and if it does, we will act, which is not the same thing as saying that if you act, we will act. That was the type of discussion that went on. Aside from that, in my last, I guess, 16 years—no, not quite—let's say, from 1992 to 2006, we had no problems whatsoever with the Administration, either President Clinton or President George W. Bush.

MR. HAMBLEY. So does it seem to you that the Fed was ultimately more independent at the end of your chairmanship than it was when you arrived, in some sense?

MR. GREENSPAN. Oh, yes.

MR. HAMBLEY. In what sense?

MR. GREENSPAN. Well, in the sense that, thanks largely to Bob Rubin and, later, Larry Summers, through those eight years of the Clinton Administration, the issue of the President not commenting on Federal Reserve policy was ingrained not because of what we were saying, but because what people like Rubin and Summers would be telling the President: Don't do that, it's counterproductive. Essentially, don't attack the Fed, it's counterproductive. Eventually, it became self-reinforcing in the fact that, by the time George W. Bush came into office, there was none of that, nor through the years that I served in government when he was President. And I don't see any evidence of it today, as far as I can judge.

MR. HAMBLEY. What I'm getting at is that the independence of the Fed isn't a given. It's not just a matter of laws, it's also a matter of the political culture and, ultimately, of the people in relevant positions making a decision to let you do your job, not comment on it, rather than having some other motivation that overwhelms that. The Fed's independence really isn't a given, is it?

MR. GREENSPAN. No. Well, in a restricted sense it is. It's a legal state, but that legal state is not locked indelibly into the law. The law can be changed, but it has to be changed for that to happen.

MR. HAMBLEY. Right. But even when the laws don't change and nobody is threatening to change them, the culture outside the Fed can be more supportive of letting the Fed do what it judges to be best.

MR. GREENSPAN. I don't think it ultimately affects the decision, but it certainly makes it more comfortable for the people who are involved in the decisionmaking process. On occasions, since it was protocol, I had to go over to give the Secretary of the Treasury advance notice of a change in Federal Reserve discount rates, for example. As I understand it, that was in place well before I was there.

I often had to go across the street and sit down and look the Secretary of the Treasury in the eye and say, "We just raised discount rates," and what came back at me was steely eyes of discontent. And so it's an uncomfortable issue, but it does not in any way affect the policy. And there's another reason for that. It's the fact that the policy is being made by a committee. I never had the capacity to move the FOMC except by persuasion, and were I ever to try to make a deal with the Secretary of the Treasury, which was never my wont, I couldn't implement it, because I couldn't get it past the Committee.

MR. HAMBLEY. Still, you could imagine the Treasury Secretaries calling Board members individually and trying to say, "We really want you to do this."

MR. GREENSPAN. It happens, and it doesn't work. What was very clear to me is that the effectiveness of the statute was extraordinary. It wasn't an issue of negotiating; there was nothing to negotiate. We would just say "no," and they would still think they were going to change people's views. But I don't know of any single case in which they succeeded.

MR. HAMBLEY. Of course, people that weren't on the Board wouldn't know about such things. Were there a fair number of times when an attempt was made to persuade the Board to take a course of action that the Board then refused to take, or did they occur but with decreased frequency over time?

MR. GREENSPAN. Very few.

Central Bank Credibility

MR. HAMBLEY. Let me ask you about the credibility of the central bank. What does it mean to say that a central bank is "credible"?

MR. GREENSPAN. Let me step back a minute. It's not an unambiguous definition, and it's often in the eyes of the beholder. What it usually means is that the central bank will respond sensibly to the state of the marketplace, or that the essential—well remember, "credible" means believable. And that usually refers to the Federal Reserve's outlook and its policy stance and whether, in fact, they really believe what they are saying. But it's one of those fuzzy terms that I have never been able to wrap my hands around and put it into *Webster's Dictionary*.

MR. HAMBLEY. Well, some people say that if a central bank is credible, its policies can be more effective. I'm sure you've heard this line of thought. For example, a credible central bank will be more able to combat inflation at lower cost. In that context, is that true?

MR. GREENSPAN. I think so, in the sense that if the markets believe you're on a certain path and will do what you're saying, they won't fight the Fed. If, however, you are duplicitous, which is the other side of this—"duplicitous" is the opposite of "credible"—if you do things that surprise people often, then no. If you seem to be acting without a broad view of the way the economy functions, that will be a negative. But the word "credible" really is, as I say, in the eyes of a single beholder.

MR. HAMBLEY. But an aspect of it would be, under a given set of circumstances, you have a pretty good idea how the Federal Reserve is going to react, and you're pretty confident that that will be an appropriate kind of reaction.

MR. GREENSPAN. That has a very positive effect in the sense that people who make long-term judgments in the private sector are not likely to veer very significantly from the view that's held within the Federal Reserve System itself. And that's good, not bad.

MR. HAMBLEY. So if you, for example, say that price stability is really important, and it's the responsibility of this organization—the central bank—and if you prove that you think it's important over a period of time, they'll come to be aligned with your views and understand your views and find them credible?

MR. GREENSPAN. Well, I'd say, yes, but you can exaggerate that. In other words, it's a matter of degree. If there's a general presumption that monetary policy can be forecast by people on the outside, and it works in some form or another, then it has some effect. But I'm hesitant to grant it too much.

The fundamental issue of inflation and policy and the like are the real variables, not what's in the heads of somebody who thinks one thing or another. The data do matter, and what actions are taken do matter. You're very unlikely to be able to guide the markets towards where you would like them to be—which is, essentially, one of the things that central banks do—unless they believe that you will back up what you're saying with actions which confirm it.

In other words, if we continuously say we're going to fight inflation and we talk about it all the time, but when it starts to move we don't do anything about it, then the central bank loses credibility. That is a statement that really is universally accurate, and you can infer what credibility means—reverse engineering it, so to speak. You can tell when the Federal Reserve is not credible.

MR. HAMBLEY. So credibility is—

MR. GREENSPAN. It's the absence of noncredibility.

MR. HAMBLEY. Credibility is something you have to earn the old-fashioned way? You have to deliver?

MR. GREENSPAN. Yes. That's a good point, yes. That's a good way of making the point.

Decline of "the M's": De-emphasis of the Monetary Aggregates

MR. HAMBLEY. I want to go back to the relationship between money and output and the ultimate monetary nature of inflation and ask about something that happened during your chairmanship. When you came to the Fed, the Fed was annually naming ranges for defined monetary aggregates. They had stopped doing it for M1, but they were doing it for M2 and M3 and also for something called the "credit aggregate." I believe that was actually required by law.

MR. GREENSPAN. Well, I believe it comes from the Humphrey-Hawkins Act, which specified not the specific ranges.

MR. HAMBLEY. No, but that you would have ranges.

MR. GREENSPAN. That's correct, yes.

MR. HAMBLEY. And that they would be ranges that would support the promotion of maximum employment and stable prices?

MR. GREENSPAN. Yes.

MR. HAMBLEY. As time passed, during the entire 1990s, the Federal Reserve did announce such target ranges and continued to announce them every year, but, in fact, the ranges had less and less importance as an indication of what policy really was. Can you explain what happened that caused this de-emphasis of the monetary aggregates?

MR. GREENSPAN. Remember that when you talk about claims on goods, it is not an unambiguous statement. For example, I said that the convention in the economy is that cash or its equivalent is what is employed in exchange for goods and services, but you can go much beyond that and you can trade not only stock, you can trade baseball teams for other goods as a swap for something. That is directly related to what we call "intermediation," the extent of financial intermediation in the system.

In the very early years, the only intermediary was a bank, and, therefore, it was the issue of the conversion of the assets of business into demand deposits on the part of consumers. That was money. Originally, it was only bank notes, and then deposits began to become a realistic issue. As time went on, the complexity of finance got more and more obvious, and, as a result, the measures that we thought were most closely related to the price level, which were originally currency, then M1, then M2—what was happening was that the definition of what constitutes a transaction balance became vaguer and vaguer and nonspecific. It was originally very clear.

In the early stages it was gold, and that was what you traded, and that's the only thing people would accept. But the means of payment continuously expanded, so that while M1 became the critical issue—and you may recall that the Federal Reserve would report on M1 once a week—and it was the most important statistic that ever came out, and then it soon faded, because as the degree of financial intermediation expanded fairly extensively during the latter part of my tenure, you got to a situation where no single monetary aggregate, no single M6 or M102 or anything like that, would capture what needed to be captured in the original concept. And so we effectively had to abandon it, not because we wanted to, but because the system became too complex to think in terms of a single instrument. It then became sort of, as economists would say, a function of a whole series of aggregates, which is what we discussed in the [Federal] Open Market Committee.

MR. HAMBLEY. If you are required to say you have a particular definition of a monetary aggregate, like M2, then what you just described, I believe, is that that aggregate's velocity is behaving in some way that is not predictable, and together they're not predictive of what you care about. Is that a fair way of saying it?

MR. GREENSPAN. Well, no, because money still matters. It has to matter, because that's all that the Federal Reserve really does. The major problem is not the principle, it's applying the principle to the specifics. And if the structure of finance never changed, we would still be back on M1. But it's changed, and the question is one [of], how do you identify it, and what do you do about it?

As the years went on, the system became more and more complex, and the impact of how prices behaved then got caught up in the issue of, what price are you talking about? Is it product price, is it asset price, is it the value of assets, of income producing properties, or is it the price of commodities or something of that nature? The trouble is, yes, all of the above, and the problem with that is that it is very difficult to formulate a policy in which you are strictly looking at an indicator. It would be wonderful if you could.

We originally had—remember nonborrowed reserves? And then we had M1 and M2, and they were single sorts of things that were working in those days, because you could have a single statistic that represented a complex degree of financial intermediation and, hence, the creation of transaction balances. We no longer can do that, and so it's an anachronism, but the Fed really came to it as an anachronism, because we had to operate in a manner of which there was a statement that came out of the Fed or there were actions coming out of the Fed which were based on a general presumption of the way the system worked, of how the financial system worked. And if we were operating as though we were back in the original, simple banking system, we would have almost no effect on economic activity.

So the question is, what is it that we do? And we ultimately—and I say, regrettably—got to the point where our only alternative was to fix the level of the federal funds rate, with there being a great advantage of having the markets ration credit in an appropriate manner. We had no choice but to fix the federal funds rate. And setting the funds rate, which is what we have done now for a number of years, was instead of having an indicator, such as a measure of the money supply.

Do I think that market efficiency would be better served if we could do it as an indicator of what the actual structure of intermediation was or some summary of intermediation? Yes. But we don't have that choice.

MR. HAMBLEY. At one time, the statute said you have to have ranges for monetary aggregates. At a certain point, I believe because of the reason you said, that law was changed, and those words no longer appeared in the statute. I think it occurred in 2000. Is that your memory—that it was an anachronism to keep doing it, and it had less and less relevance to what you were trying to do, and ultimately it was changed?

MR. GREENSPAN. I've forgotten exactly how. Over the years, it just gradually disappeared.

When you have a statute as we did with the Humphrey-Hawkins Act, it's no different from, for example, in years earlier, there was a goal of unemployment at 3 percent. It didn't work then, but nobody went to jail in violation of the law. So there are laws that the Congress passes which, regrettably, are unimplementable, and nobody tries to implement them.

MR. HAMBLEY. They're statements, not—

MR. GREENSPAN. Exactly right. They don't have the force of law. There's no enforcement mechanism in the act. Whenever you see an act without an enforcement mechanism, it's a different type of bird.

November 30, 2012 (Eighth Day of Interview)

1994 to 1995: Preemptive Strike against Inflation and Subsequent "Soft Landing"

MR. HAMBLEY. You previously alluded to Paul Volcker's achievement in setting the stage for a better performance of the economy over time by bringing down inflation. Sometimes the decisions that the Fed has to make in monetary policy are extremely unpopular and evoke a lot of emotion. Volcker's effort to break the back of inflation and bring inflation down, which was ultimately successful, is an example. Did you have any comparable experiences while you were Chairman?

MR. GREENSPAN. Well, not quite the same as that. We tried to pull off—and I think we did it successfully—what we termed an elusive "soft landing" in monetary policy in 1995. We decided to move preemptively against what we perceived to be growing inflationary pressures emerging in 1993 and in 1994, much to the chagrin of the marketplace.

We started to tighten quite significantly, and we did slow the bubble down. We slowed down what was a nascent stock market bubble so that, as I recall, stock prices didn't change materially during the year we kept tightening. We tightened up to the point where we were fearful we were on the edge of a recession, as always had been the case with Federal Reserve policy. We backed off at just about the right time with respect to the economy, which at that point then flattened out. We did not go into a recession. Regrettably, what we misjudged was how success of that nature would affect stock prices.

As best I can judge, in retrospect, the equilibrium level of the Dow Jones Industrial Average went up significantly, because what we had demonstrated at the Fed was, a 300 basis point increase in the federal funds rate did not materially affect the level of economic activity. And if that was the case, then the presumption of the marketplace—and this is a hypothesis—the judgment of the marketplace is that it had underestimated the power of the expansion boom, and, as a consequence of that, stock prices steadied and then started right up after we stopped tightening.

That was not quite the same type of experience that Volcker had. He was dealing with a very messy economy. Needless to say, to do something terrific when everything is doing well is an easier task. It's only when you're confronted with a real serious problem that you can demonstrably resolve that you can argue that you made a major change. Being sort of a caretaker to a very stable economy is a very pleasant way of running a central bank, but it's not headline-making in that respect.

MR. HAMBLEY. You once gave a speech to the Board staff at the end of the year. Among other things, you thanked the economy for being "extraordinarily well behaved." My original question was about the unpopularity of trying to conduct a preemptive strike that would prevent inflation from rising, and then some further action to undo the damage you had just done. My recollection of that time is that your preemptive strike against a potential rise in inflation was very unpopular, particularly in the Congress.

MR. GREENSPAN. The ideal interest rate for the average congressman is zero, and it would be less than that if we could somehow manage it.

MR. HAMBLEY. Right. But there was a group of people who were very critical, like Senators Paul Sarbanes and Jim Sasser on the Senate Banking Committee and Senator Byron Dorgan. They would say, "We don't see the inflation. Why are you doing this? You must be the Grinch that's trying to steal Christmas." That was probably the most severe criticism of monetary policy during your term as Chairman that I remember.

MR. GREENSPAN. I think that's right. The only problem is, when you can see inflation, it's too late.

MR. HAMBLEY. Yes, I understand, but that was a point they didn't concede. They just thought you were taking away the punch bowl, prematurely ending the party.

MR. GREENSPAN. Well, I'm afraid that was an accurate statement. We were taking away the punch bowl in that respect.

MR. HAMBLEY. Right. But, first of all, this is one of the episodes where you felt that the policy was really quite good: heading off a problem, keeping inflation from becoming a problem, and not having to go through some later policy of severe tightening to put the economy through the wringer because you let inflation get out of control. That's one of the reasons why I'm talking about your avoiding monetary policy mistakes during your term or, as you said in our last interview, having a situation where your nonmistakes outweigh your mistakes. But I think there's some credit to be given to the Fed. Wasn't there another example in the late 1990s, when the economy was expanding strongly and the stock market had been rising for a long time? The Fed did ultimately raise interest rates toward the end of that period.

MR. GREENSPAN. We did.

MR. HAMBLEY. Was that comparable, in terms of people's unhappiness about what you were doing?

MR. GREENSPAN. No. My recollection was, they were much happier in the earlier stages, because by that point, we were really in an extraordinary boom.

I don't recall, but this is an issue of fact. You're asking me what other people had to say about Fed policy. While I can't say that I was uninformed about what the outside world was saying about Fed policy, it was never a real riveting concern on my part. I was more interested in what the staff was telling me than what [the] outside was telling me, because it's very difficult to be in a position of Chairman of the Federal Reserve and expect to get unfiltered comments from the outside world. It's regrettable, but you don't. It is unfiltered, needless to say, from Fed staff. In fact, it's "no holds barred" sometimes.

MR. HAMBLEY. Well, you certainly had a sense of what people were saying, though.

MR. GREENSPAN. You can't avoid that, especially because I have a wife who happens to be a reporter.[21]

MR. HAMBLEY. And she tells you anyway. I would think that would be very useful, too.

MR. GREENSPAN. It was. Oh, indeed, it was.

NAIRU (Non-accelerating Inflation Rate of Unemployment)

MR. HAMBLEY. I want to talk a little bit more about the concept of maximum employment and something called the NAIRU. In the statute that gives the Fed the mandate of maximum employment [and] stable prices, the terms are not defined. But for quite a while, including in the 1990s, people have thought what maximum employment means is the lowest sustainable unemployment rate that you can get and keep over time. And that seemed to be the concept of the natural rate of unemployment, or the NAIRU. Was the natural rate of unemployment, Milton Friedman's concept, important in your thinking about the way the economy functioned? What did it mean to you, and was it a useful concept to you?

MR. GREENSPAN. It's a very useful concept historically, in retrospect. But because it's never observable in real time, nor is it moving slowly necessarily in real time, it has no real practical application for policy, at least as far as I can see. The classic example is, as the

[21] Alan Greenspan's wife, Andrea Mitchell, is a journalist for NBC.

unemployment rate moved down towards 4 percent (in the late 1990s), which by any historical criterion was considered to be very low, we observed that we were not getting the usual signals that occur as you move towards increasingly full employment, which becomes thereafter increasingly unsustainable. We were less interested in what the Bureau of Labor Statistics would come up with each month and said the unemployment rate was rather than what the markets were telling us. The market, as we moved down to 4 percent, was saying there is no pressure here, and, indeed, we went under 4 percent for a short period of time (September through December, 2000)—still no pressure. So, as I say, the NAIRU is a useful concept when you were evaluating what was going on in the world because, at that point, you can judge, retrospectively, what the NAIRU probably was at that time, but you had no way of judging that concurrently when policy was being made.

MR. HAMBLEY. The concept of NAIRU does have maybe two implications that are useful for policy. One is the old economic idea that, ultimately, all resources are scarce, and there are limits to what can be produced on a sustainable basis, given the state of the world. The other one has to do with the idea that there is no permanent tradeoff between inflation and unemployment, that at each point in time there is a certain unemployment rate that is consistent with price stability, and you can't better that on a sustained basis by driving the unemployment rate even lower through policy. Those are useful things to be reminded of, particularly that you just can't overperform what the economy ultimately can do on a sustained basis.

MR. GREENSPAN. Well, no. I certainly agree with what you just said, but I think there's another way of interpreting it. The basic concept that tight labor markets engender higher prices is a generically accurate statement under all conditions. The difficulty is our measurements, with respect to how we determine when various levels of tightness arise.

The ultimate way of looking at it is what the markets are telling you—the labor markets, particularly. You can see the balances of how the degree of slack in the market has some effect or not, and the signals you often get from the labor markets are not always consistent. So one of the big problems you have in employing the issue of what the slack in the economy is at any particular time is that it's very difficult to measure. That slack [in] labor markets, that slack [in] product markets lead to disinflation is factually accurate, but it's sort of like the Humphrey-Hawkins Act. What constitutes that in real time, and knowing it at the time it's occurring, is not the same thing as looking at it retrospectively—20 years after the fact or even one year after the fact.

September 23, 2013 (Ninth Day of Interview)

MR. HAMBLEY. This is the last in a series of interviews that we've done for the Fed's Oral History Project, and I appreciate your having me, Dr. Greenspan.

The Great Moderation and U.S. Monetary Policy

MR. HAMBLEY. Let me begin by asking you about an historical episode which, after the fact, has been called the "Great Moderation." According to a speech that Ben Bernanke gave back in early 2004, when he was a Board member, the Great Moderation referred to a situation in which there had been a substantial decline in the variability of output and inflation in the United States and elsewhere over the previous 20 years or so. Bernanke noted that, during that period, recessions had also become less frequent and less severe. This Great Moderation in the United States was roughly coincident with your chairmanship of the Federal Reserve. Bernanke's view was, and I'm quoting, "Improvements in monetary policy, though certainly not the only factor, have been an important source of the Great Moderation."

Do you feel that improved monetary policy in the United States contributed to the Great Moderation and to the less frequent and severe recessions experienced during that period, or was Bernanke too generous in his assessment?

MR. GREENSPAN. We shall never know. By the way, I'm putting it in the book that's about to be published on October 22.[22] I actually bring the Moderation back to another issue that Ben raised, which is savings. In 1989, when the Berlin Wall fell, there was an extraordinary secondary effect, because when we looked at what East Germany, for example, was actually doing, its productivity levels turned out to be about a third of what they were in West Germany

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[22] Alan Greenspan (2013), *The Map and the Territory: Risk, Human Nature, and the Future of Forecasting* (New York: Penguin Group).

during the preceding number of years. The general consensus had been that, yes, they were less than West Germany, but probably 85 percent [and] so forth.

The various agencies in the United States—the CIA (the Central Intelligence Agency) and the NSA (National Security Agency) and a variety of other organizations—all had views of the relative impact of what was essentially a 40-year experiment in economic cultures. For example, at the end of World War II, both East and West Germany—when the Cold War began—started off with the same language, the same culture, the same history, and essentially the same inclinations, but they were separated into the Soviet system and into the West.

As a consequence, we had as close as you can possibly get to a real live experiment in economics by observing these two different economic systems, because both West and East Germany were essentially flattened. There was a level playing field, so to speak, and as I say, when we opened up the books 40 years later, everyone was startled, especially those who were experts in the field, and the results were very dramatic. The Third World nations—basically, India, Pakistan, and a whole series of third-world nations—which had been theoretically neutral all moved in a direction of markets from their socialist base. Of these, the most important one and the most dramatic one was, of course, China.

China developed, then essentially abandoned, as much as you can, the apparatus of socialism without changing its political structure, and in many respects there's been more rampant capitalism in China since the fall of the Berlin Wall and the emergence of various different endeavors on the part of the Chinese. And the results are extraordinary. I would say, in one sense, you could look at East Germany before and after it came out of the Cold War, and you look at China: You go from the regimes of Mao, which were as highly collectivized as you can imagine—they had already started before, without Deng Xiaoping, for example. It started a move towards blessing some form of wealth.

But it really wasn't until the Soviet Union collapsed that this massive shift occurred in the Third World. The result is very dramatic, in the sense that the productivity in the Third World rose extraordinarily, and what we find now in the so-called new classifications—for example, India, which had been a Fabian socialist society and still was, to a certain extent, in 1990, which was right after the fall of the Berlin Wall, then took on very significant trappings of market capitalism. Now, they didn't do it, strangely enough, as deeply as China did, but enough to make a difference.

So what we have, in the years immediately following the fall of the Berlin Wall, is a huge increase in economic activity in the developing world. The rate of growth was twice that of the developed world for a number of years, from essentially 1989 forward. Because of the fact that none of these nations were consumption prone, they did not consume a high percentage of their incomes, but they also had a distinctive culture.

In China, for example, everyone wore the same suit, everyone was the same, there was no conspicuous consumption such as we'd see in the West, and there was also no financial infrastructure. There's no consumer credit to speak of, there's nothing really that enabled you to have a big consumer society. As a result, the actual level of savings that occurred was dramatic. That is, if you had this big increase in income but very little that could be consumed, it all ended up as savings, and the savings were largely spilled over into the developed world, and that caused global long-term interest rates to start to fall. Not only did they fall, but they were converging.

One of the things I show in my new book is that the variance of long-term interest rates in the developed world compressed until—I've forgotten what years, but the early part of the previous decade (the early 2000s), they got into single digits, and they were all basically locked in. The extent to which monetary policy was reflected in that decline in interest rates and that, basically, more savings oriented and, hence, a more flexible society, is difficult to judge. That it affected domestic monetary policy I can attest to, because you could not have significant policy for the overnight rate, which is essentially what we were directing at the Federal Reserve, when the rest of the market is developing differently.

And so if you have the five-year and two-year notes coming down because of global arbitrage, remember that when I'm saying that they all converged, I'm basically saying that that was a set of arbitrage forces in which U.S. rates were arbitraged with everybody else's rates, and long-term rates were far more sensitive to international competition than to the short-term rates. And we were wondering, why is it that we are raising the short-term rate, and the long-term rate goes down?

MR. HAMBLEY. That was the so-called conundrum?

MR. GREENSPAN. This was the conundrum, whose source is now very clear. And the issue there is that it was a global issue that, yes, monetary policy was better. It was not so much that it was discretionary. In other words, it was not the FOMC sitting around a table and saying, "Let's be thoughtful and do such and such." We were very significantly guided by what was going on in the rest of the interest rate structure for sovereign debt because, yes, we could have forced through a major increase in short-term rates, because the Fed can set the short rates.

I should be more exact about overnight rates. If you project back from the five-year note to the two-year note, and you got, say, 30 basis points—we could have gone to 10 percent for the federal funds rate. It would have been a very unusual looking curve, that sort of thing. And that is clearly an economic analysis that was highly destructive, because they have artificial time preferences interacting in the term structure of interest rates. To have it, in a sense, moving in an unbalanced way will make it very difficult to effectively use savings and the most cutting-edge technologies, which is what savings is supposed to be directed towards.

The bottom line of all of this is that it is clear that monetary policy picked up these changes. Whether it was better or worse I think it's difficult to tell, but it was a realistic policy engendered by the fall of the Berlin Wall. And we would have had to distort the system to prevent the balancing of savings, coming in those very large blocks of funds, and investment, and we chose not to do that for a very good reason. The good reason was that it would have been a highly distortive policy.

MR. HAMBLEY. One aspect of the convergence of long-term rates was a convergence in nominal terms as well as in real terms. But it was also true, was it not, that the trend of inflation had diminished quite noticeably in the United States and elsewhere, and that also contributed to lower long-term interest rates?

MR. GREENSPAN. The reason for that is, basically, the very large increase in economic output in the developing nations. What squashed the inflation rate in the United States was Chinese imports and, in fact, imports from the developing nations. They were pushing their savings here, but they also had a whole chunk of product to ship out from which they were getting income, most of which they were saving.

So you can look at it from both sides of the income statement. Yes, I guess you could call it that. It's the sources and uses of funds, really. The output side is very dramatic, and the rate of growth, as I said, was basically twice that of the developed nations. That stuff had to go somewhere. And, basically, if they're exporting because they can't use it domestically, they can't consume it, they ship it out. And that's what they did.

We had the Asian Tigers in an earlier generation who did exactly that. They basically had the capacity to have low-cost labor, shipping it and producing goods, exports, to the developing world, which ultimately resulted in a major increase in the income of Singapore, Taiwan, Malaysia, and that whole series of so-called Asian Tigers. What I've just described about China is "Asian Tigers II."

So, at the margin, what was causing inflation to go down in the United States was very largely that our labor costs were being pulled down—or the rate of growth of labor costs, I should say. The labor costs are being pulled down, basically, partially because of imports, partly globalization, partly robotics. There's a whole series of other things, but it was all part of a massive international shift that occurs as a consequence of the end of the Cold War.

MR. HAMBLEY. Is that transition complete now?

MR. GREENSPAN. I think so. Go back and look at it in 10 years and see what it is.

MR. HAMBLEY. But these are once-in-a-lifetime kinds of major changes in the world that contributed to better outcomes in the United States.

MR. GREENSPAN. The end of the Cold War was a once-in-a-lifetime event.

Consolidating Chairman Volcker's Gains on Inflation

MR. HAMBLEY. You've said, in earlier interviews, that one thing you wanted to do when you came to the Fed was to consolidate the gains in reducing inflation that had been made under Chairman Volcker. Judged by that criteria, how well did the Fed do while you were Chairman?

MR. GREENSPAN. Well, we did very well, thanks to the end of the Cold War. There's a tendency on our part to believe that monetary policy is a much more potent tool than it is, and that's understandable, because if you look at the various econometric models that have been set up, which were based essentially on Keynes's 1936 treatise, they have a few major levers. One is a liquidity preference function and the others are IS–LM curves and a variety of other things.

It turns out that you can ask very important questions as to whether these econometric models forecast very well. All you need to look at is 2008 and say "No." The pointed issue is, everybody is brought up with the knowledge that if the liquidity preference function is employed with an expansion of the central bank's balance sheet, the model will give you a certain result, but that's because we define it into the structure of the model.

In other words, there's this general view that you increase the money supply and wonderful things happen, or you decrease it and wonderful things happen. It's a far more complex system than that, and we don't yet fully understand all the pieces. For example, in 1994, the FOMC increased the federal funds rate by about 300 basis points from February forward. We sensed that there were inflationary forces building, and we put the crunch on. And, as I recall, we increased the funds rate by 75 basis points at one meeting, which tells you how far we thought we had moved behind the curve. But what we thought at that point was that we had essentially crushed the extraordinary momentum that was being built up the year before, and a bonus was the so-called soft landing, which we had never accomplished before. Now, that conforms exactly to the way the model is set up—that's all it does, and the model would forecast that, but it's missing something else.

What actually happened, and we know it now only in retrospect, is that we did crush the bubble, but the market perceived that if 300 basis points didn't do anything to economic activity, knocking it down, then our previous notion of the equilibrium level of the Dow Jones Industrial Average was too low. And they basically said that if they can get through 300 basis points, the stock market has got a much better longer-term outlook. What I'm saying here is that that is not in any of the models.

MR. HAMBLEY. So did it create an expectation about the future? They observed the reaction of the economy, and said—

MR. GREENSPAN. You can put it in, in retrospect, but it won't repeat. All you see is a single observation of a more generalized phenomenon, and you can adjust the FRB/US model for that one-time event, and it will never come up again. So what I'm saying is that we have a simplistic view that we can act incrementally.

The issue is always, well, you have to crush the markets, and the answer is, unfortunately, "yes." As I put it in the book, if you do not eliminate the euphoria on which the particular buildup has occurred, you will never get rid of the underlying business. For example, we have this general view about the way people respond, and we put it into our models. And so, if you do, you'll find immediately that, if you get an increase in inflationary pressures, all you have to do is continuously raise the federal funds rate until you bring it down.

That is not the way it works. The way it works is that you have an extraordinary phenomenon called "euphoria," which is not as strong as fear as a market generating factor, but it is large, persistent, and takes a long time to work its way through. Herd behavior also works on it. And so if you endeavor to just crush the market, without altering the euphoria, when you take the pressure off, it will pop right back up. As the models are now structured, you can simulate an outlook in which you can eliminate inflationary expectations by incremental tightening.

I see evidence that that is not what happens, that there's a third variable in there that is not mentioned, which is this overall longer-term expectation that we do not know how to model. But, basically, it essentially is saying that, if our models were working well, everyone would have picked up the 2008 crisis. We all missed it. I try to explain in this book why that happens, and, indeed, it's in the FOMC discussions where I, on a couple of occasions back in the dot-com boom, raised the issue of, "Let's be careful of success in what we're doing, because, to the extent that we are successful, we will generate an increased euphoria about the future and create a bubble."

I will put it another way. A necessary condition for the creation of a bubble is that the economy is doing very well. I basically say that the only way to guarantee that there will not be bubbles is to have an unstable, highly inflationary monetary policy. There are no bubbles in North Korea; there weren't any in the Soviet Union. In other words, if you do anything that opens up the euphoria, that is the root of a bubble. And so the question is, how do you avoid that? I remember saying, commenting on a Greenbook forecast, "This is an inconsistent forecast. If this actually happens, this benevolent path, we're running into a bubble that will be uncontrollable, and we won't know how to handle it, and we don't know."

So there's a very fundamental problem with monetary policy in that, if you do too well, as I like to say, no good deed goes unpunished. I didn't put it that way, but very close. I'll show you the quotes if you want. If you go through the transcripts looking for this stuff, you'll find it.

Bubbles, Leverage, and the Importance of Capital

MR. GREENSPAN. That creates a very tricky problem for monetary policy. What I'm basically saying is that my solution to it is: Don't worry about bubbles, worry about the leverage, because bubbles, per se, are not dangerous. The 1987 crash destroyed a lot of wealth, but because the toxic asset at that time, stock, was not funded by debt—and so a lot of people lost equity, but they didn't default, and if you don't have a default, you can't have contagion.

MR. HAMBLEY. Right.

MR. GREENSPAN. This also happened in the dot-com boom. We revised the GDP figures subsequent to the National Bureau's declaration of that period of 2001 being a recession. You look at the data now, it's questionable. There was a collapse in asset values, but it was all in 401(k)'s, pension funds, and the like.

During the housing bubble, toxic mortgage loans were highly leveraged, and the bursting of the bubble created this huge breakdown in the financial structure. Had toxic mortgages been held in, say, the 1990s by pension funds and by 401(k)'s, the system would have behaved just as it did when the stock prices fell. It's not the nature of the instrument that causes the problem, it's basically the degree of leverage that is involved. Leverage, by definition, is debt. Debt is the only thing that can default. If you have adequate equity—as I always like to say, if 10 percent isn't enough, try 20; if 20 isn't enough, try 40—there's a certain level that probably would have sufficed in the mortgage crisis.

In 1970, the New York Stock Exchange passed a rule that enabled broker-dealers to be incorporated, and you still had partnerships, general partnerships. Those people wouldn't lend you a dime overnight. I remember the big fuss on bridge loans. Once broker-dealers started to go to the corporate structure, they dipped into the water a little bit, and bridge loans, which are about as safe as you can imagine any instrument would be, were highly controversial. And the reason, basically, is that you're lending out my money to somebody else, that sort of stuff. So I don't know if this is the case, and I'm probably hypothesizing, but if we still had partnerships, we probably would not have had the type of crisis we had. And, certainly, Lehman would have had significantly more capital than it did. Lehman was down to under 3 percent tangible capital. So was Citi.

MR. HAMBLEY. Yes.

MR. GREENSPAN. So you could have had a lot of problems, and we would have, but I will say that the issue was not the product but the debt structure, which was the cause of what breaks down. The reason we go to sovereign credit when the system breaks down is that the whole classical economic evaluation of why you reach equilibrium in a market economy is the fact that markets work. But if markets don't work, then the whole conceptual structure fails.

In this crisis, money market mutual funds froze the commercial paper market. It wasn't the issue that prices collapsed. There were none, no bids. During the 1930s crash, the call money market got up to over 20 percent, but it stayed open. This time, it shut the markets down for trade credit, it stopped the global movement of goods and services cold, and you had these huge backups in Singapore, all these ships, because they couldn't get paid.

This is a far more complex type of problem that we're running through now. We did have a breakdown in the short money market in 1907 for one day when there were no bids. The market got up into triple-digit interest rates, and for one day there were no bids. The next day, they got the market going. We did not. We basically could not. We got to the point where we have problems in long-term debt.

The classic example is what happened in New York City. The first problems New York City had—which is very much like what we ran into in 2008—were long-term municipal offerings. So they started to offer shorter and shorter and shorter maturities and until they got down to one day. Now, fortunately, at that particular point, the labor unions—which had a big commitment to the system functioning, because that's where they got paid—decided to buy all the municipal securities and put it in their pension funds. That solved the New York City problem.

Remember the Tesobonos in Mexico in 1995? Exactly the same. They started issuing peso-denominated debt with a maturity of five years, seven years. Then the maturities began to get shorter and shorter and shorter. Then they converted to dollar convertibility shorter and shorter and shorter until they couldn't even sell those. I recall vividly. I've forgotten who the finance minister of Mexico was at that time, but we were sitting around a table at the Treasury Department, and I put it to him. It may have been Guillermo Ortíz. I said, "Guillermo, what is it that you need from the United States?" He says, "We need you to guarantee our short-term debt." And I said, "Good luck." But Clinton did that. The Congress said, "No," but he then pulled a questionable constitutional ploy. Do you remember the Exchange Stabilization Fund?

MR. HAMBLEY. Yes.

MR. GREENSPAN. In any event, the issue in those three cases was the same, exactly. They were also the same in Argentina. Argentina went to the dollar as its official currency in its constitution, but it couldn't hold to that policy, because people didn't believe it. And, eventually, Argentina got down to almost zero reserves in its central bank, and even though it was a constitutional requirement, it blew.

Human Nature and Modeling

MR. GREENSPAN. So what I'm trying to get at here is that I think the world out there is not as simple as the little models that we play with, and that is terribly important, which is one of the reasons why monetary policy is an indeterminate skill. Think of how many new articles are written about how money transmission occurs. There are no comparable discussions going on in quantum mechanics, about the particular characteristics of how they interrelate. They always do it the same, and the proof is not a probabilistic proof. There was this big dispute between Einstein and the quantum mechanics, and Einstein said—because quantum mechanics is a probabilistic type of determination—and Einstein says, “I don’t believe God plays dice with the universe.” Do you remember that phrase?

MR. HAMBLEY. Yes.

MR. GREENSPAN. That’s where it comes from. To be sure, there’s a probabilistic nature to quantum mechanics, but its probability is .9999999999998—you know, that sort of thing. The issue in our models is, we can’t even get the signs right in some of those relationships, and the reason is, we’re dealing with a much more complex environment that’s called the human species, and the purpose of this new book of mine is what basically the subtitle of the book is: *Risk, Human Nature, and the Future of Forecasting.*

Well, the first two chapters, really, are human nature, and I got into it in very great detail. I explain why I had views of the way irrational activity behaved before 2008. I said that I was fully aware of the irrationality, but I thought it was random and therefore could not be modeled. I was wrong. I tried to really work my way through the sets of relationships. I got some very high R-squares and *t* values on measures of human nature, and it essentially says that the type of data with which we deal—the GDP, all sorts of prices in the marketplace—are from behavioral economics and not from classical economics.

The thing which really turned me to say “Oh, my God” was that one of these guys had an example of a huge database on the objective probability of problems in a specific surgical procedure. It’s a very common procedure, and they had all sorts of data, and so the guy goes into the office, and he says, “Doctor, what’s the probability that something could go wrong?” The doctor says, “One in 25,000,” which is an objective evaluation of what happened in the real world. But every one of us will walk into that office, and the number has become 1 in 20. We psychologically cannot avoid it. That's the way our responses work.

MR. HAMBLEY. Because it's about us?

MR. GREENSPAN. Yes, it's about us. For example, the fat tails are wholly this phenomenon. For example, if people were wholly rational but not omniscient, they would always be making the correct long-term decision. But there would be volatility around that decision, because they can't forecast the immediate things that are happening. But the distribution is random off those views, and you get a bell curve.

MR. HAMBLEY. Right.

MR. GREENSPAN. Introduce behavioral economics into that mix, substitute that people are far more fearful than they are euphoric, and you can see that all markets go down much faster than they come up. Therefore, if you get an imbalance between fear and euphoria, which you can demonstrate very readily—you just look at charts and prices for copper, zinc, hides, every stock under the sun—it's the same issue, and the result of that is, you will get—

Actually, now, start with a behavioral economist's sense of how human beings behave, which is partly rational. But there's a very significant "animal spirits" component to it, which is not random, and that if you figure that it is biased towards fear, you will end up with a fat tail on the left-hand side. You also get a very modest tail, because, remember, what I'm saying is that it's missing, it's not random. What turns out mathematically is that you get very slight—that both ends are elevated, but this is barely visible. This one is fear, and that's the negative tail. It's the same issue about going into the doctor's office; that's where it comes from. And so what I'm saying is that the models that we are using now don't work, didn't work in 2008, but wholly because of the fact that, fundamentally, they have been based on the presumption of a significant amount of human rationality, and that has to be because irrationality produces nothing.

MR. HAMBLEY. Right.

MR. GREENSPAN. But the presumption that it is random is very clearly false, and you need nothing more than the fear–euphoria theme. There's a lot more to that, but just those two things by themselves will give you this distortion. That distortion is not in the FRB/US macroeconomic model.

That's a long answer to a very short question.

Avoiding Monetary Policy Mistakes

MR. HAMBLEY. During your chairmanship, macroeconomic outcomes were quite good for a long period of time. That is true whether you look at unemployment, which averaged about 5.5 percent during your chairmanship, or at inflation measured by the PCE index, which averaged about 2.6 percent per year. So, essentially, you had a long string of pretty good macro outcomes.

MR. GREENSPAN. Yes, yes.

MR. HAMBLEY. And you've said that other things were happening in the world beyond monetary policy, so that monetary policy really can't take a lot of credit for that good performance.

MR. GREENSPAN. But what we did do is, we made ourselves consistent with the real world.

MR. HAMBLEY. So you avoided the kind of mistakes that could have been made.

MR. GREENSPAN. Correct, yes.

Disadvantages of Successful Monetary Policy; Bubbles and the Importance of Capital

MR. HAMBLEY. Then we get to the late period of your chairmanship where things have really settled down. The Fed would worry about the stock market decline and the 9/11 terrorist attacks. It would worry about the scandals of Enron and WorldCom. But the economy basically weathers them all pretty well. Would it be correct to say that, to the degree that you're pretty successful in that way, you may, given human nature, be storing up potential problems for the future? And I think you also said that maybe the best you can do is to try to make the system well capitalized against shocks. Is this something that we can realistically do? Is that something you do by regulation?

MR. GREENSPAN. Yes.

MR. HAMBLEY. And how do you reach every place where this issue might arise?

MR. GREENSPAN. You don't need to reach every place, you just have to reach financial intermediaries.

MR. HAMBLEY. But that would also include the shadow banking system?

MR. GREENSPAN. Yes.

MR. HAMBLEY. It would be anybody that intermediates, whether or not they're banks?

MR. GREENSPAN. Yes.

MR. HAMBLEY. While you were Chairman of the Fed, you articulated the importance of high capital in connection with the GSEs, Fannie Mae, and Freddie Mac, but is this conclusion particularly a response to what we've experienced in the last few years? Have your eyes opened to this more than before?

MR. GREENSPAN. My brain is open.

MR. HAMBLEY. Your brain is open. So you're learning. But there is something new, recognizing this tendency for there to be an asymmetry between pessimism and euphoria.

MR. GREENSPAN. Oh, actually, I developed this particular sequence of why it is that good monetary policy has its own debits. In other words, I don't know what the solution is, except bubbles are built into human nature. I've always believed that, but I never put it into a formal structure. But now, in my new book, I have, and if bubbles are built into human nature, you can't prevent them. But if the problem is basically that you cannot prevent them, are they necessarily damaging? And the answer is "no." If there is no leverage involved, then a bursting bubble will have no consequences other than to the equity holders who rode the thing up and rode it down. But, unfortunately, financial intermediaries, with rare exceptions, will not get a competitive rate of return unless there is leverage.

In short, if everybody was dealing with equity and debt and no deposits or no banking system, you would have an interesting question. You still could get defaults, obviously, but when you have a banking system, it invariably is a system in which the liabilities of the system are short-term deposits at low interest rates invested in higher-earning, longer-term assets, and that differential makes a financial intermediary profitable. It plays the term structure, and by so doing, it's getting a profit. But, in the process, it's taking interest rate risk.

In the 1989 savings and loan crisis, we saw that in its extreme form where the S&Ls were all heavily invested in 30-year mortgages—financed with overnight funds, essentially—and when short-term interest rates went up, it was just a matter of time before they got crushed. So the question essentially is that you cannot have a financial intermediary. Well, theoretically, you can. The mere issue of diversification will give you a rate of return, but, apparently, it's not at a competitive level enough to engender banks that are willing to keep the maturity of their assets the same as the maturity of the liabilities.

MR. HAMBLEY. If all financial intermediaries were subject to common capital requirements that were much more demanding, couldn't you imagine a financial system that was smaller but nonetheless capable of producing a competitive rate of return for whomever was still in the business?

MR. GREENSPAN. Well, there's an interesting chart in my book. I'll show you the chart if I can find a copy of my book. There it is. This chart here shows equity capital to assets, going back to 1834.[23] And you can see, it's coming down all through the 19th century and into the 20th century. At the same time during this period—let's see, this is 1869. So it's really from this period to here, a very sharp change in the ratio of equity to assets. Yet this is the rate of return on equity which is, you can see, for a century.

MR. HAMBLEY. It's stable.

MR. GREENSPAN. It turned higher here, because we opened up the definition of commercial banks, we integrated them into investment banks. This is section 20 stuff in here. What this is basically saying is that the rate of return on assets moved inversely with the capital ratio, but you couldn't get an algebraic equivalent. And so the question arose about the smaller size of the banking system, the less effectiveness of it. It is conceivable—we can't know for certain—that if it goes down this way, we move this way, it will go up the other way. That is, the competitive markets will set the equity, and the rate of return on assets will adjust to the capital-to-asset ratio. Now, I don't know for certain that that is the case, but I suspect it is.

[23] Greenspan, *The Map and the Territory,* p. 312.

Importance of Finance in the Economy

MR. GREENSPAN. But there's another dilemma in here that I've raised before, which has got to do with the issue of the rising share of finance and insurance in the United States as a share of GDP, which was 2.3 or something like that in 1947. And, more recently, it got up to 8 something. The share of finance and insurance went down for a year in 2009 and then popped right back up. Now, what this is is income originating, which essentially means that the share of GDP that's going to finance has risen dramatically, because the nonfinancial sector has basically sought services from finance.

One hypothesis is that this rise is essential to the growth in the division of labor that was required, and it is not a phenomenon solely to the United States. You see it in China. You see it in most every other major financial center. You can see it in Britain. This raises the obvious question: Is it essential for our standard of living to have a very large share of finance? The answer may very well be "yes," in which case Dodd-Frank is a question about GDP, or it will be, when, in fact, it works its way through the system.

These are dilemmas we don't know the answers to. I don't know, and I can't argue that there's an inexorable uptrend in the degree of finance and insurance, because you would expect that line to be projecting upward all through the pre–World War II period.

MR. HAMBLEY. And it wasn't.

MR. GREENSPAN. Now, the question, the way you put it, it's a very tough question. What would happen if instead of, let's say, requiring tier 1 equity capital, just to give you a number, to be 8 percent, we made it 20 percent? Aside from the number of decibels that you would hear from the banking system, what would happen? Well, it is perfectly credible that the markets would adjust to that, and, yes, we probably would have some lower level of intermediation, but that's probably not all bad, because a lot of the tail end of intermediation we could very readily do without.

I am fascinated by the extent to which the demand for, for example, triple-A tranches of subprime CDOs (collateralized debt obligations) was so extraordinary and then got down to lesser-valued tranches, and everybody said—you know, when Chuck Prince (CEO of Citi) made his very famous remark about music, remember?

MR. HAMBLEY. Dancing.

MR. GREENSPAN. That you have to keep dancing so long as the music is playing. Because Citi didn't want to lose market share.[24] He had it right, except he believed that Citi, because the bids were so horrendously large, that it couldn't disappear overnight. He was wrong, it did. I mean, literally overnight, the whole thing just disappeared.

There's a very huge difficulty here, and I'm not sure what happens if we force back. I notice that Citi, this morning, reported significantly lower sales or revenues. I don't know what happens, but we're going to find out. But there will be all sorts of excuses as to why it has nothing to do with Dodd-Frank. The only forecast I can make with certainty is that, if it turns out the way I suspect it probably will, somebody will say it's got nothing to do with Dodd-Frank. Like they said it had nothing to do with Fannie.

Importance of Capital

MR. HAMBLEY. The regulators seem to have moved to wanting higher genuine capital wherever they can get it.

[24] Editor's note: In July 2007, Charles O. Prince III infamously said, referring to Citi's leveraged lending practices: "When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing." Michiyo Nakamoto and David Wighton (2007), "Citigroup Chief Stays Bullish on Buy-Outs," *Financial Times*, July 9.

MR. GREENSPAN. It's the one thing about Dodd-Frank that is on the right track. But I'd go even further to say, that's all you would need, because every single toxic asset problem that emerged during the crisis was either because our existing fraud statutes were not fully implemented or, more importantly, that the particular losses that have occurred in individual institutions, in every single case, would not have happened if they had adequate capital and adequate collateral for, for example, all the swaps and everything else.

Adequate capital—it's not only the ratio of equity to assets, but it's adequate capital throughout the system, because you have capital in various different places in the system, which matters. I can set up a system, and you can tell me, "Well, this went wrong, this went wrong." And I say, "It can't happen under this condition," and the condition is essentially that, if you cannot default, because there's nothing to default about, you can't have contagion. Because then you have to ask the question, "Well, yes, but the markets are going down." We had the classic case on October 19, 1987, when the market went down by more than a fifth. That left no visible footprint in the GDP.

MR. HAMBLEY. Right.

MR. GREENSPAN. What that tells you is that, if you're looking at the macroeconomic consequences of bubbles, that apparently we now have two major instances: 1987 and 2001.

MR. HAMBLEY. The same was true in the latter case. There was a 30 percent decline in the stock market over several years, but it did not leave a lasting imprint on the GDP.

MR. GREENSPAN. I don't disagree with that. I'm just basically saying that we're just taking a sharp crisis reaction. And I'm saying that nothing happened on September 15, 2008, and the weeks immediately following that could have happened if there was adequate capital, because the system would have stopped short. What was causing the breakdown was the cascading, the domino effect. You don't have dominoes if you don't have debt.

Greenspan on His Term as Chairman

MR. HAMBLEY. How would you like your tenure as Fed Chairman to be remembered?

MR. GREENSPAN. You know something? My attitude is that that is for others to decide. I am so involved with behavioral economics and behavioral conceptions, I don't trust my own judgment. It's not physically possible for anyone to be wholly objective about oneself, and it is part of our nature. There's a very significant bias, no matter how rational we think we are. And I will tell you, sight unseen, I will give you an objective appraisal of my 18½ years as Fed Chairman, and I will guarantee it is biased in a positive direction—not because I wanted to do it that way or was I even aware of doing it that way, but that's the way it will come out, because it's in my equations.

The Impact of International Changes on Monetary Policy

MR. HAMBLEY. You've already alluded to the major geopolitical changes that occurred with the decline of communism. The world economy, after the fall of the Berlin Wall, became much more open and more integrated. There was more trade, there was more capital flows.

MR. GREENSPAN. You couldn't have had higher standards of living without them.

MR. HAMBLEY. Right. And some of the landmarks along the way, besides Berlin, was the reunification of Germany, as you mentioned, the accession of China to the World Trade Organization (WTO).

MR. GREENSPAN. China was already heavily involved internationally. The mere movement institutionally to the WTO—

MR. HAMBLEY. So it wasn't significant, but they were involved?

MR. GREENSPAN. Oh, yes. You could use it as a timing device, because if you remember at the time, 10 years earlier, they couldn't care less. The fact that they wanted to is just really an indication of what had happened in the years immediately preceding them entering the WTO.

MR. HAMBLEY. Another thing that happened was the creation of the euro zone and the euro as a common currency. The world was becoming more tied together. So how did that fact affect monetary policy? You had said monetary policy recognized and accommodated the growth of savings abroad, but were there other ways in which the fact that the world was becoming more open and interdependent affected monetary policy?

MR. GREENSPAN. I think that's a sufficient condition. What I'm saying is that what we were responding to, to a large extent—I don't care what each of the individual members say, but implicitly, in the background of all of that is, I would say to myself, if the five-year note is yielding 5 percent, would I be getting the same roundtable discussion if it were 20 percent? The answer is, of course not. And so, in the FOMC we're talking about, we're going to set the short-term funds rate, but we're looking at the 10-year note. Why? Because there's information there of very crucial importance in what it's telling us. So it's very difficult to make judgments as to how you would answer these questions.

I do know that we're learning a lot, but we've still got too many hypotheses about how the system works, which I find possibly faulty or most likely faulty, but the presumption of it is that it's accurate. I don't know if you remember this, but the issue always came up when, 15, 20 years ago, about the issue of transparency. I, and I think most everybody, sort of agreed with what I was saying—namely, that if people were rational, they would hear what you had to say objectively, and they would balance it in that manner. But, the way I used to put it, if we basically said in a statement, either as a comment or something, or I would say something in a speech: "With all the balance of forces we see, we believe that we are probably wise to keep the funds rate unchanged. But I can see the possibility of some forces coming into play which may force us to raise the funds rate." Period. That's all I would say. The market would open up. I don't know what would have happened if I said, on the other hand, if we did such and such, it would be in the other direction.

So I'm basically saying, the presumption that you are communicating to a lucid, thoughtful market which will absorb the intent of what you're trying to say has no basis in fact of which I am aware of. We saw that several different times. And the first time I saw it, I said, "Oh, my God, wait a second. Did they read what we said?" And the answer is, of course they did. Then why did they react that way? Well, when I saw it the second time, I said, "There's a very good reason for this," and this in part is one of the reasons that's led me to start looking towards the issue of what behavioral economics is all about.

Rationality and Nonrandom Irrationality

MR. GREENSPAN. I always knew it was a relatively new part of economics, but there are certain systematic things that go on which they've identified. The discipline in itself has no model. You cannot assume what type of economic activity will be created in a world in which everybody is governed by animal spirits only. I can be pretty sure that nothing productive happens—no technology, no advances. But that's not the same thing as saying that, given the fundamental aspect of rational human beings, which is the only reason that this society has a standard of living 20 times greater than it was in the beginning of the 19th century and why life expectancy is so much larger. Those are the consequence of rational judgments and rational thought. It's the person who, in London in the latter part of the 19th century, was able to discover what it was about the water that people were drinking which is causing typhoid to be in one place in the city and not in another. And, finally, as a result, basically, of rational judgment, they located what it was and they got rid of it, and the most fundamental rise in life expectancy occurred when that decision of what clean water was and what it wasn't was made. That did more to move average life expectancy by multiple years than every other cause.

MR. HAMBLEY. So you have to presume some rationality, but there is this other big component of irrationality.

MR. GREENSPAN. Well, the issue is essentially simple. If irrationality is random, then you can disregard it, and that is what I did for a long time—not that I didn't believe it didn't exist. I just said that you could successfully, if you're looking at the way the economy works, assume it's random and disregard it. That statement is false. And in this new book of mine, I demonstrate that that's the case.

MR. HAMBLEY. Well, I think we should finish with a plug for your book. I hope it enjoys great sales, and that the people that read it come away with great insights. Thank you very much for speaking with me.