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Program

GUEST OF HONOR

THE HONORABLE ALAN GREENSPAN

Former Chairman
Federal Reserve System

PRESIDING OFFICER

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QUESTIONERS

Jacob A. Frenkel

Vice Chairman, American International Group (AIG)

Abby Joseph Cohen

Managing Director, Goldman, Sachs & Co.

Introductions

R. Glenn Hubbard

GLENN HUBBARD: Good evening everyone. If I could have your attention just a moment. Welcome. It's my pleasure to invite you and welcome you to this 401st meeting of the Economic Club of New York in our 102nd year. I'm Glenn Hubbard, the Chairman of the Club, which we believe is the nation's leading non-partisan forum. Over the club's 102 years we have heard enlightening and enlivening exchanges from more than a thousand guest speakers and world leaders including our distinguished speaker this evening on multiple occasions. I would also like to recognize members of the club's Centennial Society who have taken the steps to insure the long term financial viability of the club. The Business School Dean and me suggest if others of you wanted to help insure financial viability of course we are welcome to listen to you. Our distinguished speaker will speak after dinner during dessert, so I will get up at that point and give him a proper introduction. Please enjoy your dinner. Thank you.

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GLENN HUBBARD: If I could have your attention, we are obviously honored this evening to hear from Alan Greenspan, the former Chair of the Federal Reserve System. I did a little bit of research into the number of times that Alan has appeared before the club. He has addressed the club, by my count, at least 12 times, including 9 times as the Chairman of the Federal Reserve System. He served in that capacity from 1987 to 2006 and was named to that post by four presidents of the United States. He's a New York native and turned to the study of economics at Columbia and at a school further south from Columbia only after studying music at Julliard and touring for a year with the Henry Jerome band as a professional jazz saxophonist and clarinetist. He founded and long headed a blue ribbon New York economic consulting firm,

Townsend Greenspan, served on a number of very major corporate boards, chaired the Council of Economic Advisors under President Ford, and headed the landmark early 1980s National Commission on Social Security Reform and now heads Greenspan Associates.

Now we economists thought at least we understood what he was talking about when he would speak about the federal funds rate. As he and I were speaking over dinner, as somebody who is a textbook author, the world is now more complicated. Imagine, just imagine with me, that if he had had the possibilities before of talking TAF, TSLF, PDCF, QE, TALF, and TARP to discuss, what the possibilities would have been. But seriously, he comes to us tonight at a critical juncture for monetary policy in the country and financial system, and at a time of great debate, to put it mildly, over the stewardship of both over the past decades. After his remarks, as is our custom, two designated club members will ask him questions. Alan, welcome home to New York. The floor is yours.

ALAN GREENSPAN: Thank you Mr. Chairman. I haven't lived in New York for more than 20 years, but it's still my home. You can't be brought up in this type of metropolitan area and lived here for I don't even want to mention how many decades without you getting an extraordinary sense of the vitality of this city, and I'm delighted to be back, and certainly delighted to be back at the Economic Club of New York because the one regret that I had in joining the Federal Reserve System is I had to leave the Vice Chairmanship of this organization before I got elevated, and it seemed incomplete to me in some manner or other.

These are truly perilous times, but history tells us they will pass. This evening I should like to trace a likely future path out of what surely will be the longest and deepest global economic contraction since the 1930s. The disclosure in August 2007 that highly leveraged financial institutions were holding significant quantities of defaulting securitized American subprime mortgages shocked markets and precipitated what became a global solvency crisis. For the year following, weakened banks struggled to respond to investor demands for larger capital cushions, but in the end, bank efforts to fortify their balance sheets fell short and in the wake of the Lehman Brothers default in September 2008, the financial system at the heart of our global economy seized up. Banks fearful of their own solvency all but stopped lending issuance of corporate bonds, commercial paper and a wide variety of other financial products largely ceased. Credit financed economic activity was brought to a virtual standstill.

If there had been any question that we now live in a fully integrated global economic and financial system, the speed and depth of the contraction in global trade in a matter of a few short weeks should have set aside any such doubt. Global manufacturing production in October of last year fell off a cliff, and at least in the United States production continued to fall sharply ever since. For a few months subsequent to the August 2007 disruption, the wholly financial. The world's non-financial sector business balance sheets and cash flows were in as good a shape as I can recall, but the contagion from the crisis in finance took hold in the fall of 2007. Global stock prices peaked at the end of October and then progressively declined for nearly a year into the Lehman crisis. Global losses in publicly traded corporate equities up to that point total $16 trillion, but losses more than doubled in the ten weeks following the Lehman default bringing cumulative global losses to almost $35 trillion, a decline of more than 50% and an effective

doubling in the degree of corporate leverage. Added to that, our trillions of dollars of losses of equity in homes, $4 trillion of which are in the United States alone, and losses of non-listed corporate and unincorporated businesses that could readily bring the aggregate equity loss to well over $40 trillion, a staggering two-thirds of last years global GDP. This combined loss has been critically important in the disabling of global finance because equity capital serves as the support for all corporate and mortgage debt and their derivatives. These assets are the collateral that powers global intermediation, the process that directs a nation's savings into physical productive investment.

I find it useful to think of the world economy's equity capital in the context of the global consolidated balance sheet. All debt and derivatives cancel out leaving intellectual and physical assets at market value on the left hand side of the balance sheet and the market value of equity on the right hand side. Changes in equity values change both sides of the global balance sheet equally. Debt and derivatives are then best seen as a grossing up, reflecting the degree of intermediation or leverage. Failures of intermediation have hobbled many economies over the decades, most conspicuously Japan in the 1990s. But there is arguably a more direct effect of stock prices on economic activity. We tend to think of fluctuations in stock prices in terms of paper profits and losses, somehow not connected to the real world. But the evaporation of the value of those paper claims can have a profoundly deflationary impact on global economic activity.

The household wealth effect on personal consumption expenditures has been extensively documented, but stock prices have a significant impact on private capital investment as well. In

a paper I published in 1959, I related the American ratio of the market value of existing corporate assets, that is stock prices, to the replacement value of those assets. It correlated quite well with machinery orders going back to the 1920s. I recently updated the analysis and was amazed at how well this simple relationship still works. Even tracing the recent sharp fluctuations in real private capital investment. Since 1991, for example, with an R square of .94 a 10% change in stock prices has been associated with a 3% change in real capital expenditures in the same direction.

Such analyses suggest that much of the recent decline in global economic activity can be associated directly and indirectly with declining equity values. Of course, it is not simple to disentangle a complex sequence of cause and effect between change in the market value of assets and economic activity. If stock prices were wholly reflective of changes in economic variables, movements in asset prices could be modeled as endogenous and given little attention. But they are not. A significant part of stock price dynamics is driven by the innate human propensity to intermittently swing between euphoria and fear, which while heavily influenced by real economic events, nonetheless has a partial life of its own. In my experience, such episodes are often not mere forecasts of future business activity, but are an important cause of that activity. Stock prices are governed through most of the business cycle by profit expectations and economic activity. They appear to be increasingly independent of that activity at turning points. That is the meaning of being a leading indicator, the conclusion of most business cycle analysts.

When we look back at this period, I very much suspect that the force that will be seen to have been most instrumental to global economic recovery will be a partial reversal of the $35 trillion

global loss in corporate equity values that has so devastated financial intermediation. A recovery of the equity market driven largely by a receding of fear may well be a seminal turning point of the current crisis. The key issue, of course, is when? Certainly by any historical measure, world stock markets are cheap, but as history also counsels, they could get a lot cheaper before they turn. What is undeniable is that stock market prices today are being suppressed by a degree of fear not experienced since the early 20th century. 1907 and 1932 come to mind.

But history tells us that there is a limit to how deep and for how long fear can paralyze market participants. The pace of economic deterioration cannot persist indefinitely. It is the rate of decline of products, labor and financial markets that generates much of the uncertainty that in turn fuels fear. To an employed person, it is the layoff rate more than the level of unemployment that fosters job insecurity and all the economic responses that go with it. The current pace of deterioration is bound to slow, and with it, there should come a lessening of the level of fear. A measure of the degree of fear corporate bond yield spreads over U.S. treasuries has historically been range bound. They have exhibited consistent upside and downside limits clearly indicated by data that reach back to the 1870s. Today we are at an outer edge, an extreme edge of historic credit risk.

Since the onset of the crisis in August of 2007, the yield spreads on corporate investment grade debt over U.S. treasuries have moved inversely to equity prices. The correlation coefficient between the two has been an almost perfect .98. Insolvency fears have clearly been driving the market values of stocks as well as debt products. U.S. policy actions that have, in effect, substituted dollar sovereign credits for private credits have already eased much of the post-

Lehman credit squeeze, especially for commercial paper and some high grade corporate bond issuance. The U.S. Treasury's troubled asset relief program has been partially successful in recapitalizing banks. Nevertheless, the TARP still has work to do because investors, both depositors and holders of bank debt, apparently now seek a significantly larger capital cushion in banks than they did prior to the current crisis.

Assuaging investor concerns apparently will require not only capital infusion to replenish an estimated hundreds of billions of dollars of unrecorded losses, but an additional buffer that would add a needed several percentage points to the capital asset ratio. Moreover, until risk taking investors freely fund banks, loan officers will remain…of granting new loans. To stabilize the American banking system and restore normal lending, additional TARP funds will be required. Risk spreads have narrowed since the TARP injected significant equity into U.S. banks. However the three month LIBOR overnight index swap spread, another useful measure of market fear of bank insolvency, at a hundred basis points remains many multiples above the precrisis level of 10 basis points.

It is very difficult to judge when, not if, market perceptions of risk will abate sufficiently to encourage greater participation by private lenders in the financial intermediation process. In the interim, the substitution of sovereign for private credit is containing some of the severest consequences of the crisis. As I've noted in the past year, a necessary condition for an end to the financial crisis is a stabilization of the prices of American homes. That will stabilize the value of equity in homes financed with now toxic mortgages and add important clarity to the value of the mortgage backed securities, many troubled, that infest the balance sheets of financial

intermediaries worldwide. More importantly, they will add clarity to the value of bank capital as well. Unfortunately, the prospect of stable home prices remains many months in the future. Until liquidation of the excess inventory of vacant single family homes precedes in earnest, the level at which those prices will stabilize problematic. Many forecasters project a decline in home prices of 10% or more from current levels.

Going forward, I am confident that a combination of an eventual stabilization of home prices and a repair of our global financial system will restore lending, and with the help of rising equity values, lead to economic recovery in the United States and the rest of the world. I hope it is sooner rather than later, but I do not see how we can know. Global output is still in freefall as the world economy endeavors to rid itself of a large unplanned accumulation of inventories, of a vast array of products, not just residential housing, the consequence of the abrupt collapse in aggregate final demand last fall. Working off these inventories will take many more months.

Clearly, the unprecedentedly large fiscal programs currently in…in the United States, China and a growing number of other countries will be a major contributor to how economic forces play out. Much has been written on fiscal multipliers the relative impact of government spending and tax cuts and the income distribution impact of various alternative programs. I have little to add except to say that I agree with Alice Rivlin's suggestions several weeks ago that it is important to separate short term and temporary fiscal stimulus from longer term fiscal initiatives. Moreover, given the Japanese experience of the 1990s, we need to assure that the repair of our financial system precedes the onset of major fiscal stimulus. Unless we are successful at that, in my judgment, the positive impact of a fiscal stimulus will peter out after its scheduled completion.

Remember, the real test of fiscal stimulus is not whether it temporarily expands GTP, but whether it primes the pump for private demand.

I am also convinced that it is not too soon to contemplate and plan the exit strategy from the unsustainable crisis related fiscal and monetary policy programs now under way. We are fortunate in that the administration's and the Federal Reserve's economic policy makers, a very talented team, are sensitive to the possibilities and limits of policy initiatives. The substitution of sovereign for private credit through TARP and the Federal Reserve's massive expansion of its balance sheet have at least the potential, politics willing, of being reversed without a long term drain on the American taxpayer or a major threat of inflation in the future. TARP and Federal Reserve actions are purchases of assets that could end up costing the American taxpayer only a modest fraction of current outstandings once the economy has recovered.

The vast majority of the Federal Reserve balance sheet expansion reflects short term credits that expire relatively quickly, and the monetary consequences of Fed actions can be reversed. TARP operations will take longer to unwind, but at least in principle financial losses could be limited. Fiscal stimulus, by its intent, however, seeks to enhance aggregate demand through massive increases in government deficits. To implement that policy in turn requires finding buyers for large quantities of U.S. Treasury securities. For the moment, the U.S. Treasury is having no difficulty selling its heavy issuance at exceptionally low interest rates. Much of the fiscal deficit is being funded by foreigners who see U.S. government debt as the ultimate safe haven in all this turbulence. The longer American history of honoring our obligations, dating back to Alexander Hamilton, remains a powerful attraction to foreign investors. But there is obviously a limit to the

expansion of U.S. Federal debt. The recent rise of long term interest rates may be signaling market concerns about inflationary pressures. Such pressures will need to be contained or global equity recovery will be at risk.

It would be foolish to disregard how American politics will shape the fiscal and monetary resolution of our current crisis. At the first signs of stabilization and a flattening of the unemployment rate, I presume the Federal Reserve will start to reign in much of the credit extension. However, Congress is likely to strongly object to any tightening of credit prior to full employment being restored. Policy reversals on the fiscal front are nearly certain to meet stiff resistance. New spending programs and tax subsidies rapidly develop constituencies that have a vested interest in maintaining the dollar flow.

Politics will turn on how the crisis and its solution affects the day by day lives of the American people who are beginning to feel the full brunt of the downturn. The fear of job loss is unquestionably their first concern, but close behind is the fear of losing their homes. Stemming foreclosures, which is the interest of both lenders and borrowers is being frustrated by the unremitting fall in home prices. A joint study by the Office of the Controller of the Currency and the Office of Thrift Supervision reported last December that for loans modified in the first quarter of 2008, 55% redefaulted within six months. Accordingly, efforts to reprice and reset mortgage terms need to adjust for the likelihood of further declines in prices possibly by linking the extent of mortgage relief to a home price index. Assistance could be periodically reviewed and adjusted should home prices continue to fall. Admittedly, this is a potentially quite expensive approach, but it should hasten stabilization of the housing and mortgage markets.

Let me now turn to the critical issue of financial market regulation going forward. The extraordinary risk management discipline that developed out of the writings of the University of Chicago's Harry Markowitz in the 1950s produced insights that won several Nobel Prizes in economics. It was widely embraced not only by academia, but also by a large majority of financial professionals and global regulators. But in August 2007, the risk management structure cracked. All of the sophisticated mathematics and computer wizardry essentially rested on one central premise, that enlightened self-interest of owners and managers of financial institutions would lead them to maintain a sufficient buffer against insolvency by actively monitoring and managing their firms capital and risk positions. When in the summer of 2007 that premise failed, I was deeply dismayed. I believe that self-regulation is an essential tool for market effectiveness, a first line of defense, but it is clear that the levels of complexity to which market practitioners at the height of their euphoria carried risk management techniques and risk product design, were too much for even the most sophisticated market players to handle properly and prudently. Accordingly, I see no alternative to a set of heightened federal regulatory rules for banks and other financial institutions.

Even with the breakdown of self-regulation, the financial system would have held together had the second bulwark against crisis, our existing regulatory system, functioned effectively. But under crisis pressure, it too failed. Only a year earlier, the FDIC had noted that "more than 99% of all insured institutions met or exceeded the requirements of the highest regulatory capital standards." Our banks are extensively regulated, and even though for years our largest 10 to 15 banking institutions have had permanently assigned onsite examiners to oversee daily operations, many of these banks still were able to take on toxic assets that brought them to their knees. The

heavily praised UK Financial Services Authority wasn't unable to anticipate and prevent the bank run that threatened Northern Rock. The Basel Committee on Banking Supervision representing regulatory authorities from the world's major financial systems promulgated a set of capital rules that failed to foresee the need that arose in August 2007 for large capital buffers.

The real lesson here appears to be that bank regulators cannot fully or accurately forecast whether, for example, subprime mortgages will turn toxic or whether a particular tranche of a collateralized debt obligation will default, or even if the financial system will seize up, a large fraction of such difficult forecasts will invariably be proved wrong. What, in my experience, supervision and examination can do is set capital requirements and other rules that are preventive and do note require anticipating an uncertain future. Supervision can audit and enforce capital requirements. It can and has put limits or prohibitions on certain types of bank lending. For example, commercial real estate. But it is incumbent on promulgators of new regulations that the regs improve the ability of financial institutions to effectively direct the nation's savings into the most productive capital investments. That is those that enhance living standards.

But much regulation fails that test and is often costly and counterproductive. A new and particularly difficult set of regulatory challenges arises because a financial markets recently proved conclusion that certainly proved conclusion that certain financial institutions have become too big to fail, a description that gives them a highly market distorting special competitive advantage in the pricing of their debt and equities. In any event, we need not rush to reform. Private markets are imposing far greater restraint at the moment than would any of the current sets of new regulatory proposals.

Since the collapse of Lehman Brothers in September, we have been exposed to the most rapid and unremitting set of gloomy statistics that I have ever seen. In recent days, however, some of the data have turned positive, or turned mixed is more exactly how I would characterize it. January retail sales in the United States, for example, surprised on the upside. However, I do not expect full economic stabilization and recovery until American home prices stop declining. Hopefully, in the interim, some of the darkest clouds on the forecast horizon will dissipate. Thank you very much. I look forward to your questions.

GLENN HUBBARD: Our questioners this evening are Abby Joseph Cohen, from Goldman Sachs, and Jacob Frenkel, from AIG and former Governor of the Bank of Israel. Abby, the first question goes to you.

ABBY JOSEPH COHEN: Glenn, thank you very much, and Mr. Greenspan, thank you on behalf of all of the New Yorkers in the room. We welcome you back. We're delighted that you're here. I'm very pleased that you spent so much time this evening talking about the regulatory situation. Clearly, this has been quite a subject including that of the problems of fragmented regulation, of the differences between different nations, and of course, the regulatory competition that has developed. Within the United States we have a set of regulatory institutions that came about following and in the midst of the Great Depression, but we also have international institutions that were created immediately after the Second World War, the World Trade Organization's predecessor, GATT, the United Nations, and of course, the IMF. Can you give us some sense of how you would think about putting together a new framework, not just for U.S. regulation, but for international cooperation, including that important issue of accounting.

ALAN GREENSPAN: Well first let's remember that for many years we essentially allowed the underlying market structure itself to regulate a very complex set of international relationships. I mean, we did have meetings of the G7 and the G20, and we went through a lot of discussions about the interaction that we all needed to engage in, but the truth of the matter is that we were observing a very powerful set of forces, which was the development over the years, especially in the last decade or so, of global integration and global finance, and the regulatory structure, especially internationally, was way behind the curve in the sense that it added very little to a complexity that worked largely because, as I mentioned before, the self-interest of the players, the participants in the marketplace, was such that it created a very strong amount of counterparty surveillance, which is ultimately the basic underlying force which regulation requires. I mean, I remember before I joined the Fed, I was a member of the JP Morgan board for ten years, I'd had to be acutely aware of what the Morgan people knew about their counterparties to whom they loaned money, and it was awesomely detailed. When I left that particular position and went to the Federal Reserve, where we regulated these people, we knew very much less than did the Morgan people or indeed any of the other institutions, and it was very interesting for me to see the extent to which when I arrived on the scene, the Federal Reserve board and the Federal Reserve banks essentially viewed the issue of regulation requiring primarily counterparty surveillance as the first line of defense, and indeed the system worked for a goodly long period of time until it cracked in August of 2007.

I hope that we, in the process, are not going to abandon the extraordinary benefits that globalization has created, not only for the United States, we are a major recipient, but remember that globalization created a major increase in standards of living, especially amongst the

developing world. Hundreds of millions of people benefited from this world where they moved out of abject poverty into lower middle class, enjoyed benefits which only the developed world had previously benefited from. Now what one does in today's context raises a very interesting set of issues. It's not clear to me whether we are going to get a broader IMF or whether the OECD will become a more major player or as a lot of people are talking, the G20 organization of the developed countries and the major developing countries, it will become the basic organization. I don't think we have the capability of doing that. In other words, there is a general belief that somehow we can regulate very complex organizations, and we can't. What we have got to do is to try to make them more efficient, to put far more capital into these organizations. I mean, for a lot of reasons we allowed the capital asset ratios over the years to decline. There is no reason that 10% is the right number, which is what we usually do.

Remember, in the 19th century, we used to have, in the 1830s, capital asset ratios which exceeded 50%, and they didn't get below 20% until the end of the century. I mean, the recent period has been operating on very low capital, and I think the crises that arose could have been avoided. We had a much larger buffer to brunt that, and if we are unable, as I think is going to basically be the case, to micromanage this international system, we will be able to make it function if we have enough capital operating in this system, and here is where I have reluctantly in recent, in the last year or so, concluded that unless there is a regulatory requirement for significantly higher capital than we were used to in the past, or as the quote I gave before about the FDIC was saying in mid-2006, it strikes me that we're going to find that we're going to get more protectionism and a very significant amount of endeavor to pull back in domestically, and what the 1930s told us is that is fundamentally the wrong issues.

So let me just say, basically we shouldn't be relying on the standard procedures when, in fact, in my judgment, raising capital requirements will probably due as much as we need to do to make the system function. I say that with some trepidation because this is such a new world in which we are living, definitive statements about how it's going to work out or what works and what doesn't work may well be premature.

JACOB FRENKEL: Thank you. Let me join Abby in welcoming you again, and I will start with a question that you already touched on, but I still wanted to start with it since it's an easy one. I have a friend from the planet Mars. He is visiting us from time to time.

ALAN GREENSPAN: I've met him once.

JACOB FRENKEL: I know, and in fact, he asked me to ask you that specific question. In the past when he visited you, you took him around and showed him the most important part of your office, which is the balance sheet of the Fed. With great pride you showed him the high quality assets there and the very limited ranged of clientele that have access to these assets. He went home to Mars and he said this is the place. When he came last time, somebody else took him to the very same office and he said this is my balance sheet. He said can't be. The lower is the quality of the asset the more likely it had the chance to make it to the balance sheet, and the range of clientele. So he asked me to ask you about what does it tell you, and you indicated it already and you spoke a little bit of exit strategy, but in a different way. Do we have a new paradigm about the relationship between the Fed and private sector? Will, in the next visit that

he will have, in five years, will he see the same thing or is it likely now that he will see higher probability events of this type?

ALAN GREENSPAN: Jacob, I think that I would answer you friend by saying what we are currently going through is a once in a century type of event. It will pass and we'll go back to earlier versions of it. I remember in a academic speech I gave in Chicago maybe ten years ago in which I was discussing the whole risk management operations of commercial bank, and how essentially they looked at what was then known, and became very well known, the fat tails of the distributions of risk and that they clearly were willing to put up enough capital to absorb, for example, .995 of the risks that were out there, but not that small additional amount because the way they perceived it is to put the capital in that would essentially insure against loss. As a result of that, it would require to hold more moribund capital on the balance sheet of the institution for 99 years, and in a sense, implicitly they were saying that they were willing to risk the default of the institution once in a hundred years. Little did I know that that was not an academic discussion.

But clearly, I think it is very important for us not to generalize on this current period. This is a period in which fear is so dominant and so pervasive throughout the system that if indeed it persisted indefinitely into the future, we would not be able to maintain the degree of division of labor or all of the elements of interaction within the both the financial and non-financial system that creates economic wealth. I believe that the level of fear persistently of this nature into future, we would have a much lower standard of living. But I don't think human beings are built that way. In other words, it is true that we've become very fearful, frightened and withdrawal.

Withdrawal is the fundamental action that people take when they're fearful. But we also observe introspectively and amongst our fellow humans that there's a tendency to adjust to various things, and what history does tell us is that we do adjust, and as far as I'm concerned, we will look back on this period, and certainly your friend from Mars, when he comes back the next time, will basically say what happened? I just hope that his trips are sufficiently extended so he will effectively get that point of view.

ABBY JOSEPH COHEN: Mr. Greenspan, I'd like to go back to the idea of human beings who need to make economic decisions. You referred, in a very interesting way before, to the work by Markowitz and others on the capital asset pricing model, which assumes enlightened self-interest, and indeed, many economic models and financial models are based upon rational expectations. Of course, what we've discovered is that many economic decision makers had expectations that were not rational. How do we come to terms with the idea of the form of regulation we might need when we have so many economic decision makers, including individuals, households, and one might argue, others with much more significant responsibilities who really are not at this point financially literate, who don't understand the risks that they've taken one, whether it's in their borrowing decisions or in their personal balance sheets?

ALAN GREENSPAN: Well if it is wholly random and irrational, there is no way to answer that question. But it is not. The question is never whether individuals act rationally or non-rationally for purposes of analysis, it's whether they act systematically and forecastively. I do think that, having been around for quite a while, while I am appalled at some of the types of things that people did because it was very evident that they were extremely high risk, that's not

new. That is what happens when you get to a state of euphoria. There are innumerable books that are written over the decades explaining these various bubbles and contractions, and what is remarkable is you can reread one event and it seems exactly like the other.

I, the other day, was reading an old book I hadn't seen for quite a while. I was just curious, I picked it up. It was about the 1907 crash. I started reading things like call money rate actually, which was the primary means by which short term transactions occurred, actually froze for 24 hours. There were no bids and the market basically disintegrated. The terminology and the reactions of people to that and what happened to credit financed activity is precisely what happened in the current period, and it is precisely what will happen at the next time in the future that this arises. We have to recognize that what this extraordinary set of circumstances is reflects how we human beings interact both rationally and irrationally, but in most instance it's systematic. The irrational non-systematic is basically noise and averages out and balances it out. What we have to do is to learn how to develop models, which essentially comprehend this type of economic behavior. As I wrote recently, I think that we now know enough, having watched this, to model the euphoria side of the business cycle and the fear side, and the parameters are wholly different.

What we are missing is the third marble, which tells us when we go from one to the other. That is very important because remember, by definition, a financial crisis is a discontinuity in the price of assets over a very short period of time. You tend to forget that we cannot forecast these types of crises because if we could we would arbitrage them away. Remember that the big potential cause of the current problem which we're going through was what? Our balance of

patients deficit, which was going to create a crisis in the currency. It didn't happen. Why? Because everybody expected it to happen and sold the dollar, took positions with respect to various different types of assets, and therefore, the potential imbalances that were going to rupture the economy never happened. What was utterly unexpected was that these triple A tranches and collateralized debt obligations basically backed by subprime American mortgages would turn out to be a misreading of what the potential values were. That came as a shock. Remember when BNP Paribas, which set this whole thing off, was utterly shocked by the fact that they thought they had triple A assets and it turned out not to be the case. That set a whole change, but what's important about that is it was utterly unexpected.

The next crisis which we will have, and we will have one, will be utterly unexpected. I don't know how essentially one resolves that, and I might add, with respect to your earlier question, I think that the notion that there is somehow going to be a Federal Reserve or other agency, international or domestic, who is going to have the capability of fending off systemic risk I think is an illusion. You cannot forecast those types of events. I've sat in on too many meetings in which the purpose was what are the systemic possibilities in the marketplace, and I wouldn't say that it was unthoughtful, but if you saw the transcripts of these meetings, none of them captured what subsequently is going to happen, and the reason is it is in the nature of market breakdowns that they are of necessity, by definition unanticipated and we cannot get around that fact. So what we have to do on the regulatory side is preventive actions, those which essentially put in position the types of regulations which enable the system to be sufficiently flexible to absorb unexpected shocks, but not try to forecast them because were we to do that I think we are going to find ourselves extraordinarily disappointed in the results.

JACOB FRENKEL: Thank you. Since this is the last question, it will probably be maybe a little bit tougher, but by the same token, provide some room for reflection. With the benefit of hindsight, whatever happened seems to have been inevitable. But one can still ask the question of at what stages could decisions have been made that would have led to a less extreme outcome, and what were the kind of decisions that should have been made in these stages? So that's always the benefit of hindsight.

ALAN GREENSPAN: Well it's a very important question because what one tries to do is convert hindsight into foresight. It's not easy, but you try. And sometimes we actually do succeed on occasion. The problem basically is the argument and issue and there's been a big conflict, as you know, amongst economists, on the issue as to whether or not one can control asset bubbles, which is what it's all about. Asset bubbles, as you know far better than I, require that, one, that we've had a long period of tranquil, balanced economic growth, that inflation is low and real interest rates are low. I've always argued, only half facetiously, that the Federal Reserve could always have prevented any type of bubble arising by implementing very ineffective monetary policy, which was inflationary and destructive. There are no bubbles in that type of environment. So one of the great ironies is the very act of succeeding in balancing the economy is you create periodically periods of euphoria, and once the period of euphoria is there it goes too far and reverses.

The question is, is there a way to suppress that? I'm not sure. If somebody could find a way to do it, I would become a strong advocate of such a policy. There has never been, to my knowledge, any historical evidence that that has actually happened. It does happen inside

econometric models. You can demonstrate very easily that if you tighten monetary policy, the econometric model will definitely bring down the rate of asset pressures, depending how your model is constructed. I've been very familiar with that, except that I had to live through the .com bubble boom, and what was clear to me is it didn't work that way. As we put pressure on interest rates, not for the purpose of suppressing the stock market, but in 1994 the Federal Reserve embarked upon a major increase in interest rates. We were aware that there was a…stock market boom emerging the year before, and we did stop the level of the Dow Jones Industrial Average…for a year. The moment we completed our tightening, the market responded. It always struck me at the time that the reason that happened is we had hit the market very hard and the economy held up. It did not go down. It, therefore, meant that the equilibrium price of the Dow Jones Industrial Average was really higher than the market had expected, and so we embarked upon a never increasing increase.

I think that it would be very desirable, if we could find a way from a policy point of view, either monetary or otherwise, to suppress asset bubbles. The trouble is I know of no historic examples in which that has been done, and I'm quite skeptical that it will be done, but if somebody can find a way that makes it work, I will be the most avid supporter of that particular action. I wish those who think it's possible well.

GLENN HUBBARD: Thank you very much. Please join me in thanking Chairman Greenspan and Abby and Jacob for the questions. Thank you all very much for coming to this 402nd meeting. We will reconvene later in March. Thank you again Chairman Greenspan.

(END)