THE MAP AND THE TERRITORY: RISK, HUMAN NATURE, AND THE FUTURE OF FORECASTING

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5:30 PM – 6:30 PM
TUESDAY, JANUARY 14, 2014


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EDITED BY:
ALAN GREENSPAN
PETER J. WALLISON: Thank you all for coming. I’m Peter Wallison, a senior fellow here at the American Enterprise Institute. We are delighted to have as our guest today for this book forum, Dr. Alan Greenspan, to talk about his latest book, “The Map and the Territory.”

I want to mention to you that there will be books for sale afterward and Dr. Greenspan has agreed to sign the book for those who want signed copies. So if you are interested in a signed copy, please wait afterward and get your copy. As long as we can keep him here, he will sign the books.

Books by former government officials, as we all know, are usually filled with self-justification and score settling. But Alan Greenspan’s book, which we’ll discuss this evening, is eloquent of the man. It’s forward-looking, serious, data filled, modest, even self-critical, and concerned solely with improving government policy.

The principal problem he addresses is that economic forecasting has failed to foresee the financial crisis in 2008. “Leading up to the almost unanticipated crisis of September, 2008,” he writes, “macro-modeling unequivocally failed when it was needed most. Much to the chagrin of the economics profession, the Federal Reserve’s highly sophisticated forecasting system did not foresee a recession until the crisis hit.”

This was a pretty serious miss. The question he raises is a big one. What use is economic forecasting and how can it have any credibility if it can’t foresee something as important as the recent financial crisis?

It also works the other way. Economic forecasting has failed to see improvements ahead. In January of 1983, the New York Times said “the typical consensus forecast for 1983 calls for only modest gains in industrial production, an unemployment level that may still be hovering around 10 percent next Christmas, and still further drops in both business investment and exports.”

The full year’s growth in 1983 turned out to be 6.4 percent. Private sector investment rose 8.4 percent. And in 1984, it was 23.5 percent.

Of course, the 2008 financial crisis could be seen as sui generis, the result of factors that were outside the range of things micro-economists usually consider. It was brought on by a huge housing bubble, and bubbles are notoriously difficult to spot when they are occurring.

I could add something here, because there was at least one good reason why economists at the Fed and elsewhere might have missed the dangers building up in the housing market.

For many years before the crash of 2008, Fannie Mae and Freddie Mac had failed to disclose the number of subprime and other low quality mortgages they had acquired after they became subject to the Affordable Housing goals in 1992.
In reporting their acquisitions and sales to data aggregators like Loan Performance, from which most academics and government agencies got their housing data, Fannie and Freddie reported as subprime only those loans that they bought from subprime lenders. They did not report subprime loans to borrowers with FICO scores; that is, credit scores, of 660 or less. Although the bank regulators, including the Fed, had declared that these loans would be subprime no matter what the other characteristic of the loan.

As a result, the top officers of Fannie and Freddie were sued by the SEC in 2011. And also as a result, by 2007, even the Fed economists probably knew about only half of the number of subprime loans that were outstanding. That’s why Ben Bernanke could tell Congress in March of 2007— as the housing market seemed to be coming apart—that “the impact on the broader economy and the financial markets of the problems in the subprime market seemed likely to be contained.”

I suppose it’s too much to hope, but perhaps if analysts, regulators, and academics had had access to the correct numbers – 58 percent of all U.S. mortgages in 2008 were subprime or otherwise low quality – someone might have blown the whistle before the crash became inevitable.

But Alan Greenspan sees a much larger picture. He thinks there are elements of human nature—“animal spirits” he calls them—that are not adequately factored into economic models. Although Keynes used the term animal spirits to refer to what spurs economic activity, Dr. Greenspan think it’s the obverse: fear-driven risk aversion that is insufficiently studied and understood in economics.

If he’s correct, he has made a start on a problem that will occupy economists for many years to come.

But there is much more in this book: the role of regulation in the slow economic recovery, the pressures faced by economic and financial policymakers, the effects of policy activism, the key differences between the collapse of the dot-com bubble in 2000 and the housing bubble in 2008, which are all the result of a life wrestling with the most difficult issues of policy and economics.

Alan Greenspan is the rare person who really needs no introduction. So please join me in offering a warm welcome to our guest today. (Applause.)

ALAN GREENSPAN: I really appreciate that and, indeed, I’m more than willing to cede part of my time back to you to continue. (Laughter.)

It is difficult to overemphasize how big a problem September 15, 2008, caused. It was not just the financial crisis—which may very well have been the greatest financial crisis ever. Clearly, the Great Depression of the 1930s was a far more devastating economic problem. But what is hard to recognize is that what happened in the hours and
days following the Lehman default was a virtual breakdown of the global financial system.

For the first time ever, I believe, the short-term and overnight credit markets in the United States and around the world shut down. It is not just that prices collapsed. That too. But it is that the markets ceased to function. Bids virtually disappeared. Money market mutual funds, within hours of the default, failed or began to fail. The Federal Reserve had to intervene there as it did in the commercial paper market and even in the repo market when investors became wary of all counterparties. Trade credit virtually disappeared, which essentially disabled global trade. Within days, ships were backing up out of Singapore because buyers could not make their payments.

The result was that, for the first time since 1907, overnight markets shut down. But in 1907, it was the call money market, and it shut down for only one day. The bid rate, unmatched by offers, rose to 125 percent, but markets were restored by the next day.

There were no similar problems during the Great Depression or any other time in history of which I am aware. What happened was of such extraordinary significance that it caused a financial crisis with no evident historical precedent.

Bubbles, the root of the 2008 crisis and earlier ones, for reasons I will get to very shortly, have been more prevalent in the most recent period than earlier. The issue is that all bubbles deflate, by definition. But most deflate without debilitating economic consequence.

In 1987 in the United States, for example, that fateful day, October 19, the Dow Jones Industrial average went down 22 percent, the daily record prior and since. I defy anyone to find economic disruption in the GDP figures following that date. I believe there was none.

Similarly, in the dot-com boom, capital losses, as in 1987, were huge. But the people who owned the toxic assets were mainly pension funds, households, and mutual funds—all of whom suffered very large capital losses, but never got to the point where they defaulted on any debt. And it turns out that the only two times in recent history that we experienced real contagion in the financial markets were in late 2008, when as Peter Wallison pointed out, there was a very destructive subprime mortgage crisis, the toxic assets of which, of course, were highly leveraged. And, in 1929, we experienced a leveraged broker loan crisis. The result was contagious defaults.

Contagious defaults by financial institutions, I believe, are both a necessary and a sufficient condition for significant financial and economic contraction. The non-financial parts of economies are rarely highly leveraged; their capital is generally 45 to 50 percent of assets. The nonfinancial sector was not where the problems lay in 2008. And indeed, just prior to the onset of crisis, nonfinancial corporate balance sheets were in good shape. The economic breakdown was initiated by the crashing of the financial system.
I emphasize in *The Map and the Territory* that it was not subprime mortgages alone that caused the crisis. Subprimes were indeed the toxic asset, but if they had been held by mutual funds or in 401Ks, we would not have seen the serial contagion we did. It is not the toxic product that is critical, but the degree of leverage of the holders of the asset. A heavily debt-burdened economy is in danger of serial defaults. In 2008, tangible capital on the part of a lot of the investment banks was around 3 percent of assets. That level of capital can disappear in hours, and it did. And the system imploded.

The question before policymakers is, how do we avoid such breakdowns in the future? As far as I can see, the only way to address such issues is to recognize that euphoria-driven bubbles are an inherent consequence of human nature. Successful financial policy, in my experience, ironically spawns the emergence of bubbles. There was never anything resembling financial euphoria in the old Soviet Union or in today’s North Korea. At the Federal Reserve during my tenure, we often joked that our greatest fear was that policy might be *too* successful. Achieving an underlying stable rate of growth and low inflation has been a necessary and sufficient conditions for the emergence of a bubble. We would conclude with mock seriousness that optimum monetary policy for bubble prevention was to create inflation.

Can bubbles be prevented from rising once markets are in the grip of euphoria? At the Fed, we tried to defuse the nascent dot-com bubble of 1994. We failed. We raised the federal funds rate by 300 basis points and stopped a budding financial boom, as we called bubbles back then – stopped it dead. For the first time, we believed we had achieved a “soft landing”: a tightening of monetary policy that defuses a bubble but that is not strong enough to precipitate a recession. Or so we thought. For as we were patting ourselves on the back, the markets apparently assumed that, because the 300 basis point rise did not break the back of the economy, the economy must be far stronger than investors contemplated. The equilibrium level of the Dow Jones Industrial Average had apparently been significantly elevated, and the market took off shortly after we stopped tightening.

The presumption that monetary policy can incrementally defuse a bubble, in my judgment, is true only within the workings of an econometric model which are so mandated by the model’s construction. All other outcomes are defined away.

So how can we avoid the type of crisis that occurred in 2008? Serial defaults require the existence of debt, by definition. However, if we require that financial institutions hold a significant amount of contingent convertible debt (co-co bonds) that will automatically become equity under pre-determined crisis conditions, there may be a major loss of capital as a bubble deflates, but no serial defaults.

To be sure, contingent convertible bonds, on issuance, may require a 200 or 300 basis points premium over straight debentures. But they measure the true cost of such risk if the alternative is a taxpayer bailout. In *The Map and the Territory*, I discuss why a significant increase in regulatory capital ratios, whether through pure equity or co-co bonds, need not cause the rate of return on equity to decline. Over the course of a hundred years following the Civil War, there was a significant decline in the equity-to-
assets ratio of banks in the United States, but also a proportionate decline in the ratio of net income to assets. Thus, net income per dollar of equity remained in the range of 5 to 10 percent over that century. Markets adjusted. If we were to raise capital requirements now, it is not too farfetched to believe that the net income-to-equity ratios would not change importantly as the net income-to-assets ratio rose.

In *The Map and the Territory*, I derive many equations that assess the impact of animal spirits on economic and financial activity. I sought particularly to determine how animal spirits leave their imprint on the extensive published body of market transactions.

How, for example, can we separate, statistically, rational decisions from biased intuitions that impact the economy and especially finance? Defining the dividing line between what can be described as rational and non-rational has been, and will continue to be, the subject of large areas of disagreement. To better understand this complex issue, I have chosen a small but important segment of the economy—stock prices—that reflects the broad interaction between rationality and animal spirits. Stock prices are illustrative, if not necessarily representative, of the marketplace as a whole.

I assume that, over the past six decades, stock market investing, like all economic decisions, has been the result of people at root acting in their long-term self-interest, but with a significant part of human action being biased by deep-seated spirits. If, for example, we wake up in the morning and learn that stock price futures have fallen sharply, we are emotionally driven to relieve the anxiety of observing our net worth evaporate, and often sell at, or close to, a stock market bottom. This is a fear-based systematic bias that, more than any other, creates market behavior that can be shown to be out of sync with our objectives of maximum standards of living. Fear has biased our rational judgment.

A second illustrative, though hypothetical, example is the case where human emotions and animal spirits play no role in economic outcomes. I choose an example where a person’s daily income depends on the sum of a toss of one hundred numbered six-sided unbiased dice. The outcome of any toss must range between 100 and 1200. As much as the dice-thrower may wish, emotions and wishes cannot affect the outcome.

In the first example, where fear induces selling, animal spirits have a large role in determining economic outcomes. In the second example, they have none. Classical economic models, for example, either explicitly or implicitly assume that human actions are firmly rooted in rationality, or at least that, when humans act irrationally, those actions are random and hence have no lasting impact on economic outcomes. That is a view I held until the 2008 crisis induced me to question its generality. In *The Map and the Territory*, I demonstrate that animal spirits are not random, but in most instances, systematic.

It is certainly the case that important aspects of our economies require rationality to gain traction. For example, long-term factors driving stock prices, especially output per hour, are necessarily a product of reason. As I note in the book, the insights leading to the
invention of the steam engine and telegraph, and the discovery of atomic energy, for example, could not have arisen from irrational musings. A significant part of stock price behavior—long term growth in particular—is demonstrably rational—that is, it reflects accurate observations of reality. But as I also note, short-term stock price forecasting has proven extremely difficult. Stock price movements, other than those based on longer-term productivity growth, however, appear to exhibit little in the way of systematic behavior.

I would thus expect actual stock price movements, stripped of such long-term rational growth components, would reflect a combination of short-term rational decision making interlaced with a large dollop of animal spirits behavior. I first trend-adjusted the daily stock price change for the 15,844 days by subtracting a fixed uptrend of 0.028% each day (covering the years 1951 to 2013). Including daily stock price changes since 1951, that residual series traces a bell curve where the x-axis is the trend-adjusted daily percentage stock price change (in incremental buckets), and the y-axis is the number of market days in the sample that fall in each specified bucket. I then calculated a normal distribution whose peak value (smoothed) and mean (zero) were set to match those of the distribution of the sample of stock price changes. The results are plotted in Exhibit 1.

In short, human decision-making as represented by our near 16,000 observation sample has characteristics quite similar to a hypothetical normal distribution with a mean and peak similar to the actual sample distribution. This implies that the distribution of actual trend-adjusted price changes and the hypothetical normal distribution of price changes that would emerge if all stock price changes were random, are heavily overlapping, implying that most human behavior (syllogistic and intuitive) is rational. There are, however, some important differences.

For example, trend-adjusted daily price changes of more than 1.2 percent, both positive and negative, display a persistent tendency to be far more common than observations of that magnitude in a “normal distribution.” It is the result of the herding instinct (that is, following the crowd), a response of spirit-driven market participants who demonstrably tend to exaggerate stock price movements, especially large movements, in either direction. But the data also portray the asymmetric bias of fear being more powerful than euphoria. The asymmetry is particularly evident in the fact that daily losses of 5 percent or more significantly outnumber daily gains of 5 percent or more (22 versus 16) over a 63-year period of daily price changes.

But what I find most intriguing about these data is that they convey a pronounced increase, since the mid-1960s, in the proportion of stock price decisions implicitly driven by animal spirits, as suggested by an ever widening standard deviation of the 63 separate annual sample distributions through time. A five-year centered moving average of those 63 annual observations is shown in Exhibit 2.\(^1\) The sample data exhibit a pronounced shift of daily price change to ever larger percentage increases—in other words, they exhibit increasingly fattened tails. The greater the standard deviation, presumably the

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\(^1\) Because each year’s observations include approximately 250 observations and are thus subject to wide sampling error, I chose the five-year average to infer the trend.
larger the proportion of economic outcomes determined by animal spirits because the more decision-making that is detached from reality, the more likely it is to be infected by spirits—euphoria-driven bubbles followed by their fear-driven collapse.

But as the standard deviation of stock price changes increases from decade to decade, bubbles have become more common. The implication is that the impact of animal spirits as a driver of economic outcomes is patently rising relative to the prevalence of rational decisions. And presumably that is the reason we are getting more closely spaced bubbles in recent years.

MR. WALLISON: Thank you, Alan. (Applause.)

Well, we are extraordinarily lucky to have a panel made up of people who are about as well qualified to talk about the book and about the Fed and about policy as we’ve ever had. Our first panelist is Martin Neil Baily from Brookings Institution, who earned his Ph.D. in economics at MIT in 1972, became a senior fellow at the Brookings Institution in 1979 and a professor of economics at the University of Maryland in 1989. In 1999 — he has a 10-year method here — but in — and we wonder what you’ll be doing in 2009, but in 1999, he became chairman of the president – President Clinton’s Council of Economic Advisors. Now, he holds the Bernard L. Schwartz chair in economic policy development at Brookings. Martin.

MARTIN NEIL BAILY: Thank you very much, Peter. It’s a great privilege to discuss Alan’s book here today at AEI. I am very honored to call Alan Greenspan a friend, one who has given me help and insight over many years. Among his many strengths, Alan has amazing instincts about what’s going on in the economy, which are built on his extraordinary ability to assess and analyze data.

I’ve learned very much from Alan. Thank you.

This is an exciting book that I think will stimulate discussion and debate among policymakers and research among academics. It covers a wide range of issues and its clear writing and argumentation bring complex issue together in an understandable form. This is a serious and original book.

Let me talk about two things that I especially like. There’re lots of things in this book and I can’t talk about all of them, but there are two that I especially like. I liked very much the discussion of the ways in which markets can deviate from simple rationality as participants get caught up in either euphoria or fear. Alan discusses the idea of animal spirits and that’s a concept that gets nine citations in the index to this book. Bringing behavioral economics into macro-policy discussions is long overdue and this book makes a case for the importance of behavioral decision-making.

Boom-bust cycle of the past 10 years reflects a period of unjustified euphoria when the risk premium was too low relative to the underlying risks and since a period of
gloom and pessimism that’s occurred in the painfully slow recovery – pessimism that has become to some extent a self-fulfilling prophecy.

I enjoyed the discussion that we heard today of fat tails in distribution, which is something that I think we’ve all learned to appreciate.

The next issue that I liked a great deal was the discussion of the importance of competition and its role in productivity. I spent many years studying productivity in the United States and in many other countries, while working with the McKinsey Global Institute in the 1990s, and indeed, I continue to work with them on these and other issues.

One of the important conclusions we reached in those studies is that a low level of competition in a country or in a particular industry in a country does not just mean higher prices in the way that standard textbooks or the Marshallian analysis would suggest. It also results in weakness in productivity and often a lack of innovation. Competition’s also important for fairness. Competing companies are forced to be customer-centric.

I could go on and talk about a lot of other things that I liked so much about this book, but as a discussant you’re paid in the sense – not that I’m paid, you understand, but you’re expected to raise some criticism, so I’m going to talk about some things where I may not be in full agreement with what Alan said.

One of the key arguments in this book is that it’s impossible to forecast the economy or to forecast whether or not the economy faces an unsustainable bubble in asset prices. I agree fully with Alan on the difficulty of forecasting the future path of the economy. As Pete had said earlier, anyone who’s followed the professional forecasters in the last few years can attest to their errors. Few if any foresaw the severity of the recession or how slow the recovery has turned out to be.

But I’d like to make a distinction here. I think there are periods where even though you can’t exactly forecast in terms of stating an event and a time, you can say that clearly there’s some problem or some issue that has emerged that’s the potential to trigger economic instability. And I think the housing bubble that occurred in this century was such a time.

Again, it was impossible to know exactly when the bubble would burst or how large the decline in house prices would be, but the signs of impending trouble, I think, were pretty clear. The growth of the economy had also become overdependent on residential construction and the spending on appliances and so on that goes with it. Banks had become overinvested in risky mortgages and mortgage-backed securities. And the origination process was broken as lightly regulated non-bank institutions and brokers undermined reasonable lending standards.

Government housing policy and the GSEs contributed to the problem, of course, as I don’t need to remind anyone here at AEI. While the timing and the magnitude of the
crash was not forecastable, but the likelihood of an eventual and severe crash became higher and higher, and that in a sense was predictable.

Now, what about policy in response to that? I think we should look at policy generally. I don’t think this is just an issue around the Fed. Some have criticized the Fed specifically for the interest rate policies that it followed. You know, maybe with the benefit of hindsight, we could have done – the Fed could have done something a little differently. But I don’t – I don’t put much stock in that. I think based on the information that they had at the time, the Fed’s interest rate policy was really quite reasonable. They were trying to get the economy going after the 2001 recession. And I don’t – you know, I don’t think – I don’t follow – I don’t agree with, if you like, the Taylor analysis that really the whole problem was that they moved away from the Taylor rule.

What I think more could have been done on was in macro-prudential policies to tighten bank-lending standards, rein in the state regulated non-banks, the CDO machine, and provide warnings of overleveraged speculation in real estate. In this regard, I think Alan deserves credit for his forceful efforts to restrain the GSEs, which actually did have some impact. Things would have been worse had he not done that. But I think among policymakers generally, and I would include the Fed in this, there was too much faith in the ability of private sector financial markets to regulate their own behavior. In fact, company managers put at excessive risk large amounts of their own money, their shareholders’ money, and this ultimately threatened the whole financial system.

My next sort of deviation, if you like, from Alan’s view is that I’m definitely a little more Keynesian than he is, which is not hard I think. I’m not a slavish follower of Keynes by any means, but I think the dynamic interaction of declining income, declining consumption, falling investment, inventory adjustment, and employment loss that Keynes described looks a lot like a correct description of what happened when the Great Recession hit.

Now, during most of the – during the postwar business cycles from the ’50s to the 1980s, those recessions were quickly followed by strong recoveries. In fact, the deeper the recession, the stronger was the rebound. But as Keynes himself pointed out, he was a product of the Great Depression. And he described an economy that can actually get stuck in the low-income trap. Monetary policies rendered ineffective because of a liquidity trap and business investment remains weak because of pessimistic expectations of future growth and if you like, a lack of animal spirits. That description of chronic weakness in demand and growth matches the experience of the U.S. economy since the recession ended.

The U.S. economy, in my view, has become stuck in a low growth trap. We still have a lot to learn about macroeconomics and the modern economy. Why have some of the cyclical patterns changed? Nevertheless, I think there’re some obvious clues to help explain why we’ve had such a slow recovery since the Great Recession, problems in the financial sector which contributed to the recession and there still remains an
unwillingness to lend today, which is partly caused by the fact that regulators are looking over the shoulders of the bankers all the time.

The global character of the recession has contributed to its longevity, especially the problems in Europe, and housing wealth, which was sort of a bedrock for middle class families and it has only partly recovered.

My next point is that Alan is very critical of the Obama stimulus package. Now, given my Keynesian predilections, I guess I should be defending that package, although that’s actually a tough assignment. It was badly designed and its impact was way overestimated. However, I will discover – excuse me – I will defend the policy to this extent. The combination of the stimulus package and the automatic stabilizers did provide a substantial cushion to lower and middle income households, protecting their living standards and sustaining consumption and aggregate demand. There’s some recent data from the CBO that indicates the magnitude of that.

About half the stimulus package was temporary tax cuts to support disposable income and I think that was the right thing to do.

Alan expresses deep concern about the dangers of the expansion of entitlements and the political problems of dealing with them. And I agree with him on that. By the way, Social Security, while it is a continued problem, is a much smaller problem because of the policies proposed by the Greenspan Commission in the 1980s that were then enacted.

Medicare, however, has had no Greenspan Commission and has been out of control for many years and so, by the way, have employer-based tax subsidizes to private insurance. Medical spending threatens budget’s stability. Two minutes – goodness, I’ll try. But – and growth in the long run, and that is something that has to be dealt with. We have had a slower growth of medical costs recently, but not enough to put us out of trouble.

Now, in Alan’s book, he says that the persistence of budget deficits is one of the main reasons why we’ve had weakness in non-residential fixed investment and consequently why the recovery is so slow. And he’s got a very powerful regression that he reports in exhibit 7.3 in the book to try to support that. And I do take that evidence very seriously, but I nevertheless resist the finding. The behavior of interest – because of the behavior of interest rates. If deficits are crowding out private investment, then I would expect to see high interest rates in response. And in fact, interest rates have been very low.

Alan takes that issue on, arguing that the crowding out has to do with a large spread between short and the long rates. But I myself do not find that spread particularly surprising, particularly because monetary policy has held the federal funds rate so close to zero for a period of years. In fact, I’ve been puzzled how low the interest rates on 10 and 30-year bonds have been, at least until we heard talk of tapering.
I am, however, more sympathetic to the argument that uncertainty over taxes and regulation is holding back some investments. So I support that view. I’d like to see policy changes in that area, including in corporate taxes.

Now – I’m really done, so I think I’m going to be close. Alan talks about financial regulation a lot in this book and I’m up to my ears in financial regulation at the moment. I’m not going to get into that in great detail. He’s very critical of Dodd-Frank. And I have some criticisms, too, of Dodd-Frank, although I support it probably more than he does.

I share his view that the most important thing is to increase capital requirements, and that has been done – capital levels are much higher – and so I think that’s something – maybe they haven’t reached the level that Alan says they should, but I think they’ve reached substantially higher. And the financial sector is in better shape than it was when it went into this financial crisis that we’re coming through.

One area I disagree with Alan a little bit is I do think it’s important to use risk-weighted measures to set capital requirements. If you don’t, you create an incentive for institutions to hold riskier assets in order to push up their profits and cover the cost of capital.

To conclude, I want to return to praising this terrific book. Alan is an extraordinary person with a range of talents. Who would have thought the maestro of monetary policy would also be such a talented musician, as well as having a deep knowledge of history and of many other areas? This book is part memoir and the stories are fascinating. It’s a great education for all who read it and an important work of economics. Thank you. (Applause.)

MR. WALLISON: Thank you, Martin. Thank you. Alan will have an opportunity to respond to your comments and Alex’s.

Let me just introduce Alex for a moment. Alex is a resident fellow – Alex Pollock – at the American Enterprise Institute, where he focuses on financial policy issues, including financial cycles, GSEs, the Federal Reserve, finance, banking, financial crises, and general good humor. (Laughter.)

He is a graduate of Williams College, the University of Chicago, and Princeton University. Before joining AEI, he was the president and chief executive officer of the Federal Home Loan Bank of Chicago from 1991 to 2004.

Alex?

ALEX J. POLLOCK: Thank you, Peter. And thank you, Dr. Greenspan, for having written such a provocative and interesting book and adding interesting comments tonight. I liked the graphs. On the probability distributions, I hope in your volume – in your volume 2.0, it will have some on the returns to real estate, which I imagine have
some – I know have some remarkable tails to them since real estate tends to be at the bottom of the worst financial crises and collapses. And real estate is also the most highly levered of all sectors and therefore worthy of study.

On the issue of fat tails and negative tail risk in general, I often think of the saying of one of my mentors, an old banker, which was, “when it gets bad, it will be worse than you think.” And that’s true. It’s funny. No matter how much we try to estimate how bad it will, it seems to be worse than we think.

Well, this inability to forecast how bad it will be and when it will be so bad, as Martin said, brings me to a question which I think is key to this book and to the whole topic. Ladies and gentlemen, there is a Nobel Prize in economic science. But in spite of such plausible economic arguments as Martin just made, or maybe because of the fact there’re competing plausible economic arguments, do you believe that macroeconomics is a science? I don’t. Do you believe macroeconomics can become a science? I don’t. And “The Map and the Territory” provides strong support for such a highly skeptical view of macro and mathematical economics.

If this be right, another question necessarily arises. What is the knowledge or expertise which gives legitimacy to the substantial power and authority of fiat currency issuing central banks, of which the Fed is by far the most important? As you’ll recall the original Woodrow Wilsonian theory on – or doctrine for rule by administrative bureaucracies was that they were experts with special knowledge, which should not be interfered with by mere elected representatives of the people.

Now, I know this has simply played those doctrines in the republic of guardians that they should rule because they have superior knowledge. But as this book suggests, what if we don’t believe there was any such superior knowledge in the administrative bureaucracies, whether they’re bank regulators or central bankers or anybody else? How do we then fashion such institutions?

Another point is the Dodd-Frank Act, already mentioned, has given us a new term, systemically important financial institution or SIFI. It’s apparent that of all the financial institutions in the world, the Federal Reserve has by far the greatest capacity to create systemic risk for everybody else by its command of the world’s principal currency. But the Fed is without doubt the biggest SIFI of them all.

But if we think this SIFI is not governed by special knowledge or superior knowledge, then the question arises: Quis custodiet ipsos custodes? As you know, that means who will guard the guardians? This ancient question of Juvenal’s, combined with Dr. Greenspan’s book, calls, in my view, seriously into question a doctrine supported by so many economists that the Fed should be independent.

Now, what I like most about this intriguing book is that it’s so productive of profound and profoundly important questions. Here’s a central one. Before 2007, many central bankers in the U.S. and around the world managed to convince themselves that
they had created a new era, the great moderation. Students of bubbles know that the term “New Era” is one of the greatest indicators of danger. But what the central bankers actually presided over, as we now know, was the era of great bubbles. First, the great overpaying for tech stocks, then the great leveraging of U.S. real estate, of course also the great leveraging of many other countries’ real estate, and at the same time the great sovereign debt mistake.

Now, the book says, central banks have increasingly been confronted by the prospect that their success in achieving stable prices has laid the groundwork for asset bubbles. Indeed, it seems to be so, and Dr. Greenspan mentioned this in his opening comments. These were unintended consequences of a striking variety to be sure.

The book also discusses, and Peter Wallison has already quoted this, so I won’t do it again, about the failure of the very impressive models of the Federal Reserve staff and also that of the International Monetary Fund leading up to, as the book says, the unanticipated crisis of September, 2008. And it goes on to say macro-modeling unequivocally failed when it was needed most, much to the chagrin of the economics profession.

Now, I want to say why is this that the forecasting tends to fail when we need it most. I don’t think it fails so much in normal, stable times. The problem is it fails at the times of the big changes, the unanticipated changes, which by definition no one is anticipating.

The reason they fail is most assuredly not for lack of intelligence, talent, academic training, effort, or good intentions. What then? Let’s leave that essential question hanging for a moment and consider the reactions to the uncomfortable forecasting experience discussed in the book, which says, quote, “having been mugged too often by reality, we forecasters appropriately express less confidence. Considering the vagaries of human nature, forecasting will always be something of a coin toss.” This seems to me to be true, although I will point out that with tossing a fair coin, we know the odds, but with forecasting the financial future, we don’t even know the odds. That's because we’re dealing with uncertainty, not mere risk.

Ben Bernanke, as recently reflected, quote, “if the experience of the past few years teaches us anything, it is that we should be cautious in our forecasts.” Unquote. But again, why can’t the forecasts get better? Just think of all the computing power the unsuccessful models had at their disposal and all the dozens or scores of Ph.D. economists, well trained and highly intelligent, who were working on them.

Part of the answer must be – and this has been discussed – the unknowable future creativity, which creates discontinuous behavior. The human mind seems to be quite incapable of imagining the innovations and the novelties over long periods of time, which will – which will occur.
Now, these innovations are creators of long-term growth, but they also create uncertainty and surprises, good and bad. This makes me think of that great economic thinker, Joseph Schumpeter, whose doctrine of creative destruction was quoted in the book. And Schumpeter wrote in 1946, “The essential points about creative response are these. From the standpoint of the observer, who is in full possession of all relevant facts,” say Federal Reserve Board, “it can always be understood ex post, but practically never understood ex ante. That is to say, it cannot be predicted and no deterministic credo avails against this,” said Schumpeter. Thus, innovation is discontinuous. And part of this discontinuity is surely that bubbles are inherent in human nature and animal spirits and that we have fear and euphoria and herding and importantly cognitive herding. But we’re left with this inability to forecast.

I want to conclude with two more economic conundrums that Dr. Greenspan’s book poses and he addressed in his comments tonight. In its concluding chapter, the book poses this profound question: Since the enterprising market economy is the most effective form of economic organization ever devised, far more effective than command economies, as discussed – whose failures are evident – but at the core of the enterprising economy is creative discussion, the question is posed: Can the amazing record of economic progress happen without accompanying booms and busts? Can you have the growth without the booms and busts? Or are booms and busts inevitably entailed in the very energies which create the progress and the ever-increasing productivity?

Schumpeter thought that the energies of progress necessarily entailed cycles. But are cycles the necessary cost of growth? Dr. Greenspan’s thoughtful answer in the book is, quote, “I see no way of removing periodic irrational exuberances without at the same time significantly diminishing the average rate of economic growth and the standards of living. For rising standards of living require innovators who have unlimited expectation of success and perseverance, no matter how many times they fail. Exuberance, the propensity for optimism, is required even if it runs to excess.”

I think all of us should ponder this a lot. We should also ponder one further essential question which the book raises: do the constant efforts of central banks to promote economic and financial stability by money creation and interest rate manipulation, all the while facing ineluctable uncertainty and using models which fail when most needed, result in making the booms and busts better or worse?

We need to think about that. Well, as is obvious, this book raises really interesting questions, including numerous other issues which I haven’t touched on at all, but we come away from “The Map and the Territory” with plenty of hard and important things to think about.

MR. WALLISON: Thank you, Alex. (Applause.)

We are going to run over a little bit here, but I’m noticing everyone seems to be fascinated by this discussion. I’m not too worried about it. But if you have dinner plans, we understand.
Dr. Greenspan, would you like to respond to what you just heard?

MR. GREENSPAN: Probably not, but I will. (Laughter.)

First of all, let me clarify with respect to Martin’s issue about anticipating a bubble. I think I am guilty of not conveying exactly what it is I was trying to say. Bubbles are capable of being identified as they are occurring. The issue is that the timing of when they burst is not determinable. It was at a dinner at that place called the American Enterprise Institute that I first talked about irrational exuberance. I think I knocked the Tokyo market down overnight, but then it came all the way back the next day. This was at a time halfway through the dot-com boom. It kept going and going for more than three years after that.

All the evidence suggests that if euphoria has a grip on the markets, it is very difficult to alter that dynamic. At the peak – or just below the peak – of a speculative stock market boom, there are, by definition, more bids than offers, else the market would not go still higher. Yet there comes a point where everyone is bullish, committed, and expects prices to go still higher. But the first person who decides to sell finds that there are no bids left and markets fall apart. This happens whether the bubble is in stocks, copper, hides, or wheat. It occurs in every speculative market; it is an extraordinary phenomenon that is very difficult to change.

But let me just address one more issue which Martin mentioned. This is the equation, I think, that you were referring to. This is a regression that disaggregates the reasons why corporations choose a certain amount of their liquid cash flow to invest in illiquid assets. The ratio of investment to cash flow is a number which the executive committees of corporations actually choose. It is an exceptionally effective way of learning people’s degree of confidence.

The independent variables on top all have very high t-values, meaning they are very strongly probable to have an effect on the dependent variable. They trace the changes over 40 years with the same coefficients remarkably well. Algebraically, the exogenous variables can be employed to judge what caused the decline in the cap-ex ratio, which in 2009 reached the lowest peacetime levels since 1938.

As can be seen in this chart, in the very beginning of the decline, slack in the economy widened significantly and, accordingly, only a small amount of cash flow was put into investment because everyone was uncertain about the future path of the economy. Since then, investment has partially recovered. But two other forces are still depressing the cap-ex ratio: (1) the cyclically-adjusted federal deficit as a percent of GDP, which measures the diversion of domestic savings from private capital investment to transfer payments that, in turn, are almost wholly consumed; And then (2), which Marty doesn’t like very much, the 30-year minus five-year yield spread of Treasury obligations, which essentially is a measure of the term structure of riskless interest rates.
from the fifth year out to the 30th year. That spread, primarily a measure of long-term inflation expectations, has gone up to levels unprecedented in American history.

It reflects the rate of discount on income from assets in the distant future. I do not have a chart here, but one of the calculations I make is a weighted average age, or durability, of the gross domestic product. For example, software lasts three to five years. A haircut lasts one month. In my case it’s – (laughter). But then there are very long-lived assets, notably nonresidential and residential construction, which, according to the BEA, last 38 and 75 years, respectively.

All of the decline in GDP in the period immediately subsequent to the 2008 crisis is attributable to a contraction of assets with life expectancies of more than 20 years, mainly buildings. This shortfall is still suppressing the recovery, as can be seen from the blue on the chart up here. It is essentially saying that, at this point, the shortfall in investment in long-lived illiquid assets is the result of a combination of the cyclically-adjusted deficit and the extraordinarily heavy discounting of investment income beyond the five-year mark. The combination of both of those forces is a broad measure of business confidence or uncertainty.

My argument is that uncertainty is essentially being driven by two factors in which government has a significant role – the cyclically-adjusted deficit and the Treasury spread. It is the primary issue suppressing economic growth.

MR. WALLISON: OK. Thank you, Alan. We’re going to – we’re obviously overtime, but we have time for two questions. This is not going to be fair. (Laughter.) If I could take bids, that would be one thing. (Laughter.) But I’m just going to call on some of the economists who are here who have been very interested in what they’ve heard. And then we’ll have an opportunity for our commentators and especially Alan to respond. So let’s see some hands. In the corner.

Q: (Inaudible) – University of Chicago. I speak on my own behalf. A question to the chairman in addition to the panelists and it is based on some of the work, including J.B. Taylor, who was referred to, and that is the question of discretion versus rule. They are arguments, including notably by Mr. Greenspan and the former counterparts – (inaudible) – who has argued that we should go back to some sort of conventional monetary policy. The question is, what is the proper framework? For if we were to listen to Mr. Pollock and Mr. Baily’s argument, it seems that it’s very difficult to actually quantify ex ante what the proper framework should be. We can only find out ex post. Thank you.

MR. GREENSPAN: I’m sorry. I spent too much time in front of trumpet section in my youth. My hearing isn’t great. Would you repeat the question?

MR. WALLISON: The question is whether it is possible to – I think as I understand it – the question is whether it’s possible to have a rule or a discretion on questions of whether there’s growth or failure to grow –
Q: So far what we call – excuse me – optimality of monetary policies. You know, in other words, assuming that the institutions have decide to what the expectation is, is it possible to actually design a framework –

MR. WALLISON: Can you design a framework that will give you a sense of – ex ante of what is going to occur ex post?

MR. GREENSPAN: Well, in version 2.0 of the book, I am working on that issue. In the book as it now stands, I try to trace the issue of moving from ex ante to ex post in certain ways. I hope to come to some more fruitful insight on what we can infer about the basic forces of stimulus – that is, fiscal stimulus and private business stimulus, primarily. There is a third type, which is related: the fact that 12 percent of personal consumption expenditures are generated by the level of equity of households. That is a different type of exogenous stimulus.

I am not quite there yet, but I agree that, unless and until you can do that, you really can’t be sure of what effectively is causing the economy to change as it does. And this is an issue that very significantly affects ex post savings in this economy, which, as you know, is extremely depressed. Indeed, in recent quarters, the actual net domestic savings of the American economy has been zero. That means that the capital stock, short of borrowings from abroad, is not increasing. And if the capital stock is not increasing, only innovation induces significant productivity growth and rising standards of living. It is that process for which I hope to get a better insight.

MR. POLLOCK: May I make a short comment on that, Peter, to –

MR. WALLISON: Yes, go ahead.

MR. POLLOCK: To the question. In my view, there is no ideal solution and that such questions as discretion versus rules are what we call essentially contestable; that is to say, non-decidable in a permanent knockdown way. And they’ll continue to be debated. They’ll give you all of your classes for years to come plenty to – plenty to debate about.

MR. WALLISON: Thank you. OK. One more question. I’d like – I see so many economists out here. Come on, guys. OK. In the back. There’s a microphone coming. And then, afterward, Alan has agreed to sign some books, so if you want to stay, that will be your payment.

Q: Thank you, sir. I just want – I hope the question is on the topic. You said at the beginning that if all the junky mortgages had been owned by mutual funds, you know, those mutual fund investors would have lost money, but we wouldn’t have a systemic crisis. So I wonder if part of the solution is just to simplify to a more Canadian-style banking system, where you got six or 10 banks and reduces the need for these complex
transactions of the different financial institutions moving all these complicated pieces of paper around each other. Would that be one direction to go?

MR. GREENSPAN: The broader issue is bank capital. Unaffiliated hedge funds went through this whole crisis and, to be sure, lost a lot of money, but none of them defaulted against any debt. And there are other financial intermediaries that did the same thing. So even though policymakers are starting to regulate hedge funds now, there is no evidence that they were the cause of significant dislocations.

The evidence leads me to conclude that, if we cannot stop bubbles because they are a creature of human nature, and if we do not want to bear the consequences of their collapse, the only solution is to find the means by which the financial system does not default in a serial manner. One potential vehicle is contingent convertible (co-co) bonds. The great advantage of co-co bonds is that they automatically convert to equity at the point of crisis or before. And that, to me, is the only credible way to solve the bubble problem.

MR. WALLISON: OK, well, I want to thank all of you for coming and I want to especially thank Dr. Greenspan for a stimulating discussion and our panel for some remarkably good comments on what Dr. Greenspan had to say. So let’s give them an appropriate hand. (Applause.)

(END)