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Insights into the Global Financial Crisis

Statement of Purpose

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ISBN 978-1-934667-27-9

16 December 2009

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Foreword

At a recent meeting of the Research Foundation of CFA Institute Board of Trustees, one trustee insightfully commented that a successful Research Foundation book should explore the outer edges of ideas, contributing unique knowledge and perspectives while also being relevant to investment practitioners.[1] This book, a collection of wisdom from today's deepest thinkers on markets and the economy, does just that. The authors deliberately push the boundaries of investment ideas in a way that will cause readers to think differently, yet more constructively, about the world around them.

Although the imminent collapse of financial markets has passed for now, the many consequences of the crisis lie in its wake. Whether the crisis presents a mere flesh wound or something much more severe remains to be seen. At its core, the massive debt owed by developed nations portends weakness in economic growth. An extraordinary moral hazard also remains for financial markets and looms large over the macro economy. These and other pressing economic issues provide the impetus for this book and are confronted with a wide-eyed and clear-headed approach.

We humans possess an unwavering desire for progress, mostly built on innovative tools, ideas, and techniques. Consider how we continually adopt innovations and ideas. My PDA (personal digital assistant) once gave me a competitive edge, but such devices rapidly became ubiquitous and are no longer a nicety but a necessity. This compulsion to adapt, or otherwise fall behind the curve, is firmly entrenched in our human condition. It cannot, and indeed should not, be dispensed with. Further to this point, the wide adoption of ideas and technology mostly produces highly desirable and beneficial societal outcomes. But alas, there is always an exception. In the realm of financial markets, the massive penetration of an idea and/or technology can and has led to dire outcomes. Here, as we are all keenly aware, herding ends badly.

Markets unambiguously work best when we all form our own, independent views. But in forming views, investors, like all people, instinctively fall back on what others are doing around them. This is so because, in grappling with an uncertain future, we figure our view is no better than our neighbors'. Keynes once argued that in the realm of investments, calculating the future is futile, saying that uncertainty in investments has "no scientific basis on which to form any calculable probability whatever" (p. 214).[2] But progress, indeed human survival, has long relied on anticipating the future. The notion of better solutions found by groupthink actually works

[1]Thanks to Frank Reilly, CFA, for this succinct insight.

[2]J.M. Keynes, "The General Theory of Employment," *Quarterly Journal of Economics*, vol. 51, no. 2 (February 1937):209–223.

well for some applications (for example, when a young farmer sees the more-seasoned farmers planting their crops in the spring and follows suit in the hope for a bountiful summer harvest) but fails miserably when applied to uncertain financial markets.

In the pursuit of progress, we are thus seemingly hardwired for both groupthink and innovation. Unfortunately, the interaction of these two—innovation and collective delusion—in the realm of financial markets all too frequently feeds a wave that builds until it can do so no longer, inexorably crashing upon the shore with systemic impact.

Contrary to groupthink, this book presents a collection of solidly independent viewpoints expressed through many years of practical, relevant experience. We, and our authors, would have it no other way. The articles presented in this book deal head on with the crucial issues confronting our global economy—those of today and those on the horizon. We hope you will find a careful read as rewarding and fun as it has been for us to put the book together.

Finally, we offer our sincere appreciation to the many distinguished authors presented in this book; all have been so very gracious and generous in contributing their time and talent. We are honored by their commitment to the profession. We also thank the CFA Institute Centre for Financial Market Integrity for its partnership in this important endeavor. We are pleased to present these diverse voices of wisdom speaking on the most critical financial matters of our time. With clarity comes progress.

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A Riskless Society Is "Unattainable and Infinitely Expensive"

Laurence B. Siegel
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The Research Foundation of CFA Institute

> A democracy can only exist until the voters discover that they can vote themselves money.
>
> —Popular saying, origin unknown[1]

Private vices will always thrive. Greed, envy, lust, pride, and my favorite, sloth (I can't help thinking of the two-toed, upside-down mammal) will continue to drive human action as they always have.

Some argue that greed is good. They have a point. Greed certainly makes the engine of the economy hum. Like Adam Smith, I would rather get my dinner from a merchant acting in his own interest than from one pretending to act in mine. Through the processes described by Smith, private vices are channeled in such a way as to produce public benefits.[2] This transformation is well known to students of economics and is seeping through to the general public.[3] But it does not work perfectly all the time.

Private vices are restrained by what Smith called "enlightened self-interest." If you are too greedy, you stand a chance of losing money. Regarding lust, as Danny O'Keefe sang in "Goodtime Charlie's Got the Blues": "you play around, you lose your wife; you play too long, you lose your life."

But private vices with no corresponding public benefits are encouraged when individuals are protected—or think they are protected—from any negative consequences that might arise while getting to keep the rewards. This chain of cause and

[1]The origin of this quote (sometimes wrongly attributed to Benjamin Franklin and often worded ". . . vote themselves largess from the public treasury") is hotly debated. It is usually attributed to the Scottish history professor Alexander Fraser Tytler (1747–1813), known as Lord Woodhouselee, but Daniel Oliver, a political writer who chaired the Federal Trade Commission during the Reagan administration, argues that Tytler never said it (see http://spectator.org/archives/2009/03/09/accuracy-is-desirable, accessed on 6 October 2009).

[2]The equation of private vices with public benefits, *under the right conditions,* is usually associated with Adam Smith's (1723–1790) masterpiece *The Wealth of Nations* (1776), but the English philosopher Bernard Mandeville (1670–1733) made the connection—and used the phrase—considerably earlier.

[3]Or it is being re-learned—now that market economics is fashionable once more in the academy, after a half century (roughly 1930–1980) when it was not. We will see if this fashion survives the current financial crisis, which has been blamed by many commentators—almost certainly wrongly—on an excess of freedom in markets.

effect is what economists call "moral hazard," a phrase that has been growing in familiarity since global capital markets began to collapse in 2007 and as the collapse intensified in 2008 and the early part of 2009. The decline in market values, amounting to 57 percent from peak to trough as measured by the daily closing value of the S&P 500 Index of U.S. equity prices, revealed that once-proud financial institutions and other corporations had experienced losses on a mammoth scale.[4] These losses were so large, and the institutions so interconnected through complex contracts and financial instruments, that the whole global financial system was at the point of collapse. Parts of the system actually stopped functioning: For a few weeks in September and October 2008, many healthy businesses could not obtain short-term credit at any price. Although financial conditions have improved dramatically since then, substantial long-term economic challenges remain.

What caused the losses? The chief source was about as unlikely as could be imagined: leveraged speculation on home mortgages. The details of the mortgage bubble and its bursting are explained in many other articles in this book, so I will not repeat them here. But what caused financial institutions, including investment banks, commercial banks, hedge funds, mutual funds, and other organizations supposedly run by well-informed profit seekers, to speculate so recklessly on home mortgages?

There has been broad agreement among observers that moral hazard caused the speculation and hence the crash. As with any moral hazard, the source of the hazard is guarantees or insurance, but explicit government guarantees of particular securities or companies is not what I am primarily concerned with. Instead, I believe that a larger problem exists: Governments around the world, and in particular the U.S. government (the one I am most familiar with), have tried to use macroeconomic policy to achieve a riskless society.[5] These governments are doing nothing Machiavellian or sinister; they are just trying to please the voters who chose them so as to avoid being turned out of office.[6]

But as the physicist Edwin Goldwasser said at a recent memorial service for his childhood friend, the great investment thinker Peter Bernstein, a riskless society is "unattainable and infinitely expensive."[7] We are now paying that expense. The

[4]This essay focuses on the United States and refers to data (such as returns on the S&P 500) that are U.S.-centric. However, much of what is discussed here applies likewise to non-U.S. economies.

[5]Although most of the articles in this book distinguish between the central government and the central bank (which are operationally separate in the United States), for brevity, I refer to both institutions combined as "government."

[6]Investors are not blameless; at times they appear capable of believing almost anything, and of pricing assets accordingly. But other authors in this book focus on aspects of investor behavior in fostering the bubble and crash; my focus is the role of government.

[7]Edwin L. (Ned) Goldwasser was one of the founders of the National Accelerator Laboratory (Fermilab), Batavia, Illinois, and was its deputy director from 1967 to 1978. The quote is from his speech at a celebratory memorial for Peter L. Bernstein (1919–2009) in New York City on 15 September 2009.

mystery is how ordinary people—the electoral constituencies of democracies around the world—came to believe that their governments could protect them from all macroeconomic risk.

The Great Moderation—Or Was It?

One clue in solving the mystery is the perception, correct or otherwise, that increasingly wise management of either the monetary or the fiscal aspect of government (or both) has dampened the business cycle. The so-called Great Moderation is a sharp decrease in the amplitude, as measured, of the business cycle between the pre–World War II era in the United States (say, 1787–1941) and the postwar period (1942–2009). This discontinuity is easily visible in Figure 1 of Ray Dalio's article later in this book, and its existence as a real phenomenon is an article of faith among many economists.

But the distinguished economist Christina Romer, who now serves the Obama administration as chair of the Council of Economic Advisers, has argued that the Great Moderation is a data error (see Romer 1986). Specifically, she points out that prewar macroeconomic data (including GNP, industrial production, and unemployment—all key indicators of the business cycle) were collected and analyzed using an outdated methodology that we would not and do not use today. The postwar data, in contrast, were collected using a more modern and accurate method. Most economists would have stopped here and said that the two periods could not be fairly compared, but the fiendishly clever Romer, realizing that she could not go back and collect the old data again using modern methods, re-examined the new, postwar data using the old method! The result, which you have probably guessed by now, is that if one uses the same method to study both periods, the Great Moderation disappears. The amplitude of the business cycle, Romer finds, is the same as it always has been.

The Great Depression

The role of government in the economy, moreover, has grown and grown over time, mostly through the application of monetary and fiscal policy. In the Great Depression era, monetary policy received short shrift (with some arguing that the Depression was worsened by the Federal Reserve pursuing a policy of cripplingly tight money in the face of collapsing real economic activity);[8] instead, fiscal policy, specifically deficit spending, was aggressively used by policymakers, acting under the influence of John Maynard Keynes, to stimulate the economy. Because government intervention in the economy is not a controlled experiment (with one patient receiving a placebo while the other gets the real medicine), we will never know whether the Depression was relieved or prolonged by the Keynesian policies of the

[8]See Friedman and Schwartz (1963).

Hoover and then the Roosevelt administrations. Although economists are still fighting over this question three-quarters of a century after the fact, a consensus is emerging among economic historians (but not policymakers) that World War II, not the New Deal, brought us out of the Depression and that many New Deal policies worsened the Depression instead of hastening its end. I happen to believe that the relief programs were justified—that providing relief is what a government is for—but that most of the other programs were not.

What we do know is that the Great Depression did end, after an excruciatingly painful decade, and the economy grew to new heights of prosperity, never again to sink to Depression-era levels of unproductivity. Many people, and apparently most policymakers, believe that the government's role in ending the Great Depression was net positive. At any rate, the prudential principle suggests that if another depression is threatened, one had better take action similar to what may (or may not) have ended the previous one. The analogy to medication is close: If the doctor does not know whether the medication cured the disease last time but does know that the patient got better, the doctor had better administer the medication the next time the disease strikes. There is, of course, a downside: The medication might be hurting the patient (but not so much as to kill him or even keep him from fully recovering). But absent a controlled experiment, one has no way of knowing the potential harmful consequences.[9]

If the government could drag the economy out of the Great Depression, then it can fix almost any economic problem—or so many people believe. But what happens when the economic crisis that threatens has almost nothing in common with the Great Depression? Let's look at the next major dislocation faced by the United States and other advanced economies, the Great Inflation of the 1970s.

The Great Inflation

Government always has an incentive to inflate because inflation enables the government to pay back debts in dollars (or whatever the relevant currency is) that are cheaper, in terms of goods and services, than the dollars that were borrowed.

Some private actors also benefit from inflation. In particular, private (nongovernment) debtors benefit from unexpected inflation. Like the government, these debtors can borrow in rich dollars and pay back with cheap ones. That the inflation is unexpected causes the inflation not to be impounded in interest rates. One can typically pull this switcheroo only once in a lifetime because lenders remember that

[9] Economists use *counterfactuals* in an attempt to imitate the controlled experiments used by laboratory scientists. That is, they model a past situation and then vary one historical fact to see what the model says the result would have been. An extensive body of literature describes, supports, and criticizes this method. It suffices to say that counterfactuals are not really the methodological equivalents of controlled laboratory experiments in the physical sciences, and we do not really know what would have happened during the Great Depression if different policies had been pursued.

they were paid back in cheapened dollars and demand an inflation risk premium for the next round of lending; the unexpected inflation becomes expected inflation and is impounded in interest rates. But private debtors may be seen as exerting pressure on the government to cause inflation.

Also, some companies and observers report that low levels of inflation act as a lubricant for real economic growth, as long as the volatility of inflation rates is also low. This claim is hard to evaluate. The investment manager and consultant Charles Gave has said that the history of capitalism is the history of falling real prices; declines in real prices are what economic growth *is*.[10] If Gave is right, we do not need a low level of inflation to lubricate the machinery of commerce. But it suffices to say that there are numerous vocal constituencies for inflation, and they seem to prevail, on average, when a fiat-money standard is used.[11]

The government also has a disincentive to inflate: Savers, faced with the prospect of ruin, especially if their savings are invested in nominal bonds, stand ready to throw the government out on its ear if there is too much inflation. In addition, the bond market makes it expensive for inflation-prone governments to borrow, providing another disincentive.

As I briefly suggested earlier, the inflationary bias exists only if there is a fiat-money standard rather than a commodity-money (say, gold) standard. When the gold standard prevailed, wartime inflation was typically followed by peacetime *deflation*. The United States slowly converted from a gold standard to a fiat-money standard between 1913, when the Federal Reserve was established, and 1971, when President Nixon "closed the gold window" (removing the obligation of the U.S. government to sell gold to foreign buyers at the statutory, but much below-market, price of $35 per ounce). In my view, the key moment in this long, gradual process of conversion from commodity to fiat money was President Roosevelt's devaluation of the dollar from one-sixteenth to one-thirty-fifth of an ounce of gold, combined with his near-simultaneous prohibition of the individual ownership of gold by U.S. citizens.[12]

When the gold window was closed in 1971, I was still in high school, but I remember having a sense of the ship of state having slipped a mooring. I did not know what would go wrong, but I would soon find out.

The pro- and anti-inflation forces described earlier had been roughly in balance, with only a slight inflationary bias, since the early 1950s, when the postwar inflation was abating. From 1950 to 1971, the compound annual rate of growth of the U.S. Consumer Price Index (CPI) was a relatively sedate 2.5 percent.[13]

[10]Personal communication with the author.

[11]Note that fiat money (government-issued currency not backed by or exchangeable for any commodity) appears to have been invented by John Law (1671–1729), the promoter of one of the first asset bubbles, that of the Mississippi Company (1716–1720).

[12]Fractions are approximate.

[13]This is the Consumer Price Index for All Urban Consumers, not seasonally adjusted, from Ibbotson Associates (*Stocks, Bonds, Bills, and Inflation* 2009).

After that, spurred upward by an oil embargo designed by the Organization of Arab Petroleum Exporting Countries to punish the United States for its support of Israel and also to make money, inflation rates went crazy.[14] If the rate of growth of the money supply had been kept under control, the huge increase in the price of oil would have merely been a change in *relative* prices, similar to what occurs when there is a wheat shortage or other natural shock to the economy; the overall price level would not have risen much, if at all. But oil was so large an input to the U.S. economy that a large increase in its price would have almost certainly caused a recession.[15] To avoid a recession, the Fed expanded the money supply at rates that were unprecedented in peacetime. The resulting general inflation rate peaked at 13.3 percent on a year-end to year-end basis (much higher rates were recorded over shorter periods). The inflation of the 1970s was reflected in a rise in the price of gold from $35 to $800 per ounce, a massive increase in real estate prices, a doubling of the general consumer price level over the decade, and a sharp depreciation of the dollar against harder currencies.

Argentina, postwar Hungary, or Weimar Germany might have regarded such inflation rates as merely pesky, but for the leading economy in the world, this was hyperinflation. No one knew how high inflation or interest rates would go. The U.S. Treasury was forced to pay 15.375 percent compound annual interest on one of its bond issues (resulting, we would later find out, in a windfall for everyone who bought them—but it was not obvious at the time that long-term interest rates would go just that high and no higher). The second Keynesian experiment—the first being the New Deal—had failed.

The Great Inflation came to an end, conceptually if not in the data, on 6 August 1979, when President Carter appointed Paul Volcker, a very strong monetarist and an implacable opponent of inflation, to the chairmanship of the Federal Reserve. It may have been Carter's finest moment. The Long Boom had begun.[16]

But it did not begin auspiciously. Volcker used very high (sometimes exceeding 20 percent) federal funds rates to drive the economy into two sharp recessions, one in 1979 and one in 1981–1982. The recessions were deeply unpopular, and the first one probably caused Carter to lose the 1980 presidential election to Ronald Reagan.

But inflation rates responded exactly as monetary theory predicted. As quickly as by 1982, inflation had fallen to a 3.9 percent annual rate, well within the standard of reasonableness established by the experience of 1950–1971. Inflation rates would

[14] A number of other factors were at work in tipping the United States into high-speed inflation. These include union contracts that tied wages to consumer prices and a naive acceptance of the Phillips curve theory, now widely regarded as a fallacy, by policymakers. The oil embargo was, however, the precipitate cause.

[15] Oil is a much smaller proportion of total U.S. expenditure now than it was in the 1970s.

[16] So named by Schwartz and Leyden (1997).

fall further, but they did not need to: The aggressive intervention by the Fed had fixed a disastrous situation. Once again, macroeconomic policy—this time informed by the monetarist and neoclassical views of Milton Friedman rather than by the Keynesian views of the New Dealers—came to the rescue and removed from the scene a critical element of macroeconomic risk, namely the threat of ever-escalating inflation rates tipping into hyperinflation. Americans could save and invest again with confidence. Moral hazard was building: The government once again appeared to get us out of a messy situation.

The story of the taming of the Great Inflation does not quite end here. Sane monetary policy, resulting in moderate and stable rates of inflation, was a necessary but not a sufficient condition for the Long Boom, which really did not get started until 1982 (and which ran until 2000 or 2007, depending on how one thinks about the 2003–07 period[17]). The other condition that needed to be fulfilled was the Reagan administration's dramatic lowering of tax rates, both on personal incomes and on capital gains.[18] Although high marginal rates of individual income taxation destroy initiative and are unfair to the most productive members of society, the biggest tax-related constraint on economic growth at the end of the 1970s came from the "inflation tax" on capital, which was reduced as part of the Reagan tax cuts.

The inflation tax requires some explanation. During an inflation, taxing nominal capital gains as if they are real can produce effective tax rates on real gains well in excess of 100 percent. Suppose that a saver held a hypothetical asset earning the rate of CPI inflation purchased on 31 December 1969 for $100 and thus worth $203.63 on 31 December 1979. If sold, this asset would have produced a $103.63 "capital gain," representing no gain at all in purchasing power but subject to capital gains tax at the going marginal rate of 39.875 percent (for a top-bracket saver in 1979). In this example, the effective tax rate on real gains is infinite, or more precisely, cannot be calculated because there is no real gain.

Under such confiscatory conditions, capital goes on strike. And that is what it did in the early 1980s.[19] Because capital as well as labor is needed to produce goods and services, the freeing up of capital caused by the tax cuts of the 1980s must be regarded as a key precondition of the economic growth that followed.

[17] I prefer the longer definition because real GDP *per capita* is the best indicator of prosperity and was higher in 2007 than in 2000.

[18] Details are at www.taxpolicycenter.org/publications/url.cfm?ID=1000588.

[19] One can tell that capital is on strike when long-term interest rates exceed 15 percent and the price/earnings ratio of the stock market hovers between 6 and 8; no one provides any capital to any enterprise, or to a government, except in exchange for the promise of extremely lavish rewards.

The Greenspan Era

Paul Volcker was followed as Fed chairman by Alan Greenspan, also a strong monetarist by training and habit. But during Greenspan's long tenure as Fed chair, 1987 to 2006, a gradual shift took place in public attitudes toward macroeconomic risk and toward the proper role of government in managing this risk.

The sharp 1979 and 1981–82 recessions, which occurred under Volcker's watch, were tolerated (just barely) by a public that recognized sky-high inflation rates as a true national emergency. What surprised many was how quickly inflation rates fell when Volcker's tight-money policy began to be applied, and how stable they remained (at low levels) even as the vigor of the Long Boom might have been expected to put increasing upward pressure on prices. With the inflation problem apparently solved, the Fed could look for other dragons to slay.

Greenspan began to shift from a restrictive to a more-accommodative monetary framework in the wake of the crash of 19 October 1987. The crash, culminating in an unprecedented one-day 22 percent decline in U.S. stock prices,[20] showed that the financial system could be endangered by endogenous events, in this case the widespread use of portfolio insurance combined with a generally overpriced stock market. The Fed's response—to flood the financial system with liquidity, with a subsequent strong recovery in the stock market and no hint of a recession, much less a depression—set the stage for the perception that the public sector, acting mostly through the Fed, owned a "put" option on the stock market and the economy and could exercise it through easy-money policies when warranted so that recessions, credit crunches, and depressions could be avoided or stopped very early.

Moral hazard keeps building: The government got us out of an endogenous panic in the financial system, quite a different problem from that of the Great Depression or the Great Inflation but a potentially very damaging situation nonetheless.

The idea of a Greenspan or Fed "put" was solidified by events in 1994 and 1998 and reinforced by the V-shaped recovery starting in 2003, after the dot-com bubble and bust. It appeared that government had managed most of the risk out of the economy, leading many people to believe that the Great Moderation, which Romer chalks up to measurement error as discussed earlier, was real. Business cycles seemed more muted than ever before as a result of the beneficent effect of "sound" monetary policy—tight money when the economy is in a boom and easy money when it turns down but with an accommodative bias, on average, over time.

[20] Declines in other countries' stock markets on that day are discussed in the article in this book by Kaplan et al.

Real economic growth is hard to come by and is very important. As I wrote in 1997:

> There is an asymmetry to history. Life usually proceeds undisturbed, and the economy grows from more to more, but "usually" is not good enough. Progress is common, but it proceeds slowly, and the effect of one good year is small. Catastrophes are rare, but each one undoes many years—even centuries—of progress. (Siegel 1997a, p. 30)

In other words, when the Four Horsemen of the Apocalypse come riding, one cannot have too high a starting point! Real growth in a "usual" year, therefore, is so important that long booms should be encouraged, even if they are accompanied by some inflation and by some accumulation of systemic risk, with occasional asset bubbles and busts. They are almost certainly a net positive for society.[21] At the level of the human race, we are vastly richer than we were in 1979 (or 1946). Of course, some of this "richness" has to do with the end of Communism, the widespread acceptance of free trade, and technological innovation that would proceed at more or less its own pace irrespective of what the monetary authorities were doing. But some of the gain in real wealth has to do with allowing bubbles to bubble so that innovative technologies and processes can be funded, with most new ventures failing but with some succeeding beyond anyone's wildest expectations and—most importantly, as Peter Bernstein has pointed out—with *society getting to keep the technology*.

Thus, unlike some observers, I do not really fault Greenspan for sowing the seeds of the global financial crisis of 2007–2009. I know, "scientifically" speaking, that the bubble is the disease (because it misallocates resources, in the most recent example drawing too many people and dollars into the construction trades and the real estate brokerage and mortgage origination businesses). The crash is the cure (pushing these people and dollars back into more-productive uses). But humanity progresses by jumps. Without high expectations for the payoff to innovation, we might not have the railroad, the telephone, the automobile, the airplane, the electrical grid, the computer, the internet, or any of the other tools of modern life. But to get these gains, we *must* be able to tolerate risk because most attempts at innovation will not work out, stock market fortunes will be lost as well as won, and people will lose jobs.

Applying this principle (not exactly rocket science—we must be willing to tolerate risk if we want reward) to the events of the Greenspan era, I doubt that people would have tolerated the many recessions, periods of slow growth, and lack of innovation that would have resulted if Greenspan had managed away the Long Boom by quashing each asset bubble as it began to take shape.[22] The Greenspan era did not

[21] See Bernstein (2001).

[22] Or by quashing each asset bubble as best he could, given the bluntness of monetary policy as an instrument.

produce a Great Moderation (instead, systemic risk accumulated), but a tremendous amount of real wealth that we take for granted was created. With apologies to Shakespeare, if we do not like the consequences—if we are unwilling to pay the "risk price" that must be paid—the fault lies not in Alan Greenspan but in ourselves.

What's the Catch?

As I hope I have shown in the preceding sections of this article, there have been four chief "learning experiences" between the people and their government regarding macroeconomic policy over the last century:

1. The government can get us out of a Great Depression through fiscal stimulus.
2. The government can get us out of a Great Inflation through restrictive monetary policy.
3. The government can foster a Long Boom or Great Moderation, a period of good times, whatever you want to call it, through artful manipulation of the money supply.
4. The government can reverse an endogenous collapse of an asset market by flooding that market with liquidity.

As you have probably figured out, I would argue that the government fixed the problem only once, when it caused the problem. Because, as Friedman and Schwartz (1963) have written, "inflation is always and everywhere a monetary phenomenon," only bad monetary policy could cause the Great Inflation and only a monetary remedy could end it. The Great Depression would probably have ended sooner if serious policy mistakes had not been made during the strong recovery of 1935 and 1936; and the Great Moderation did not take place. The Long Boom, however, was a real phenomenon and was caused by changes in technology; Greenspan and the executive and legislative branches of the government got out of the way and did no harm.

The lesson that appears to have been learned by the voters, however, is that monetary and fiscal policy solutions can be brought to bear on almost any economic problem and the problem will have a successful resolution. Thus, a more or less riskless society, fostered by government, is seen as not only desirable but also possible.[23]

Where is the catch? Well, either government intervention in the economy helps to mitigate risk or it does not. I have argued that it mostly does not help, so the price of a riskless society really is infinite, as Goldwasser suggested; no matter how much of other people's money one spends, risk does not go away. It just moves elsewhere, where it cannot be seen as clearly.

[23]Interestingly, although some sort of financial crisis, banking panic, or depression occurred about every 10 years (with wide variation in this frequency) from the founding of the Republic to about 1945, and then again starting about 1971, no such crisis emerged between 1945 and 1971. Future researchers may want to ask what was special about this "calm" period of growth in the United States.

In certain circumstances, however, government intervention really does help. The unfreezing of the short-term credit markets in September and October 2008, discussed later, is a case in point. But no government program or benefit, once delivered, is easy to take away—even if the program or benefit is an explicitly temporary response to a perceived emergency.

Thus, in each emergency, the government grows in size *and stays larger than it was before* because of the basic fact of human nature referred to in the epigraph: "People will vote themselves other people's money if they can."

But what are the economic consequences of this observation? What happens when we try, using other people's money, to purchase something (a riskless society) that is, according to the preceding logic, not for sale at any price? If pursuing a riskless society is a fruitless effort, what should we do instead?

The Ratchet Cycle of Increasing Government Size

Some insights into these mysteries are provided by the Boeckhs, father and son, the elder of whom (Tony) is highly respected for what used to be his industry periodical, the *Bank Credit Analyst*. In a widely circulated series of articles called "The Great Reflation Experiment," Boeckh and Boeckh (2009) refer (correctly as monetarists) to any systematic and extended increase in the money supply as *inflation*.[24]

Because the money supply is a price (it is the amount of money needed to represent all the goods and services that are being transacted), it cannot be increased without some other price in the economy changing. One usually thinks of consumer price increases in connection with inflation, but as the Boeckhs point out, asset price increases can also represent inflation—the increased money supply going to buy long-term assets rather than consumer goods, which have recently been subject to restraints on nominal price increases because of competition from newly industrializing, low-wage countries. The long-term assets, or investments, that have gone into bubble status include internet stocks, financial services stocks, oil, real estate of all kinds and in all places, real estate–backed securities, corporate bonds, and one might now argue, Treasury bonds and gold. When the price of any asset gets to be much higher than its fundamental value, the result is either an orderly bear market in that asset or a crash.[25] And as of mid- or late 2007, we had experienced a lot of money supply growth for a very long time "with virtually no consequence to date (other than periodic asset price bubbles and shakeouts)" (Boeckh and Boeckh 2009, p. 2). The illusion of a nearly riskless society was intact.

[24] See also Tempelman (2009).

[25] The fundamental value of gold is its "value in use"—that is, its industrial or decorative (as opposed to monetary) value.

What happened next?

This whole book is about that question, but a quick way of saying "what happened" in September and October 2008 is to observe that the traditional grantors of private credit—banks and other financial institutions—saw the highly leveraged asset sides of their balance sheets deteriorate to the point where they were insolvent or almost insolvent, so they stopped granting credit. Without short-term credit, the economy simply cannot function: Employers cannot meet their payrolls, groceries cannot stock their shelves, farmers cannot farm. As Greenspan said in a speech at the Paulson & Co. investors' meeting in New York City on 17 November 2008, when the private sector fails to provide short-term credit, the public sector *must* step in and provide it (temporarily until the private sector starts again). I know of no economist, not even the most wild-eyed libertarian, who disagrees with this statement or policy.

And the policy was successful: Short-term credit markets started to unfreeze by November 2008. And even as the economy slid deeper into recession in the first quarter of 2009, and as the stock market reached lows not seen since the mid-1990s, credit markets provided evidence of the "green shoots of recovery" of which journalists and politicians spoke so hopefully. As this article is being written, the green shoots are becoming little stems and leaves. Financial conditions as measured by credit spreads and stock prices have improved about as rapidly as they ever have in the early stages of a recovery.

The rest of "what happened" is covered in other articles in this book, so I will not provide the detail here. What matters to my argument is that two distinct types of massive government intervention were brought to bear on the problem: (1) an unprecedented increase in the size of the Fed's balance sheet and (2) a more conventional (but very expensive) multiyear fiscal stimulus package. The effect of these interventions is to send the public debt as a percentage of GDP skyrocketing to levels never before seen in peacetime and close to (and if current trends continue, exceeding) the highs reached during World War II, when the United States was fighting for its existence.

Why do these interventions constitute a great reflation experiment? Both the stimulus package and the purchase of assets by the Fed involve government expenditure in current time, in excess of the amount supportable by current tax collections. In other words, the government, broadly construed to include the Fed, is running a large deficit. The principle known as Ricardian equivalence—as enunciated by Robert Barro (1974), drawing on David Ricardo (1820)—says that, at least as a first-order effect, a government expenditure has the same impact on the economy whether the expenditure is financed through current taxation or deferred taxation (debt). Moreover, any debt incurred by the government can be paid off either through future direct taxation or through inflation (that is, by decreasing the real value of the currency in which the debt is to be repaid). Inflation is thus a form of indirect—but very real—taxation.

If one takes this analysis at face value, the increase in government expenditure associated with the economic crisis of 2007–2009 could be paid for with a tax increase, avoiding any need for the government to issue new debt and then, later, possibly reduce the real value of that debt through an inflationary policy. But the required tax increase would be so large that any hoped-for economic recovery would be choked off immediately, and the voters, moreover, would not and should not stand for it.

A second possibility, to borrow now and pay off the debt later with increased direct taxation, is only feasible if future economic growth is extremely robust, making the needed increase in tax rates much less than it would otherwise be. For example, during the Long Boom, real economic growth caused the government to receive increased *revenues* at historically low tax *rates*, fulfilling the famously controversial prediction of the Laffer curve, although at a much longer time lag than Arthur Laffer originally hoped.[26]

The final and most likely possibility is that the greatly enlarged debt of the U.S. government will be partially inflated away ("reflated" referring to the *return* of inflation, once thought to be defeated). Having borrowed with relatively expensive dollars, the government can pay its debts back with cheaper dollars, and the safety—in nominal terms—of U.S. Treasury obligations is thereby preserved.[27] Private borrowers who have contracted to repay their debts in nominal terms will be helped by inflation, whereas their counterparties—lenders and bondholders—will be hurt. Borrowers and lenders who have contracted in real terms will be largely unaffected. Equities, being essentially real assets—in that they are claims to plant and equipment, patents, labor contracts, and so forth rather than to *money*—should have reasonably favorable prospects, and leveraged inflation-hedging assets should do extremely well.[28]

To sum up, the ratchet cycle of increasing government size works as follows:

- Some sort of crisis occurs.
- The government and/or central bank, expressing or purporting to express the will of the voters, intervene. Such intervention is inevitably inflationary because it involves spending—the injection of real resources—into a situation where there was previously no such injection.
- The crisis resolves. It appears as if the cause of the resolution is the government intervention, although we have no way of knowing whether the same or a better result would have been obtained without the intervention.

[26] For an excellent discussion that places the Laffer curve in historical context, see Laffer (2004).

[27] This scenario is complicated slightly by the fact that about 20 percent of U.S. government debt consists of Treasury Inflation-Protected Securities, or real return bonds, the value of which cannot be inflated away; but much higher rates of inflation are still the most likely scenario.

[28] Some of the author's earlier views on the risks of inflation and on the impact of inflation on asset returns are in Siegel (1997b, 1998).

- After the crisis passes, strong real economic growth tends to cause the size of government (relative to the size of the private sector) to recede. We experience tax cuts and a "conservative" period.
- Good times, fueled by easy money, enable the excesses (of prices or debt or whatever) to accumulate, which causes the next crisis.
- When the next crisis occurs, the prudential principle dictates that the same or greater policy response be applied because one cannot disprove that the last crisis would have resolved without it.
- Government thus grows larger over time, although not without periods when it recedes in relative size.

But is there a limit to this cycle? Of course there is. The government cannot deploy more resources than it can obtain, somehow, from the people. (This is what Ricardian equivalence really means.) At any given size of government, the response to a crisis, whether productive or not (let us assume that it is productive), is almost guaranteed to increase that size. Unless a substantial retrenchment in the size of government takes place between crises—which sometimes happens because of increased economic prosperity and thus increased tax revenues during booms—the government has less room to maneuver (by once again increasing its own size) to fight the next crisis. It is certainly imaginable that, having grown to a size where the people are just barely willing to pay the taxes needed to support the government, a crisis can occur that is so severe that the government is simply out of ammunition. I do not think we have reached that point, but someday we may—and we are headed in that direction. A riskless society cannot exist.

Private Credit

The Boeckhs also attack, as economically unsound, the tremendous growth in *private* debt since 1982. I am more sanguine about this issue. They argue that the Long Boom was funded by an expansion of private-sector credit that

> . . . maintained a stable trend relative to GDP from 1964 to 1982. After that, the ratio of debt to GDP rose rapidly for the 25 years leading up to the crash and is continuing to rise. The current reading has debt close to 180 percent of GDP, about double the level of the early 1980s. The magnitude and length of this rise is probably unprecedented in the history of the world. Even the credit inflation that was the prelude to the 1929 crash and the Great Depression only lasted five or six years. (Boeckh and Boeckh 2009, p. 1)

But the Boeckhs do not say what is on the other side of the balance sheet! I would encourage them to look there. Not all of the private credit that was created during the Long Boom went into spending beyond one's means, or into buying toxic assets, or into bidding the prices of existing good assets (such as equities and real estate) into the stratosphere. Some of the newly created private credit went to create new capital—buildings, factories, trucks, computers, and the less obvious