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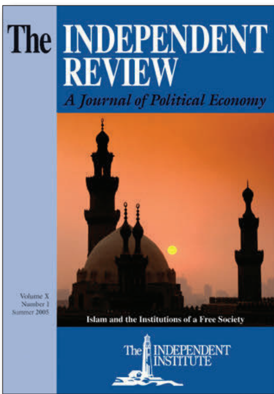

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Who Predicted the Bubble? Who Predicted the Crash?

MARK THORNTON

> Science is prediction.
>
> **—Motto of the Econometrics Society**

> Those who have knowledge, don't predict. Those who predict, don't have knowledge.
>
> **—Lao Tzu, sixth-century B.C. Chinese poet**

Predicting economic behavior is inherently difficult. As Niels Bohr joked, "Prediction is very difficult, especially if it's about the future."[1] People's economic actions are subject to choice and change, unlike the subject matter of the physical sciences, which has fixed properties. Therefore, the future must remain uncertain. Predicting the economy as a whole is fraught with additional dangers and complications, and all leading indicators of economywide change either do not have or eventually lose the capacity to predict the future accurately. As Paul Samuelson once quipped, "Wall Street indices predicted nine out of the last five recessions" (1966, 92). In light of these difficulties, economists have taken widely divergent positions on prediction.

Many modern mainstream economists, like their colleagues in the physical sciences, view prediction as the essence of science. If you cannot predict with a high degree of accuracy, then you are not being scientific. You must put your science to the empirical test and pass that test. The dominance of positivism in economic methodology encourages economists to worry less about the logical consistency of

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1. Quotation at http://www.brainyquote.com/quotes/quotes/n/q130288.html.

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their models and to concentrate more on the development of models that exploit historical data in making predictions. Government and business economists then use the models to forecast variables such as gross domestic product (GDP), interest rates, unemployment, company sales, stock prices, housing starts, and demographic changes.

There is also substantial support for the position that we cannot predict and that economists have a terrible forecasting record. With respect to the recent bubble and bust, Mike Norman put this view of economists in perspective: “I’m an economist. Big deal, right? Until last year, economists got even less respect than Wall Street analysts; now, we’re just a notch above. Admittedly, this reputation is well-deserved, because it comes from our less-than-stellar ability to get economic forecasts right. With all of that data and plenty of powerful computing ability, you’d think we could produce better forecasts. Heck, even the local weatherman puts us to shame” (2003).

The “street,” having witnessed countless forecasts go wrong, is naturally suspect. As Lindley Clark once noted in the *Wall Street Journal*, “Economists have a great deal of trouble predicting the future, and it’s unlikely that this unhappy situation ever will change” (1990). Indeed, some economists think that forecasts are akin to “magic” and that such magic is contradicted by the very essence of economic science. Deirdre McCloskey has expounded on this view of economic forecasts:

> Economics is the science of the postmagical age. Far from being unscientific hoobla-hoo, economics is deeply antimagical. It keeps telling us that we cannot do it, that magic will not help. Only the superstitious think that profitable forecasts about human action are easily obtainable. That is why economics, contrary to common sneer, is not mere magic and hoobla-hoo. Economics says that forecasts, like many other desirable things, are scarce. It cannot be easy to know what great empire will fall or when the market will turn. “Doctor Friedman, what’s going to happen to interest rates next year?” Hoobla-hoo. Some economists allow themselves to be paid cash money to answer such questions, but they know they cannot. Their very science says so. (1992, 40)

Though agreeing in the main that forecasting has questionable value, Michael Bordo (1992, 47) claims that forecasting has some scientific and practical value and is not all just snake oil and magic. He notes that not all economists have been such dismal failures as forecasters: Richard Cantillon made correct predictions about John Law’s Mississippi Bubble system based on economic theory, and he made a fortune as a result.

Others, such as the famous Chinese philosopher Lao Tzu, are skeptical about the prospects for prediction but do not altogether reject the possibility of accurate prediction. They merely restrict themselves to hypothetical and qualitative prediction. Foremost among this group are the Austrian school economists, who reject the

notion of fixed relations between human-controlled variables and even the idea that data can be used to "test" an economic theory. Austrian economist Ludwig von Mises rejected the general notion of forecasting and claimed that economics can provide only qualitative predictions about particular polices.

> Economics can predict the effects to be expected from resorting to definite measures of economic policies. It can answer the question whether a definite policy is able to attain the ends aimed at and, if the answer is in the negative, what its real effects will be. But, of course, this prediction can be only "qualitative." It cannot be "quantitative" as there are no constant relations between the factors and effects concerned. The practical value of economics is to be seen in this neatly circumscribed power of predicting the outcome of definite measures. (1962, 67)

The problem of predicting (with the goal of preventing) stock-market bubbles and crashes is especially important, not just because busts result in huge financial loses for some investors, but because many of these extreme financial cycles can disrupt the financial system and lead to real economic contractions (Mishkin and White 2003). Unfortunately, economists have yet to develop a generally accepted view of bubbles and have little to offer in predicting them.

As a case in point, a conference sponsored by the World Bank and the Federal Reserve Bank of Chicago (with papers published in Hunter, Kaufman, and Pomerleano 2003) featured leading economists who considered the causes of asset-price bubbles. Among the participants, Randall Kroszner of the University of Chicago and the President's Council of Economic Advisors claimed that uncertainty about the past makes real-time identification of bubbles problematic. "The research record on asset-price measurement is far from being sufficient to build a policy-maker's confidence" (Halcomb and Hussain 2002, 1). The governor of the Bank of France, Jean-Claude Trichet, said that determining asset-price bubbles is difficult and that government policy might do more harm than good because people "may become involved in riskier projects without having consciously taken the decision to accept greater risk" (2). Fredrick Mishkin and Eugene White reexamined the past hundred years of stock-market crashes and suggested that ignoring stock-market crashes and concentrating on the economy is the best policy to avoid severe financial meltdown *most of the time*. Kunio Okina and Shigenori Shiratsuka found that the Bank of Japan should have used aggressive monetary policy following the Japanese bubble, but that it could not do so because of the fundamental and ongoing weakness of the Japanese banking and financial system. Santiago Herrera and Guillermo Perry concluded that the United States helped to export bubbles to Latin American economies.

Are bubbles "rational"? In this same World Bank conference, John Cochrane of the University of Chicago argued that bubbles are rational because holding

shares of high-tech companies is like holding cash. Ellen McGrattan and Edward C. Prescott of the Federal Reserve Bank of Minneapolis found that no bubble existed in 1929, and stocks were actually undervalued then. Allan Meltzer of Carnegie Mellon University made the reassuring claims that bubbles could be explained, that buyers and sellers are rational during bubbles, and that "expansive economic policies can compensate for *any* deflationary impulse on output prices coming from asset prices" (3, emphasis in original). Werner De Bondt, however, averred that psychological factors play an important role in short-term bubble behavior.

Michael Bordo and Antu Murshid found that bubbles are transmitted regionally during some periods and internationally during others. Franklin Allen and Douglas Gale found that international stock linkages can either increase or decrease the extent of asset bubbles. Steven Kaplan of the University of Chicago found that high-tech stocks were highly valued because people believed they would reduce transactions costs, but stock-market values fell when people no longer held that belief. Marvin Goodfriend of the Federal Reserve Bank of Richmond said that central banks should not target asset prices, but Michael Mussa of the Institute for International Economics said that sometimes they should. Stephen Cecchetti and Hans Genberg argued that targeting asset prices might help. There was agreement that if asset bubbles do exist, then they are inevitable, whether they are rational or not.[2] Obviously, these conflicting and contradictory findings leave much to be desired with respect to our understanding of stock-market bubbles.

Therefore, when we ask who made accurate predictions about the economy and who did not, we ask a question that goes beyond the issue of the day and touches on a fundamental issue of economic methodology. Naturally, my survey in this article does not represent a comprehensive accounting of all predictions. Its point of departure is that most people—whether they were investment analysts, advisers, fund managers, investors, pundits, or professional or academic economists—did not predict the recent bubble and crash. Not only was the number of correct predictions small, but for certain reasons such predictions for the most part were made in venues of relatively small market share. In canvassing for correct predictions, I pay special attention to eliminating perpetual predictors of doom (that is, those who are always predicting bear markets, stock-market crashes, and depressions) and to analyzing the rationale for the prediction (for example, valuation measures, technical analysis, theoretical analysis, or market psychology). A meta-analysis of these causal factors provides direction for future research.

2. For more on the mainstream perspective on this topic, see the symposium on bubbles in the *Journal of Economic Perspectives* for spring 1990.

Bubble Predictions

> If you can look into the seeds of time, and say which grain will grow and which will not, speak then unto me.
>
> **—William Shakespeare, *Macbeth***

> Responsible economists and economic analysts should have been warning the public about the prospects of a market crash and its implications for both the economy as a whole and their personal fortunes. However, few economists were issuing such warnings.
>
> **—Dean Baker, *Dangerous Minds? The Track Record of Economic and Financial Analysts***

Someone who did issue warnings regarding the stock-market bubble and the problems a stock-market crash might generate was Dean Baker of the Center for Economic and Policy Research. In the aftermath of the crash, he made the following observations:

1. It should have been very simple for any competent analyst to recognize the bubble as the ratio of stock prices to corporate earnings hit levels that clearly were not sustainable in the late nineties. . . . The failure to recognize the bubble and warn of its consequences stems in part from a misunderstanding of the stock market and its role in the economy. . . .
2. While there were some economic analysts who did warn of the market bubble, their views were almost completely excluded from the media. . . .
3. Due to their failure to recognize the stock market bubble, official forecasters, like the Congressional Budget Office (CBO) and the Social Security Administration (SSA), made projections that were implausible on their face. . . .
4. Most managers of large investment funds, including public and private pensions, and university and foundation endowments, failed to see the bubble and its inevitable collapse. . . .

   While the failure to recognize and warn of the stock bubble amounted to an enormous professional lapse, few economic or financial analysts seem to have paid much of [a] price for their mistake. (2002, 3)

I myself presented such warnings and analysis in public lectures, radio broadcasts, and newspaper articles and on the Internet, but with little or no effect. In a public

lecture in Houston on July 15, 1999, I addressed an audience about Alan Greenspan's "luck" in increasing the money stock without price inflation, and I warned that the Fed's actions inevitably would have negative economic consequences, especially for stocks and the dollar. I appeared on the *Financial Sense News Hour* on April 3, 2000, and April 4, 2001, and on a radio show called "Credit Bubble."[3] On the Barstool Economist list on January 5, 2001, and January 7, 2001, I issued warnings that the dollar (then near its peak) would probably weaken over time. I also wrote several letters to newspapers, such as *Investors Business Daily,* during this period, none of which was printed.

The *Wall Street Journal*'s semiannual survey of economic predictions indicates that forecasters have had difficulties in understanding the stock-market bubble. The survey released on January 4, 1999, found forecasters to be concerned about the economy and forecasting low rates of economic growth, the majority expecting higher inflation and a 30 percent chance of entering a bear market in stocks. The survey released July 2, 1999, found those same economists raising their forecasts of the GDP growth rate by 50 percent for the remainder of 1999 in response to higher-than-predicted growth rates in early 1999. Even though they remained personally bullish on the stock market, they expressed greater concern about a bear market's beginning in 1999. After the Y2K crisis passed, the survey released on January 3, 2000, found economists to be euphoric about the prospects for 2000. "There is no end in sight to the expansion," said Allen Sinai, an economist at Primark Corporation. The group remained bullish on stocks, and 95 percent of the forecasters attached a probability of less than 30 percent to the onset of a recession. Only longtime bear Gary Shilling based his forecast of a recession on the stock market's crashing. After a decline of more than 30 percent in the NASDAQ index, the survey released on July 3, 2000, found economists confident that the Federal Reserve (the Fed) would engineer a "soft landing"; the optimists believed that the Fed would pull off the perfect soft landing, whereas the pessimists foresaw a soft landing but worried that the Fed would not do enough to fight inflation. However, the group finally was starting to express more concern about the future of the economy and the stock market. These forecasters' record seems extremely weak. Even as reported by the *Wall Street Journal,* their record is poor: they seemed to have no clue about changes in the economy's short-term outlook, simply projecting the historical trends to continue.

The record of government economists mirrors that of Wall Street analysts. Forecasts from the U.S. Congressional Budget Office (CBO) and the White House are compared with those from Wall Street in table 1. Under each group's heading, its annual forecasts for the period 1992–2002 are compared with actual economic

3. See http://www.financialsense.com/Experts/Thornton.htm.

Table 1
CBO, Administration, and *Blue Chip* Forecasts of Two-Year Average Growth Rates for Nominal Output (by Calendar Year, in Percent)

		CBO		Administration		*Blue Chip*	
GDP	Actual	Forecast	Error	Forecast	Error	Forecast	Error
1992–1993	5.3	5.7	0.4	5.4	0.1	5.5	0.2
1993–1994	5.7	5.3	–0.3	5.3	–0.3	6.0	0.4
1994–1995	5.6	5.6	0	5.7	0.1	5.6	0.1
1995–1996	5.2	5.2	0	5.6	0.3	5.7	0.5
1996–1997	6.0	4.7	–1.3	5.1	–1.0	4.5	–1.5
1997–1998	6.0	4.6	–1.5	4.7	–1.3	4.6	–1.4
1998–1999	5.6	4.5	–1.1	4.2	–1.4	4.5	–1.0
1999–2000	5.8	3.9	–1.8	4.0	–1.7	4.1	–1.7
2000–2001	4.3	4.9	0.6	4.9	0.6	5.1	0.8
2001–2002	3.1	5.2	2.0	5.4	2.3	5.1	2.0
Statistics for 1982–2001							
Mean error	*	*	0.2	*	0.4	*	0.2
Mean absolute error	*	*	1.1	*	1.2	*	1.1

Source: U.S. Congressional Budget Office 2003.

growth rates. From 1992 through 1996, the forecasts were accurate as the economy followed the trend line. From 1996 through 2000, forecasters from all three groups underestimated economic growth rates as the economy and the stock market went into the bubble phase. Then, from 2000 to 2002, they all overestimated economic growth rates, following the trend and failing to anticipate the meltdown in the stock market and the economy. The mean absolute error for all three groups was approximately one percentage point, so that their average forecast for growth rates was off by approximately 20 percent.

Two of the most famous predictions concerning the stock market came from James K. Glassman and Kevin A. Hassett (1999), who predicted at the apex of the stock-market bubble that the Dow Jones Industrial average would go up to 36,000, and from Robert J. Shiller (2000), who wrote at the same time that the stock market was suffering from "irrational exuberance," a phase coined by Fed chairman Alan Greenspan.

Shiller (2000) saw that the stock market was overvalued when placed in historical perspective. He showed that there were genuine reasons, such as the development of the Internet, for higher stock prices, but he argued that as a result of psychological factors, investors are exposed to a feedback mechanism whereby higher stock prices beget even higher stock prices without diminishing investor confidence.

He also showed that the news media present a biased view of stock markets that reinforces the speculative bubble. This bubble psychology creates "new era" thinking: people begin to believe that the stock market will move ever upward. He showed further that such new thinking cum bubble has been a periodic phenomenon in our history and that allowing such herd behavior to guide markets is a recipe for disaster.

The Glassman-Hassett duo represents a team consisting of a professional economic journalist and an academic economist with experience in government, both oriented to the "free market" and best described as supply-siders. They published *Dow 36,000: The New Strategy for Profiting from the Coming Rise in the Stock Market* in September 1999 with the following description: "This book will give you a completely different perspective on stocks. It will tell you what they are really worth—and give you the confidence to buy, hold, and profit from your investments. It will convince you of the single most important fact about stocks at the dawn of the twenty-first century: They are cheap" (3). This prediction turned out to be the worst since economist Irving Fisher proclaimed at the beginning of the Great Depression that stocks had reached a permanent high plateau. It also ranks among the worst investment advice in history. Not satisfied, Glassman and Hassett reemphasized their prediction that stocks were undervalued and predicted that stock prices might soon skyrocket in price:

> Throughout the 1980s and 1990s, as the Dow Jones industrial average rose from below 800 to above 11,000, Wall Street analysts and financial journalists warned that stocks were dangerously overvalued and that investors had been caught up in an insane euphoria. They were wrong. Stocks were *undervalued* then and they are *undervalued* now. Tomorrow, stock prices could immediately double, triple, or even quadruple and still not be too expensive. . . . Stocks are now in the midst of a one-time-only rise to much higher ground—to the neighborhood of 36,000 on the Dow Jones industrial average. (1999, 3–4, emphasis in original)

Unfortunately for Glassman and Hassett, and especially unfortunately for readers who relied on their forecast, these predictions were made near the peak of the bubble, just before stock prices began to plummet. Besides being wrong about stock values, Glassman and Hassett were also wrong that analysts and journalists were warning the public that stocks were overvalued. To be sure, some were issuing such warnings, but most recommendations remained positive, and many were wildly bullish. Measures of "investor sentiment," such as the number of investment advisors who are bullish compared to the number who are bearish, is a contrary indicator for the stock market in that "sentiment" is negative at the beginning of a bull market and highly positive or bullish just before the stock market declines. In fact, analysts

who were bearish during the height of the boom often found themselves shunned by the media, if not out of a job, whereas all the media attention and economic rewards flowed to analysts who were bullish even after the market turned negative (North 2002).

Glassman and Hassett also provided readers with their big stock pick, which they labeled "A Glorious Company within our Comfort Zone." They described Automatic Data Processing, Inc. (ADP) as a "magnificent company that the market has consistently underpriced." Unfortunately for readers who acted on this advice, the price of ADP stock reached its peak near $70 per share during 2000 and more recently has been trading at less than half its previous value. The only good thing that might be said for this stock pick is that the ADP has done far better than many other stocks touted by professional stock analysts. To be sure, ADP and the Dow Jones Industrial Average might ascend to historic and mind-boggling heights over the next decades, but in the short run readers who followed Glassman and Hassett's "courageous" advice have lost a large percentage of their wealth.[4] To be fair to the authors, one notes that the Dow Jones Industrial Average has yet to lose much ground relative to the NASDAQ since the book was published, that the prediction of Dow 36,000 is a long-term forecast, and that "it is impossible to predict how long it will take" to be achieved (Glassman and Hassett 2002).

Some traditional investment advisors were quick to warn against Glassman and Hassett's recommendations. In particular, Charles Murray of the American Institute for Economic Research noted that such books are often a harbinger of disaster: "At the time (October 25, 1999), we said that books such as *Dow 36,000* seem mainly to make their appearance at or near market tops. In fact, investors had their choice among *Dow* titles in the past year: David Elias explained why the Dow will reach 40,000 in *Dow 40,000*; whereas Charles W. Kadlec and Ralph J. Acampora predicted (although wouldn't guarantee) that the Dow will eclipse 100,000 in—you guessed it—*Dow 100,000*" (2000, 63).

Murray's traditional approach led to the conclusion that the market was in a bubble and to a prediction that a crash or bear market was imminent. Readers could have protected themselves against the crash by acting on Murray's advice:

> Readers of these *Reports* know that for some time we have noted that the market's valuation of common stocks has been markedly high in relation to *most* measures used in security analysis—cash flow, book value, earnings, etc. However, the historical record does not tell us what the "right" valuation is, only that the current valuations are exceptional. We have also observed that the current bull market is of unprecedented duration and magnitude and that at some point a genuine bear market or even crash can

4. Kevin Hassett followed up in July 2002 with *Bubbleology: The New Science of Stock Market Winners and Losers*.

> be expected. Again, at what point this valuation becomes unsustainable is far from clear. (2000, 64, emphasis in original)

Murray noted that the traditional valuation methods have shortcomings and that for larger purposes, such as the prevention of bubbles, valuation techniques do not tell us what causes bubbles in the first place.

Another good foil to Glassman and Hassett is economics and financial writer Christopher Mayer (2000), who investigated and wrote about their book during its heyday. He concentrated on the meaning of the term *overvalued*—not so much on how to determine when something is overvalued numerically, but on the cause, meaning, and effect of overvalued stocks. Specifically, he criticized the notion of perfectly rational and efficient markets and showed how markets can, in a sense, lose their rationality. First, Mayer introduced the general mindset of the new paradigm that dominated the view of the market during the bubble, and he linked Glassman and Hassett to this mindset: "Are stocks overvalued? One answer is that it depends on whom you ask. Those who are buying and holding apparently think that they will be able to sell them at higher prices. Maybe they believe in a new paradigm where the old yardsticks of value are useless. James Glassman and Kevin Hassett recently wrote a book called *Dow 36,000* in which they maintain that the stock market is currently undervalued." Next, he made his own prediction, linking Glassman and Hassett with the hapless Irving Fisher. More important, he explained specifically why a bubble existed, rather than arguing simply that the market was overvalued by some historical yardstick:

> Looking back, future financial historians will likely relate the Glassman-Hassett thesis to Irving Fisher's famous proclamation in 1929 that "stock prices have reached a permanent and high plateau." James Grant likes to say that there are three common features of a bubble: one part fundamental (i.e., a technological revolution), one part financial (i.e., a surge in money and credit) and one part psychological (i.e., a suspension of belief in traditional valuation measures). All the ingredients would appear to exist in the current bull market.
>
> As is often said, only time will tell. Unfortunately, no theory of cycles or bubbles can tell us precisely when it will all end. Maybe twenty years from now, we will be able to definitively state whether these prices were reasonable or whether the boom time of the 1990s ended in a bust. From where I sit, heeding the teachings of the Austrians, I'll place my bet on the latter.

One of the earliest prognostications regarding the boom and bust was certainly the one mentioned by analyst James Grant, the editor of *Grant's Interest Rate Observer*. Grant closes his book *The Trouble with Prosperity*, written in May 1996 "at what may or may not prove to be the ultimate peak of the speculative frenzy," with the following conclusions:

> Predictably, the risks to saving are the greatest just when they appear to be the smallest. By suppressing crises, the modern financial welfare state has inadvertently promoted speculation. Never before has a boom ended except in crisis. In anticipation of just such an outcome, a skeptical Seattle investor, William A. Fleckenstein, founded a hedge fund in 1995 to buy cheap stocks and to sell dear ones. He named it The RTM Fund, the initials signifying "reversion to the mean." They may be the financial watchwords for the millennium. (1996a, 314–15)

Grant continued to warn investors about the stock-market bubble in his investment newsletter, to provide detailed explanations of the cause of the bubble, and to chronicle the relevant statistics.

Another early analysis came from Tony Deden at Sage Capital Management, who identified the bubble and its causes and predicted a crash:

> We fully expect a decline in securities prices and the almighty dollar over the next years. . . . There is no new paradigm. Economic sins have consequences. Hopefully, perhaps even economists will learn that inflation is measured by the growth in money and credit rather than in an idiotic index of consumer prices. They might even learn that growth achieved with smoke and mirrors ultimately leads to ruin.
>
> Is the incredible rise in securities prices since 1995 a reflection of real value created or is it merely a bubble? Is this really a second Industrial Revolution that changes our very basic economic assumptions or is it not? Is it a "new paradigm"? A world of fast growth, record unemployment and no apparent inflation? Have economic laws been suspended? And if not, how could so many people be so wrong? (1999)

Writing near the peak in the bubble, Deden declared with regard to the size and magnitude of the distortions:

> Let there be no doubt, that what we are witnessing is, indeed, history's greatest financial bubble. The indescribable financial excesses, the massive increase in debt, the monstrous use of leverage upon leverage, the collapse in private savings, the incredulous current account deficits, and the ballooning central bank assets all describe the very severe financial imbalances which no amount of statistical revision nor hype from CNBC can erase.

He was equally clear and unequivocal about the cause of the bubble and related distortions in the economy:

> Their cause is not the fault of capitalism as it has been suggested, but an excessive amount of money and credit created by central banks. Yet, this

> seems to escape the understanding of those who will, in one day, convene congressional hearings to determine what caused this destruction. The culprit is, as it always has been, the same organization, which professes interest in bringing about price stability and low inflation: The Federal Reserve Bank and its policies of money market intervention, credit creation and loose money.

Economist Jörg G. Hülsmann, writing in August 1999, provided an analysis and prediction of the stock-market bubble based on the post-1980 monetary regime in the United States. He concluded that the market boom had been created artificially and that it was doomed to fail: "You do not need a rocket scientist to predict the bitter end of this evolution. . . . Just as any other state of affairs that has been artificially created and maintained by inflation, the present system bears in itself the germs if its own destruction. It will experience a flat landing of which even the most recent crises in South-East Asia, Russia, and Latin-America only give a weak foretaste" (1999, 140).

Hülsmann discussed the alternative courses of action that the Fed might take to deal with the boom and bust in the stock market. The first is to continue inflating money and credit, the second to stop that inflation. However, he concluded: "In any case the crisis is therefore inevitable. It breaks out as soon as the price-enhancing effect of the inflation is no longer neutralized through currency exports or other factors. (And of course the crisis accelerates when the inflationary currency streams back from abroad)" (1999, 147). From these arguments, he concluded that the system of boom and bust based on national fiat currencies must eventually come to an end and that either path of economic policy will entail extreme changes in our political economy:

> It is but a question of time until North-America and Europe also reach the dead end of an economy built on fiat money. At that point, however, there will be nobody to extend the life span of this shallow game through further credits and further inflation. Either the western economies will then be under total government control, as it has already been the case in German National Socialism, or we are expecting a hyperinflation. It may take some more years or even decades until we reach this point of time. It can be further delayed through a currency union between Dollar and Euro (and Yen?). But it is and remains a dead end street, at the end of which there is either socialism or hyperinflation. Only radical free-market reforms—in Rothbard's words: return to a commodity money such as gold on a free currency market and a complete ban of government from monetary affairs—lead us out of this. (1999, 154)

If Hülsmann is correct, not just about the end of the bull market but about the economic and political consequences of the bust, then the issue of stock-market bubbles,

their cause, and their consequences takes on a critical importance for our understanding of the future course of the overall political economy.

Hülsmann is not the only economist who traced this business cycle back to the post-1980 monetary regime of deregulation. At the height of the bull market, allies of the Austrian school of economics held a conference at which most participants emphasized the role of the Fed in creating the boom. In particular, Frank Shostak highlighted the impact of the central bank's policies:

> Today's prevailing view is that central banks and other policy makers are knowledgeable enough to pre-empt severe economic slump. . . . Notwithstanding the popular view, the US economy is severely out of balance. The reason for this is the prolonged loose monetary policies of the US central bank. The federal funds rate which stood at 17.6% in April 1980 fell to the current level of 5%. At one stage in 1992 the rate stood at 3%. The money stock M3 climbed from $1824 billion in January 1980 to $6152 billion at the end of June 1999. In a time span of less than a decade it grew by over 200%. Another indicator of the magnitude of monetary pumping is the Federal debt held by the US central bank. It jumped to $465 billion in the first quarter of 1999 from $117 billion in the first quarter 1980, a 300% rise. Obviously the sheer dimension of the monetary pumping and the accompanied artificial lowering of interest rates has caused a massive misallocation of resources which ultimately will culminate in a severe economic slump.
>
> The intensity of the misallocation of resources was further strengthened with the early 1980's financial de-regulation. The idea of financial deregulation was to free the financial system from the excessive controls of the central bank. It is held that freeing financial markets will permit a more efficient allocation of economy's scarce resources, thereby raising individual well being. It was argued that the overly controlled monetary system leads to more rather than less instability. Nonetheless, rather than producing more stability, the "liberated" system gave rise to more shocks.
>
> The 1980's financial de-regulation resulted in a reduction of the central bank supervisory powers. The weakening in the central bank controls gave impetus to a greater competition in the financial sector. This in turn through the fractional reserve banking sparked the unrestrained creation of credit and money out of "thin air." The money out of "thin air" in turn has been further processed by creative entrepreneurs, who have converted this money into a great variety of financial products, thereby contributing to a wider dissemination of the monetary pollution. (1999)

On the basis of his analysis of the then-current economic utopia, Shostak concluded that the economy was poised for bad times ahead: "It seems therefore that the chaotic

state of world financial markets will continue to get worse, unless gold is allowed to assume its monetary role. Notwithstanding that[,] there is very little reason for being optimistic in the current economic climate" (1999).

The most forceful prediction of both a stock-market bubble and stock-market bust came from bearish economist George Reisman in an article published on August 18, 1999, at the height of the stock-market bubble. He began with the observation that the conditions of reality were clearly askew, an observation that most market commentators made only in hindsight:

> Clearly, something is wrong. It simply cannot be that we can have a society in which everybody lives by day trading in the stock market. While the stock market does make an important contribution to capital accumulation and the production of wealth, it is far from an unlimited one, and its contribution is not enlarged by hordes of essentially ignorant people dabbling in it on the basis of tips and hunches. Yet such an absurd outcome of practically everyone being able to live by means of buying stocks cheap and selling them dear is what is implied by an indefinite continuation of the bull market. As a result, it is inescapable that the bull market must end.

For Reisman, predicting stock-market bubbles and crashes is not a matter of measurement, but of cause and effect. He made the commonsense observation that to understand the cause of a stock-market bubble is to understand its ultimate effect: "To understand precisely how and when this will come about, one needs to understand what has been feeding the current bull market. Then one can understand what will put an end to it—what will constitute pulling its foundation out from under it." He found the ultimate cause of extreme movements in the economy in general and in the stock-market bubble in particular to be government intervention in connection with the money supply and interest rates: "The only thing that explains the current stock market boom is the creation of new and additional money. New and additional money, created virtually out of thin air, has been entering the stock market in the financing of corporate mergers and acquisitions and of stock repurchases by corporations" (1999). Shunning issues of technological change and psychology, Reisman concluded that not only was excess financing for the stock market the cause of the bubble, but that this money ultimately finds its way throughout the economy, spreading higher prices and bringing the stock market back to reality. He therefore separates technology and normal economic growth from inflation-financed bubbles in stock prices. Obviously, both phenomena occurred simultaneously and mingled during the 1990s.

> The increase in the quantity of money exerts its favorable effect on stock prices only when, as in the last few years, the increase is concentrated in the stock market and has not yet sufficiently spread throughout the rest of the

> economic system. When it does spread throughout the economic system and begins substantially to raise commodity prices, the effect on the stock market becomes negative.
>
> The application to the stock market is that the market will stop rising as soon as the Federal Reserve becomes sufficiently alarmed about the inflationary flooding of the economy as a whole that emanates from the stock market bathtub so to speak. When the Federal Reserve is finally moved to turn off the water—the new and additional money—flowing into the stock market, its rise will be at an end. Indeed, not only will the stock market stop rising, it will necessarily suffer a sharp fall.
>
> The inescapable implication is that sooner or later, the stock-market boom must end. The bubble must break. (1999)

Reisman, it appears, made an accurate analysis of the stock market, identified the cause of the bubble, and accurately predicted that the stock market would crash (for an updated analysis, see Reisman 2000).

Irish economic and stock analyst Sean Corrigan (1999) also provided well-timed prognostication of the bubble and deep insight into its cause. He compared conditions during the fall of 1999 to those during the late summer of 1987, the Japanese bubble of the late 1980s, and the "roaring Twenties" in the United States. He dismissed the idea that technology and all the musings of a "new paradigm" could have been responsible for the run-up in stock prices in the late 1990s. In his view, debt of all kinds was expanding at high rates at a time when the saving rate was plummeting. The solution to this economic paradox was straightforward for Corrigan. He blamed Alan Greenspan for overly generous provision of high-powered money, and he then proceeded to explain the impact of this highly expansionary monetary policy:

> Monetary pumping on this order, as the Austrians will tell you, leads to serious distortions in the price structure of an economy which cannot be captured in crude, aggregate, index numbers. These distortions between the value of goods, present and future, lead to mal-investments and a clustering of false decisions. Factories built and productive processes put in train based on a market rate of interest artificially lowered by the effulgence of fiduciary media are not backed up by real savings and thus become misaligned with a propensity for consumption which has, if anything, intensified. (1999)

What effect do these distorted prices and investments have? Corrigan went on to make a bold and far-reaching prediction:

> A raft of "entrepreneurial errors" lies ahead. This means not only the prospect of half-finished malls, hotels and offices, but also completed, but

> now distinctly sub-par undertakings: businesses and plants which cannot possibly earn the returns projected at inception. Less visible, though more widespread, such an overhang will depress returns on capital where they do not wipe it out completely. The credit expansion, once it draws to its inevitable end, will impoverish everyone, everywhere. (1999)

Writing at the end of the boom, bearish economist Hans Sennholz described both the direct cause (credit creation by the Fed) and its effects in creating the boom in both the stock market and the general economy, taking special note of the explosion in the use of derivatives.

> Surely, the American economy looks very dynamic and the value of the stock market is the highest in U.S. history, but the private economy is incurring the biggest financial deficits since the Second World War. The country is suffering record current account deficits with net external liabilities now exceeding 20 percent of GDP and rising.
>
> Wall Street may be celebrating the decline in government deficits, but other debts continue to grow by leaps and bounds. According to the Fed's Flow of Funds, household debt (mainly home mortgages) is growing at an annual rate of 9.25 percent, total household debt as a share of personal income now exceeds 103 percent. Business debt is soaring at a 10.5 percent rate. Corporate debt of non-financial firms is rising at a 12 percent rate, the fastest in more than a decade.
>
> While some of these debts are going into new investments, much is spent on share buybacks. In short, corporations are going into debt to boost their share prices. Margin debt in the stock market is growing faster than any other type of credit. In 1999 it soared by 46 percent, now exceeding $206 billion, which is the highest in U.S. history. Unfortunately, if this growth of debt should come to a halt, or merely slow down, it may break the fever of the boom and usher in the readjustment. (2000)

Sennholz went on to describe the precarious position of the economy and the stock market. He described the contraction in the market as an inevitable consequence of the credit-induced boom and as something the Fed had no power to fix:

> The American economy is in its 10th year of cyclical expansion, which is the longest on record. A grave risk in this setting is a sudden fall in share prices, a bear market, which would evoke a dramatic fall in consumer confidence and demand. Since consumption is driving more than two-thirds of American production and growth, a sharp decline of consumer demand would soon lead to a decline in production, which may trigger an international run from the dollar. In order to stem such a run and attract

> enough foreign capital to cover the current account deficit of more than 4 percent of GDP and carry external liabilities of more than 20 percent of GDP, the Federal Reserve would have to raise its rates. But such a raise at a time of falling stock prices and falling output would soon aggravate the decline and lead to a painful recession. The present pleasant scenario of rising productivity and income, high stock prices and a strong dollar would soon turn into the opposite—falling productivity and income, falling stock prices and a weak dollar, declining imports, rising inflation, rising interest rates, and rising unemployment. The longest economic boom in history would give way to a long recession. (2000)

Just as clearly, the cause of the credit creation and therefore the boom is the Fed and the policy of central bankers: "The economic maladjustments due to many years of monetary manipulations by the Federal Reserve System are the prime source and mover of the inevitable readjustment. Once the market structure no longer reflects the unhampered choices of all participants, the readjustment is unavoidable. In the end, the laws of the market always prevail over the edicts of political controllers and regulators. They even reign over the wishes of a few central bankers. Surely, government officials and central bankers have the power to lessen or aggravate the stresses of readjustment as they have the power to interfere with the economic lives of their nationals" (Sennholz 2000).

At a time when many were still unsure about the causes and consequences of the initial features of the "bust," others such as William Anderson clearly saw the "beginnings of the end" and emphasized that this big cycle of boom and bust was nothing new to U.S. economic history.

> We have, supposedly, learned our lessons since the 1970s. Alan Greenspan knows more than previous Federal Reserve chairmen, Robert Rubin was a brilliant Secretary of the Treasury, the internet is providing new ways of doing business, and Bill Clinton has marvelously orchestrated the whole thing. The stock market is rising, and the government (or at least the current regime, according to Al Gore in his stump speeches) knows how to continue the prosperity. This time, we really are experiencing the New Economy.
>
> Pardon me if I dissent. If history tells us correctly, we are in our third "New Economy" in the last 80 years. The first episode of "prosperity forever" came in the late 1920s, as the bull market, low unemployment numbers, and general good times led newly-elected President Herbert Hoover to declare, "In no nation are the fruits of accomplishment more secure." We know the rest of that sorry story. (2000, 5)

Anderson was careful to distinguish the cause of the boom from the normal or natural features of economic growth. He also distinguished between a potential catalyst of the bust (the Microsoft trial) and its underlying causes.

> But for all of the high-technology wonders and the gains made from deregulation, the one substantial part of the New Economy consists simply of an economic boom in all that the phrase implies. The engine behind the boom is also the locomotive behind the inevitable bust: the Federal Reserve and its inflationary policies.
>
> As things stand currently, the once-vaunted bull market is in flux. This is partly due to the government's arrogance in believing it could attack Microsoft without harming other high-technology firms that have been the most visible in the current economic expansion. That the NASDAQ has lost much of its value since Janet Reno's Department of Justice [DOJ] won the first round of its attempt to dismember Microsoft bears testament to this administration's foolishness regarding economic matters.
>
> But even without the DOJ's Microsoft follies, the high-technology sector of the economy faces real problems. First, the bubble that pushed so many of the "dot.com" initial offerings into the stratosphere had burst even before Reno's pyrrhic victory. Second, the malinvestments as described by Ludwig von Mises and Murray Rothbard that occur as the result of wildly expansive monetary policies by the Fed have been centered in the high-technology sector. The growth of new money that is the signature of inflation can come only through the fractional-reserve banking system in the form of loans, which, as noted earlier, have found their way into high technologies, real estate, and the stock market.
>
> Should a large number of high technology investments go bust, or if profit rates disappoint potential investors, the new money will stop pouring into that sector. By that time, we will be seeing an increase of commodity prices, and inflation will be recognized as a serious problem. The next stage will be the beginning of the recession, as the malinvestments that grew willy-nilly during the period of monetary expansion will have to be liquidated.
>
> The US economy the past five years has been able to absorb a large amount of new money, much more so than it could have done two decades ago. That does not mean, however, that it is inflation-proof or is impervious to malinvestments. The Misesian theory of the business cycle is a comprehensive theory. It has not lost its explanatory power in 2000 any more than it was irrelevant in 1969 or 1929.
>
> While we may be currently celebrating a record boom, we have not overturned the laws of economics. No doubt when it happens, the usual Keynesians in the halls of academe and in the media will blame high interest rates and the Fed's refusal to expand credit. In truth, there will be another explanation, one that people are ignoring now and will ignore then. (2000, 6)

Supply-side economist Jude Wanniski (2000) attributed the bust in the stock market during April 2000 to tax liabilities accrued from capital gains in the late 1990s.

Investors who had capital gains in 1999 had to pay taxes on those gains on April 15, and Wanniski suggested that investors selling shares in order to pay their taxes ignited the decline in the prices of the stocks composing the NASDAQ index. Although this observation provides insight into what might have initiated the bursting of the bubble, Wanniski himself did not believe in financial bubbles and encouraged his clients to jump back into the market after tax season was over.

Another important prediction came from economists Stan Liebowitz and Stephen Margolis, who were considering questions of competition and antitrust policy in high-technology markets. They correctly described these markets as displaying a speculative bubble near the apex of the bubble: "This is not to imply that a speculative bubble, which seems the proper description for Internet stocks as this book is being written (spring 1999), is required to assure sufficient financing" (1999, 115). Liebowitz later provided a more detailed examination (published after the bubble had burst) of why the bubble happened:

> The book . . . focuses on understanding why financial events went so awry. . . . Many of the prognostications about the internet—rapidly increasing number of users, rapidly increasing advertising revenues, rapidly increasing sales—fertilized wildly optimistic prognostications for the performance of Internet firms, as if a virtual cornucopia of wealth would come streaming down upon investors in those companies [and it did for those lucky enough to get in early]. . . . But even if all the prognostications of users and revenue growth had been true, as some of them were, that would not have assured the rosy financial scenario that so many investors and analysts anticipated. (2002, 2).

Conclusions

> Such is the exuberance on Wall Street that only a brave man insists that the American stockmarket is overdue for a crash. Down the long history of bubbles ready to burst, it was ever thus.
>
> **—*The Economist*, March 25, 2000**

The foregoing survey of predictions regarding the stock-market bubble of the 1990s was conducted against a background condition that economists do not agree on either the role of prediction in economic science or the causes of stock-market bubbles. The purpose was to identify who correctly ascertained the existence of a stock-market bubble and who correctly predicted a stock-market crash. The appendix at the end of this article provides a timeline of additional quotes reflecting insight, unawareness, or confusion regarding the macroeconomic contours of the bubble and the crash. More important, however, this survey has examined how the boom was identified and what its cause was. These

issues are important because stock-market booms and busts entail massive transfers and financial losses in the economy, and when associated with severe downturns in the business cycle, they can cause significant economic costs, distortions, and inefficiencies. Economic crises have often provided the occasion for a ratcheting upward of the size, scope, and power of government (Higgs 1987). In extreme cases, such radical changes in financial and economic conditions may give rise to social upheaval and political instability.

In general, the correct predictions fall into two categories. Those in the first group were based on the analysis of valuation. Using standard measures of stock-market value, such as the price-to-earnings ratio (P/E), economists such as Robert Shiller and a small number of market analysts who were bearish in 1999 concluded that the stock market had become extremely overvalued and therefore was experiencing bubblelike conditions and was fated to decline steeply. Unfortunately, most of these forecasters did not provide detailed economic analysis of their predictions. The use of valuation measures is indeed helpful, but such measures are essentially only tools of historical analysis for comparing ratios and percentages from one time period to those from another period or to historical averages. In the recent bubble, most bulls always found a way to adjust the valuation measures to account for modern conditions and to make the stock market appear undervalued.

The second group of correct predictions came from outside the mainstream of the economics profession. Most came from economists associated with the Austrian school of economics, including academic economists, financial economists, and fellow travelers of the school. These predictions began to come forth in 1996 and continued until after the downturn in the stock market, but most of them occurred close to the peak in the stock markets. Austrians tend to have a negative view in general, and they are quick to emphasize the negative aspects of economic conditions, but they also distinguish bubbles and business cycles clearly from other economic phenomena and trends. Given that the Austrian economists are both relatively few in number and marginalized in the profession, their dominance in making correct predictions seems to be something of an elephant in the soup bowl, especially in light of their general disdain for forecasting and for the mainstream's requirement of accurate prediction. In my survey, I tried to avoid the inclusion of "permabears" or analysts who are perpetually bearish on the stock market. It should be noted, however, that James Grant is an admitted permabear and that his prediction came "too early" in terms of market timing. The predictions are summarized in table 2.

It is especially noteworthy that all the Austrian predictions provided an economic explanation of the bubble and that their explanations were relatively consistent across the group. To generalize, the Austrians perceived the Fed to be following a loose monetary policy that kept interest rates below the rates that would have prevailed in the absence of that policy. Individual writers emphasized the Fed's willingness to bail out investors consistently during the 1990s, thereby desensitizing investors to risk. As a result, a period of "exuberance" and wild speculation took place, culminating in the hysteria of a stock-market bubble. If the Austrian analysis is cor-

Table 2
Forecasts and Schools of Economic Thought

Name	Forecast	Date	School of Thought
Dean Baker	Bubble	1999–2000	Post-Keynesian
James Glassman	Dow 36,000	1999	Supply-sider
Kevin Hassett	Dow 36,000	1999	Supply-sider
David Elias	Dow 40,000	1999	Unknown
Charles Kadlec	Dow 100,000	1999	Unknown
Robert Shiller	Bubble/Bust	1999	Behavioral finance
Charles Murray	Bubble/Bust	2000	Valuation measures
Christopher Mayer	Bubble/Bust	2000	Austrian
James Grant	Bubble/Bust	1996	Austrian-Bear
Tony Deden	Bubble/Bust	1999–2000	Austrian
Jörg Hülsmann	Bubble/Crisis	1999	Austrian
Frank Shostak	Bubble/Bust	1999	Austrian/technical
George Reisman	Bubble/Bust	1999	Austrian-Bear
Sean Corrigan	Bubble/Bust	1999	Austrian
Hans Sennhotz	Bubble/Bust	2000	Austrian-Bear
William Anderson	Bubble/Bust	2000	Austrian
Jude Wanniski	Market Crash	2000	Supply-sider
Jerry Jordan	Bubble	1997	Monetarist
Llewellyn Rockwell	Bubble/Bust	1999	Austrian
Greg Kaza	Boom/Bust	1999	Austrian
Holman Jenkins	Buy and Hold	1999–2000	Business
William McDonough	Financial Stability	1999	President of N.Y. Fed
Economist magazine	Bubble/Crash	2000	Keynesian/Hayekian

rect, the Fed has been a significant source of financial and economic instability. This analysis also suggests that the Fed's bias toward keeping rates as low as possible may cause significant economic losses and that a better policy might be to let market forces determine interest rates without intervention.

Those who discovered the "boom" in the economy and the "bubble" in the stock market and who predicted either a "bust" in the economy or a crash in the stock market work within an analytical tradition dating back to Richard Cantillon, whose *Essay on the Nature of Commerce in General* was published in 1755. The Cantillon tradition was carried forward and extended in the works of Turgot, Say, Bastiat, Menger, Wicksell, Bohm-Bawerk, Mises, Röpke, Hayek, and Rothbard, and it is now a hallmark of the modern Austrian school of economics.

At the core of this mode of analysis is an emphasis on entrepreneurship and the study of what causes prices to rise and fall, encompassing wages, rents, profits, interest, and the purchasing power of money. With respect to the business cycle, the Cantillon tradition shows that disturbances in the supply of money and credit, especially when a monetary authority expands the supply of paper money, changes relative prices. Artificial reductions in interest rates encourage investment and increase the valuation of capital assets, longer-term assets increasing in value more than shorter-term ones. The resulting changes in the structure of production (buildings, technology, and the pattern of industrial organization) are called Cantillon effects. They occur during the boom, a phase when resources are misallocated, both to malinvestments and to misdirected labor. As relative prices correct themselves in the bust, resources are reallocated by mechanisms such as bankruptcy and unemployment. Capital-asset prices are extremely volatile during this process.

Although Austrian ideas have received more notice and attention in the financial media and in academic publications in recent years, a survey of economic textbooks at the undergraduate or graduate level would find hardly a word about Austrian business-cycle theory or about Cantillon effects. It may be too early for a complete revision of economics textbooks and too much to ask that economics professors rewrite their class notes, but it certainly is time at least to introduce these concepts in classrooms and textbooks so that students can consider an alternative paradigm and evaluate its merits.

Appendix: Some Other Predictions

- "The problem may . . . be . . . in asset [stock] markets, as suggested by historical episodes in this country, notably in the 1920s, and in Japan in the late 1980s" (Jerry L. Jordan, president of the Federal Reserve Bank of Cleveland, minutes of the Federal Open Market Committee meeting, November 11, 1997). As a voting member of the Federal Open Market Committee, Jordan voted unsuccessfully five times to raise interest rates, starting in 1998.

- "The arguments in favor a [*sic*] new Golden Age are generally not persuasive" (Zarnowitz 1999, abstract). Victor Zarnowitz is aware of the Austrian theory of the business cycle and considers it in his analysis.

- "At some point, and nobody knows when, the stock market is going to reverse its climb. It may even collapse" (Rockwell 1999, 4).

- "There is talk on Wall Street of a 'New Economic Paradigm,' that has repealed the business cycle. But surface appearances can be deceiving. . . . Eventually a recession will occur" (Kaza 1999, 20).

- "The claim by Glassman and Hassett to have found a new value for the Dow is a wonderful marketing gimmick, but it is the least important part of their book. The

authors are certainly right that Americans have gotten over their fear of the stock market—because the stock market works better than it used to. For investors, it has become safe to buy, hold, and forget" (Jenkins 1999–2000).

- "I recognize there is a stock market bubble problem at this point," and "I guarantee if you want to get rid of the bubble, whatever it is, [increasing margin requirements] will do it" (Alan Greenspan, minutes of the Federal Open Market Committee meeting, September 1996).
- "I think the banking system is functioning just about where I would like it to be—that is, appropriate willingness to take risk but with good, sensible judgments in general being demonstrated" (William McDonough, president of the New York Federal Reserve, qtd. by Reuters, September 26, 1999).
- "Such is the exuberance on Wall Street that only a brave man insists that the American stockmarket is overdue for a crash. Down the long history of bubbles ready to burst, it was ever thus" ("Bubble, Bubble" 2000, 84).
- "It is very difficult to definitively identify a bubble [in U.S. stock markets] until after the fact" (Alan Greenspan, speech at the Federal Reserve Bank of Kansas City's annual conference at Jackson Hole, Wyoming, August 30, 2000).
- "The present market collapse is different; it was caused by vastly overblown valuations. The stock market has been in a colossal bubble, a delusion born in the late 1990's that reached its zenith in 2000. While not uncommon, bubbles have always been a fact of market life, a byproduct of runaway human emotions" (Brady 2002).
- "There was a sense of frustration that we couldn't deal better with the asset-price bubble. . . . But I don't think anybody has come up with a strategy that people felt would have gotten the job done" (Federal Reserve governor Laurence Mayer as quoted in Vinzant 2002).
- "The difficulty with declarations claiming that large stock price moves are 'bubbles' or 'panics' is that they rely on perfect hindsight, typically generated only a few months or a year following the event. But investors do not have that luxury. They must price securities based on the information they have at the time they make their decisions" (Spiegel 2002, 5).
- "If not technology shocks or market pricing failures, what's driving the current business cycle? It's not terrorism or war. Terrorism doesn't exact sufficiently large direct costs to drive the economy; and it's hard to argue that its psychological effects have slowed growth, when the economy turned around in the quarter immediately following 9/11 and turned in its best performance in years in the quarter after that. Nor is there hard evidence that the prospect or reality of the war with Iraq punctured business investment and consumer spending" (Shapiro 2004).

- "In the boom cycle, people are not so much interested in a message that says: a bust is simply a necessary part of the business cycle. In a false prosperity, good economic ideas are marginalized. That's why Austrians should prepare right now to offer the best explanation when the tide turns, as it always does. Who knows? Maybe we'll find ways to make the bust intellectually profitable. In time, Austrian economics could be again seen as the mainstream theory. It should be" (Grant 1996b, 8).

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