

Irrational Exuberance? Not Entirely: Stock Market Gains as Rational Reactions to Economic Crises and Federal Reserve Stabilization Policy

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by

Robert A. Black
Houghton College

Abstract

On December 5th, 1996, Alan Greenspan raised questions about the possible irrationality of investor behavior in the US stock market. On October 8th, 1997, in testimony before the Committee on the Budget, U.S. House of Representatives, Greenspan warned against expecting future capital gains in the market to equal the unusually high previous gains. Nevertheless, from December 1996 to September 2000, the Dow Jones Industrial average gained an average of over 16 percent per year.

This paper reviews different explanations of the behavior of stock prices during the past four years. It also reviews the difficult predicament facing Greenspan and the central bank: a global liquidity crisis and exuberant traders in the domestic stock market. From a Biblical perspective, we are left to wonder whether wisdom would urge against a foolish, headlong pursuit of wealth or against a foolish, fearful refusal to stay invested.

Disclaimer:

This paper is meant to stimulate thought and discussion about the difficulties of central banking. It is not offered as a basis for future investment decisions and should not be used as such.

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Introduction

Federal Reserve Chairman Alan Greenspan, in personal comments during a speech in December 1996 and in official testimony before the U.S. Congress in October 1997, mentioned "irrational exuberance", apparently referring to the current mindset of investors in the U.S. stock market. Given that share prices of U.S. stocks have risen dramatically since then (even with a correction), what are we to make of his statement?

Academic economist Robert Shiller asserts in *Irrational Exuberance* (2000) that U.S. investors should remain troubled about Greenspan's description four years later. His argument is that the market was overpriced in 1996 and remains even more so in 2000. While stock valuations have risen rapidly since 1982, real earnings have not (Shiller 2000, see Figure 1.1, p. 6). Similarly, the price/earnings ratio for US stocks is even further out of bounds than it was in 1929, reaching close to 45 in 2000 (Shiller 2000, see Figure 1.2, p. 8).

Had an investor listened to Alan Greenspan on December of 1996 and gone to cash and stayed in cash, waiting for the coming crash, how would that investor have evaluated the decision by the summer 2000, when Shiller's book was published? Three and a half years is a long time on the sidelines. An impartial observer might conclude after the fact that remaining in cash was less rational than remaining in the market.

This article examines certain aspects of individual decisions to remain invested in US stocks. Remaining invested may eventually prove to be a bad guess, and hindsight may show that stock valuations were indeed irrational, compared to long-term averages. Yet historical conditions, not just historical outcomes, of the late 1990s contradicted the averages. And they did suggest that remaining invested in US stocks through the summer of 2000 was rational from the limited perspective of the individual investor who was willing to take risks and from the perspective of the institutional investors acting as agents for such risk takers.

The paper first examines what Greenspan said about irrational exuberance and the contexts of those comments. Then it reviews factors that apparently have caused investors to ignore Greenspan's warnings and evidence such as Shiller (2000) presents of an over-valued market. The paper then investigates more

carefully the bind in which history had placed Allan Greenspan by late 1996 and into 1997. In fact, Greenspan's own policy successes may well have contributed to the alleged irrational exuberance. A Biblical application suggests that, given our ignorance of the future, it is difficult to know whether to warn the Christian investor against playing a foolish and greedy game of brinkmanship or against being fearful and burying money in a pit.

When Greenspan Speaks

Much more than in the early or middle decades of the 1900s, we are all Fed watchers now. We watch with care the speeches and Congressional testimony of Federal Reserve Board of Governors' Chair Alan Greenspan. Financial markets await the announcements of the regular meetings of the Federal Open Market Committee that Greenspan chairs.

Because of the potential effects on asset-market valuations and interest rates, Greenspan and others at the Fed are quite careful about public and private pronouncements. For this reason, financial markets were shocked by his use of the phrase "irrational exuberance" in public comments in 1996.

A Question about Rationality

On December 5th, 1996, Greenspan offered "some personal perspectives on central banking" at the Annual Dinner and Francis Boyer Lecture of the American Enterprise Institute for Public Policy Research, in Washington, D.C. "[S]peaking only for myself," Greenspan included the startling phrase as part of a question, rather than as a direct assessment or stock markets. In line with the theme of his prepared remarks, he stated the matter as a question for central bankers:

Clearly, sustained low inflation implies less uncertainty about the future, and lower risk premiums imply higher asset prices of stocks and other earning assets. We can see that in the inverse relationship exhibited by the price/earnings ratios and the rate of inflation in the past. But how do we know when irrational exuberance has unduly escalated asset values, which then become subject to unexpected and prolonged contractions as they have in Japan over the past decade? And how do we factor that assessment into monetary policy?

The Market Reaction

Initially, these remarks sent stock markets around the world reeling. During the next trading session, the Nikkei index in Japan fell 3.2 percent, the German DAX shed 4 percent, and the Dow dropped 2.3 percent (Shiller 2000, p. 3). If not proof of the irrationality underlying stock values, it was certainly proof of the Fed chairman's power to move markets. The effect, however, was short-lived.

In October 1997, with stock market indices continuing to climb, Greenspan offered another troubling forecast for the stock market. Although his Humphrey-Hawkins report to Congress in July 1997 had been optimistic, his testimony before the Committee on the Budget, U.S. House of Representatives on October 8, 1997 was cautious again. In predicting lower federal tax revenues due to lower capital gains in the future, he said:

Aside from the question of whether stock prices will rise or fall, it clearly would be unrealistic to look for a continuation of stock market gains of anything like the magnitude of those recorded in the past couple of years.

US stock values, however, would not be stopped. From early December 1996 to early September 2000, the Dow Jones Industrial Average increased from the mid 6000s to the low to mid 11,000s. If you had invested \$1000 in an index of funds of the Dow Industrial Average on December 5th, 1996, and sold the stock on Wednesday, September 6th, 2000, you would have received back \$1757, approximately a 16.6% annual return.

After nearly four years, are we still to conclude that Chairman Greenspan's question and comment about stock-market values are accurate? And what purpose did he have in offering these comments about irrational exuberance that were, for a Fed chairman, quite unusual? In fact, such exuberance in the stock market can be explained in one of two ways. Either they reflect a rational response in the short run to the economic conditions of the time, regardless of long-term equilibria, or they reflect a rational assessment of long-term trends in either technology investment and labor productivity or the demographics of aggregate consumer spending in the US. Moreover, Greenspan's question and comment candidly reflect his predicament: he had one policy tool, monetary control, to influence at least two goal variables, global liquidity and asset market valuations.

Why Have Stock Prices Risen Above “Rational” Levels?

In economic terms, Greenspan and Shiller were concerned that stock prices were above their long-run equilibrium. Either they were correct, and we must explain the temporary nature of the high prices and the rationality of seemingly irrational pricing, or they were incorrect, and we must explain the long-term nature of the high prices. Let's consider both cases.

Causes of Higher Demand for Shares of Stock

If stock market values are above long-term equilibria as short-term factors push prices higher, investors may still be acting rationally. Complete rationality simply requires that investors are intentionally playing a game of brinkmanship, waiting till the last possible minute to get out. Such games may be foolish in a moral sense but are certainly not irrational for the risk taker. Incomplete rationality allows that investors may not have full information or may find new information difficult to reconcile with old standards of value.

In any event, the causes of these temporarily high share prices can be divided into factors that either increased demand for shares or decreased supply of shares. All of the factors examined here have purportedly increased the demand for stocks.

Baby Boomers Invest for Long Term: During the 1990s, the large group of Americans born from 1946 to 1965 were waking up to their need for more retirement savings. They have poured record amounts of money into the stock market and related mutual funds. Through crises and corrections, they seem to have heeded standard financial advice not to time the market, but to invest steadily in the market. Since many of these boomers are new to investing, they may simply not be paying attention to price/earnings ratios and other standard measures of market valuation.

Global Financial Crises: Successive rounds of the Asian currency and economic crises, beginning in July 1997 and continuing in the winter of 1998, and the Russian ruble crisis of August 1998 all caused a flight to quality. While the market for Treasuries benefited (especially the market for the shortest-term bills in August 1998), blue-chip stocks in the US also benefited as investors sought higher returns. Stocks may have seemed risky at the time but where else could investors put their money?

Booming Economy: A booming economy means growing corporate sales and corporate profits, encouraging even higher stock prices. For a variety of reasons, including low oil prices, low interest rates, and the wealth effects of a rising stock market itself, the US economy continued to boom throughout the last half of the 1990s.

The recession in Asia in 1998 dropped demand for oil, and the lower crude prices were a beneficial supply shock to the US economy. Interest rates drifted down from a peak at the end of 1994 to a trough in late 1998, stimulating borrowing and consumer spending. Wealthier consumers, watching their stock portfolios grow in value, also spent on big-ticket items out of their new wealth.

By 2000, however, oil prices and interest rates were higher, with the potential to cool investor demand for stocks. By September 2000, higher oil prices and interest rates were cooling the rate of growth of the US economy. The forecasts for third-quarter corporate earnings were not encouraging.

Perverse Effects in the Stock Market: Several perverse effects served to punish cautious investment advisors and fund managers, and to further stimulate the demand for stocks. The feedback between actual and expected stock prices creates one perverse effect. Two other causes involve behavior in the brokerage industry. A fourth involves the demands on fund investors to keep pace with rising prices in the broader market.

Wide expectations of rising stock prices cause demand to increase and prices actually to rise. If people form expectations of future price changes based on previous price changes, a feedback loop is complete. When actual and expected price changes feed back into each other, a rising market tends to perpetuate itself until a stronger shock to expectations overwhelms it (see Shiller 2000, pp. 60-68).

The stock brokerage industry also contributes to the ever rising demand with its promotion of stocks and punishment of naysayers. *Business Week* (2000) highlighted the industry's methods of hyping stocks in a recent cover story. In addition, Shiller (2000 p. 30-31) explains that, because brokers take punitive measures against analysts who recommend "sells" among their stock picks, the proportion of sell recommendations has fallen in the past few years. Both of these policies increase the demand for stocks.

While individual investors may be ignorant about market valuations in the long run, institutional investors cannot claim such ignorance. Even so, the ignorance of individual investors may overrule the wisdom of the fund managers. During 1998, certain stock-market mutual fund managers were in cash, waiting for a correction. The stock market, however, continued its steady advance. Even had they wanted to stay in cash, the managers could not because their investors were complaining about low rates of return that were not close to those of the index funds that tracked the market's performance. The managers' move back into the market would have further fueled the cycle of rising prices and rising expectations.

The Short Run Is Not Always Short: Taken together, these and other effects have supposedly caused stock prices in the short run to be higher than long-run economic factors would dictate. Why have such long-run effects persisted for four years? The short run may not be as short as we might think, increasing the rationality of a strategy to invest for short-run gains with hopes of accurately timing price swings. The longer the short run, the more the short-run strategy approximates a long-run approach.

Irving Fisher, the well-known American monetary economist who wrote *The Purchasing Power of Money* (1920), contended that long-run adjustments to a shock to interest rates in bond markets for example could take from five to ten years to complete. Monetarist studies in the 1970s suggested that five years was the minimum period for full adjustment of the aggregate levels of output and price to a monetary shock. Given the intervening but temporary factors that have increased demand for shares of stock, it is not unthinkable that long-run market adjustments could also take as long.

Why Stock Prices Could Be Accurate

If Shiller is wrong and stock prices are properly priced for the long term, how do we explain the irrelevance of old gauges of market valuation? One answer in the 1990s was that this is a new economy of the information age. Widespread investments in computers and information technology have dramatically increased the productivity of American workers. In his July 1997 Humphrey-Hawkins report to Congress, Alan Greenspan attributed the low-inflation, high-growth-rate economic environment in part to such a technological effect that raises the economy's speed limit or maximum growth rate with stable inflation. A second answer is that the current boom is driven by long-term demographic swings. According to this view, the boom will end only when baby boomers have reached a new stage in the life cycle of their consumption habits.

The Effects of a Higher Speed Limit: Advocates for the new-economy view contend that the US economy now has a higher speed limit. Instead of growing at three percent without higher inflation, capacity of the US economy can grow at four percent or more per year. The main reason for the higher speed limit is that investment in the new economy has increased the rate of growth of productivity of labor.

How would this affect stock values? A more rapid increase in output means that corporate earnings in the future will grow more rapidly than predicted under the old-economy models. While current stock values may bear no historical relation to current earnings, they are related to higher expected future earnings.

Challenges to the New View: Lawrence Meyer (2000), one of the governors of the Federal Reserve, has raised a serious theoretical objection to the new view. In a speech explaining that monetary policy was not restrictive but that it should be, he disputed the view that increased growth rates of GDP could be fully accounted for by a new economy.

Meyer asks, how do we know whether economic capacity is expanding at the same four to five percent rate of growth of actual GDP? If new-economy investments were causing capacity to expand that rapidly, unemployment would have remained fairly stable during the period. The increased national output would result from increased productivity of labor. If, however, new-economy investments were not keeping pace with an over-stimulated economy, then unemployment would be falling and businesses would be facing capacity limits in the labor market. Meyer's conclusion is that, because labor markets were indeed tight in the first quarter of 2000, with unemployment around four percent, the old economy is still with us.

Confusing the picture have been moderate inflation reports, now in the range of two percent for the GDP deflator and three percent for the CPI. If the economy is at full capacity, prices should be rising more rapidly. Moderate inflation points to an economy with excess capacity. Inflation, however, adjusts with a notable lag and has recently been moderated by global excess capacity in various industries, evidence that is consistent with, though not proof of, the old-economy view.

Shiller (2000) devotes two chapters toward dismissing this new-economy explanation of high stock prices. Chapter five identifies earlier such new-era bubbles in US history. They included the peak in stock price/earnings ratios in 1901, when analysts cited electrical innovations and widespread mergers as new-economy explanations of high stock prices (pp. 99-103). Between 1907 and 1920, however, share prices fell dramatically. Chapter six examines similar bubbles around the world. By analogy, Shiller contends that high-tech explanations of stock market values in 2000 cannot prevent the events that could burst this bubble also.

Shiller (2000, p. 97), by the way, attributes the new-era-economy to a 1997 *Business Week* cover story. That story, he reports, stemmed from Greenspan's remarks to Congress (July 1997) about the beneficial economic effects of investment in new technology. Greenspan was therefore supplying a theoretical basis for refuting his earlier

hints about irrational exuberance (December 1996). The conflict of his ideas reflects Greenspan's care in considering different evidences and points of view and his admission that we just don't know exactly what will happen next.

Harry Dent's Demand-Side Demographics: In a series of three books, most recently *The Roaring 2000s Investor* (1999), investment guru Harry Dent presents a demographic explanation for a continuing boom in the U.S. economy and in the stock market. He is predicting that the current boom will continue until 2008. As a result, Dent refutes Shiller's pessimism about the stock market.

As baby boomers mature, life-cycle effects on their consumption of goods and services will encourage higher aggregate consumption, faster growth in real GDP, and still higher stock-market values in the US. Dent predicts that the DOW will reach 2150 to 3500 by 2008.

After that, as boomer retirements increase, growth of consumer spending will slow, causing a protracted recession and falling stock prices. As the baby busters mature, Dent says, even falling interest rates won't sufficiently stimulate their spending on houses, cars, and other durable goods to prevent the crash.

For Dent, then, current stock-market prices are not out of bounds because they are based on future increases in economic activity and corporate earnings. Those investors who accept Dent's view will therefore perceive any volatility in stock prices as an opportunity to buy. Depending on your view, this will either further feed the fever overwhelming traders or will continue to move stocks to their appropriately higher levels.

Analysts may, indeed, be wrong about the new economy's higher productivity and about demographic trends causing ongoing increases in consumption expenditure. Nevertheless, it is impossible for market participants to know this for sure. Therefore these two views that justify long-term rises in stock market values may be merely two more short-run factors that have moved markets in the last half of the 1990s and into the year 2000. All this uncertainty makes a central banker's task even more difficult.

Alan Greenspan's Poor Predicament: The Cost of Success

To what extent is Alan Greenspan merely a victim of circumstances over which he had no control? He has, according to some reports, helped to create certain conditions that contributed to the exuberance of the mid and late 1990s. These were not all policy errors. In fact, his very successes contributed to the level and perceived rationality of the enthusiasm of Americans for stock market investing. Three distinct successes and one controversial intervention stand out.

October 1987 Posturing: During the stock market panic of October 1987, the payments system among banks in New York City and around the world nearly came to a stop. Banks feared they would have inadequate reserves if they paid obligations before receiving expected but now uncertain payments. In this setting, Greenspan announced

that the Fed stood ready to make whatever discount loans were needed to keep the system liquid. That was all the markets needed to hear. The Fed made no unusual discount loans that day.

As valuable as that action was in the short-run, Greenspan's willingness to stabilize the payments system could also be interpreted as a willingness to bail out investors. If the market interpreted his actions in that way, such a signal would for the future imply a similar willingness to bail out the stock market. This interpretation would lower perceived risk in stock market investing, increasing the demand for stocks during the 1990s.

Successful Anti-Inflation Policy: When Greenspan took up the Chair of the Fed in 1987, inflation was on the increase. Between 1986 and 1990, the rate of increase of the price deflator GDP rose from 2.6 percent to 4.4 percent. As an inflation hawk, he saw keeping inflation low as the Fed's first priority. Gradually, the Fed wrung inflation out of the economy, contributing to the 1990-91 recession, but pushing the percentage increase in the GDP deflator back down to 2.0 percent in 1997.

Greenspan's success in keeping inflation low, however, had an unintended consequence. His reports that inflation could be on the rise due to capacity limits in the economy went unheeded. Stock traders would normally have worried that higher inflation would lead the Fed to raise interest rates, causing demand for shares and share prices to fall. Instead, traders seemed, according to *Business Week* (Miller, Cohn, and Coy, April 3, 2000) to have so much confidence in him that they didn't believe Greenspan's inflation alarms.

Global Financial Instability: After the Asian crisis of 1997 and the Russian-ruble crisis of 1998, Greenspan's increasing concern with global financial instability put him in the most difficult predicament of all. The intensity of his concern is apparent in his statements to the Kansas City Fed's conferences on global financial crises and stability (see FRB Kansas symposia, *Maintaining Financial Stability...*, 1997 and *New Challenges for Monetary Policy*, 1999; see also Meyer 1999 and Greenspan 2000).

Traditionally, the Fed did not see itself as responsible for stabilizing asset prices, such as share prices. In 1999, however, Greenspan was especially clear about the potential for higher asset prices (and corresponding liability values) to destabilize the economy:

As the value of assets and liabilities have risen relative to income, we have been confronted with the potential for our economies to exhibit larger and perhaps more abrupt responses to changes in factors affecting the balance sheets of households and businesses. As a result, our analytical tools are going to have to increasingly focus on changes in asset values and resulting balance sheet variations if we are to understand these important effects. Central bankers, in particular, are going to have to be able to ascertain how

changes in the balance sheets of economic actors influence real economic activity. (*New Challenges...*, 1999; see Greenspan, "Opening Remarks," p. 1)

The difficulty of the central bank's predicament in 1997 and 1998 was that it was caught between contradictory forces. On the one hand, a global recession and international liquidity crisis required monetary easing, while, on the other hand, reining in a runaway US economy (if it were indeed a hyperventilating old economy) required monetary restraint. Higher stock market prices were then causing a wealth effect on consumption, just the type of influence of asset prices on economic activity about which Greenspan had spoken. The wealth effect of higher consumption had the potential to cause more rapid economic growth and a re-ignition of inflation that would complicate policies to promote global liquidity.

Greenspan and the Fed apparently decided to favor monetary ease and provide liquidity to the global financial system. Yields on both the 3-month Treasury bill and the 10-year Treasury note dropped dramatically in the second half of 1998. While this was no doubt encouraged by a flight to quality in the midst of the bond-market turmoil caused by Long Term Capital Management's (LTCM's) crisis, the Fed ratified the lower short-term rates for nearly a year. Low interest rates in the aftermath of the Asian and Russian crises further promoted search for investment opportunities and probably further fueled the rise in venture-capital funding and demand for US stocks. LTCM was itself a separate matter.

LTCM Negotiations and Moral Hazard: LTCM was speculating heavily in bond markets, betting on narrowing bond-yield spreads when the Russian ruble crisis sent spreads to historic highs. Alan Greenspan's concern and the Federal Reserve Bank of New York's apparently active participation in the bailout of Long Term Capital Management during the ruble crisis in 1998 further enhanced the Fed's reputation for aiding financial markets in distress.

Critics claimed that the Fed bailed out its "friends", while the Fed contended that it only provided a meeting place and a few cups of coffee. Its concern was that bond markets were ceasing to function, as indicated by huge spreads between short-term Treasury-bill yields and corporate bond yields.

In any event, the perceptions of stock market traders could hardly be more encouraged. The Fed would bail them out too. Once again, Fed behavior lowered the perceived risk from falling share prices, thereby increasing the potential for moral hazard in financial markets. Moral hazard refers in part to the increasingly risky behavior of people after they know they have been insured against failure and catastrophe.

In a speech on April 3, 2000, Greenspan demonstrated his awareness of this conflict between preserving financial stability and encouraging more risky behavior. He compared the occurrence of a severe crisis against which the Fed should insure markets to a hundred-year flood.

Hundred-year floods come only once every hundred years. Financial institutions should expect to look to the central bank only in extremely rare situations.... Clearly, to choose the distribution of risk-bearing between private finance and government is to choose the degree of moral hazard.” (Greenspan 2000)

Ignoring the deterministic statement about probabilistic events, we can sympathize with his attempt to undo the effects of past actions and to correct market perceptions about alleged bailouts, as in the case of LTCM.

Conclusions and Biblical Applications

The key conclusions of this paper include the following: a speculation as to why Alan Greenspan mentioned “irrational exuberance” in December 5, 1996, a thought on the rationality of investors in the late 1990s, and a comment on the dilemma of applying Biblical truth to this situation.

Regarding Greenspan’s Predicament

Between 1996 and 1998, in the midst of minor financial crises (Greenspan 1996) and major financial crises (Asia in 1997 and Russia in 1998), Alan Greenspan had only one lever with which to influence two key economic variables: global liquidity and stock-market valuations. Mathematical theory of optimal control suggests that, with only one control variable, you can only optimize the value of one goal variable. This is certainly true when the control variable—the ease or tightness of monetary policy—has contradictory effects on the two goal variables.

It appears that on December 5th, 1996, Greenspan choose to pick up a second lever: the jawbone. He decided to supply liquidity to US and international financial markets, while trying to talk stock prices down. A difficulty was that the market apparently has used Greenspan’s own speculations in July 1997, about the effects of technological change and new-economy investment, against him. Historical events and perceptions about the Fed’s willingness to rescue financial markets from trouble also subverted his talk.

Rational Investors or Not?

The interaction of these historical factors in the US economy and financial markets especially has created an unusually unbalanced set of forces on stock prices. Given uncertainties about the new economy, the flood of domestic and foreign funds into the market, and the other factors such as reductions of the inflation and risk premiums, investor behavior had clearly rational aspects to them. Rationality does not mean always forecasting correctly, nor does it mean always taking the long view.

While investor behavior has been at least in part a rational response to economic conditions, it also has increased the potential instability in the stock market. This instability is best illustrated by the dichotomy between the short-run costs to fund

managers of being out of an equities market that is near but not at its peak, and the long-run costs of inattention to market fundamentals. The reasons for Greenspan's and Shiller's concerns are that the potential macroeconomic costs of such brinkmanship are quite high.

Biblical Application

The application of Biblical belief to this part of financial history is two-edged. Scripture speaks against both a foolish, headlong pursuit of wealth (Proverbs 1:19; 15:27) and the foolish, fearful refusal to put money to productive use (Luke 19:12-27). The question is whether at a particular point in time we are to encourage the Christian investor to have the confidence to continue with long-range plans or to discourage the Christian from pursuing foolish games of brinkmanship where the last out will be the loser. Without knowing the precise course of future prices, we cannot be sure.

The fear of the Lord, however, is the beginning of wisdom and it is in seeking His counsel that we have hope of gaining wisdom. Godly wisdom can reveal which of the competing factors are more important and can engender sensitivity to changes in the economic setting even as those changes are occurring. For example, we are moving out of a time of an unusual convergence of economically beneficial effects. Oil prices are rising back toward more normal levels, consistent with recovery from the Asian crisis. Conditions in Asia and Europe seem increasingly ripe for a flow of funds out of the US market. And interest rates are higher and more effective now in slowing down domestic US spending.

Yet we see "through a glass darkly", and we don't know what is the end of this particular run-up in stock market prices. Given the incredible complexity of the US and global economy, it is impossible to know the strengths of the various factors that influence asset-market values. We just don't know whether adverse oil-price and interest-rate effects will outmuscle or be subdued by new-technology and life-cycle-consumption effects. It is not the case that one view of the economy is correct and all others are wrong. The legitimate questions are usually about the size of the parameters by which these factors affect the economy. These parameters are unknown and even changing, as is the actual structure of the economy in which the parameters are embedded.

And so we ultimately must trust in the Lord and learn to be thankful in whatever state our portfolio is. Notice especially that Paul told Timothy to warn the rich against trusting in wealth, but not because it is evil in itself. He was to warn them "not ... to put their hope in wealth, which is so *uncertain*" (I Timothy 6:17; emphasis added).

References

Dent, Harry S., Jr. *The Roaring 2000s Investor: Strategies for the Life You Want*. Simon and Schuster, 1999.

Greenspan, Alan. "The Challenge of Central Banking in a Democratic Society," remarks at the Annual Dinner and Francis Boyer Lecture of The American Enterprise Institute for Public Policy Research, Washington, D.C. (December 5, 1996): <http://www.bog.frb.fed.us/BOARDDOCS/SPEECHES/19961205.htm>

_____. "The Federal Reserve's Semiannual Monetary Policy Report," before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate (July 22, 1997).

_____. "Economic and Budgetary Outlook," testimony before the Committee on the Budget, U.S. House of Representatives (October 8, 1997).

_____. "Technology and Financial Services," speech before the Journal of Financial Services Research and the American Enterprise Institute Conference (April 18, 2000).

International Economic Trends. Federal Reserve Bank of St. Louis (February 2000).

Maintaining Financial Stability in a Global Economy. Proceedings of a symposium sponsored by the Federal Reserve Bank of Kansas City. Jackson Hole, MT (August 1997).

Meyer, Laurence H. "The Global Economic Outlook and Challenges Facing Monetary Policy around the World," a speech before the World Economic Forum, U.S.A. Regional Meeting, U.S. Chamber of Commerce's National Chamber Foundation, Washington, D.C. (April 14, 1999): <http://www.federalreserve.gov/boarddocs/speeches/1999/19990414.htm>

_____. "The Economic Outlook and the Challenges Facing Monetary Policy," remarks before the Toronto Association for Business and Economics, Toronto, Canada, (April 12, 2000). <http://www.federalreserve.gov/boarddocs/speeches/2000/20000412.htm>

Miller, Rich; Cohn, Laura; and Coy, Peter. "Greenspan's Dilemma," *Business Week* (April 3, 2000): 36-38.

New Challenges for Monetary Policy. Proceedings of a symposium sponsored by the Federal Reserve Bank of Kansas City. Jackson Hole, MT (August 1999).

Shiller, Robert J. *Irrational Exuberance*. Princeton University Press, 2000.

“US indices soar on Greenspan's remarks,” Associated Press, New York (Thursday, July 24, 1997). <http://www.expressindia.com/fe/daily/19970724/20555733.html>