

**‘The End of History’ and the Stock Market Boom :  
a cautionary tale of capitalist triumphalism**

**Marcus Miller**

*No man is an island, entire of itself; every man is a piece of the Continent.*  
John Donne

With the collapse of Communism in 1989 and the increasingly skilful management of the market economy (as exemplified by Mr Greenspan, Chairman of the Fed since 1987), the risks associated with owning US equities clearly fell towards the end of the last century. Fukuyama’s(1992) analysis captured the spirit of the time. The clash of great ideologies was over. Fascism had been defeated by force and Communism brought down by its own inefficiency. This left market capitalism allied with Democratic Socialism triumphant for all time: for Fukuyama it was ‘the end of history’. This view did not go unchallenged -- some said that it showed that its author did not know enough history. But, with inflation tamed by Central Bankers, it was, at least for those in developed countries, a time to live in peace and freedom and to enjoy an ever-increasing standard of living -- enhanced by the exciting promises of the New Economy.

More optimism on growth and less fear of World War and Great Depression surely justified a substantial re-rating of the stock market and values went up sharply. By the end of 1998, for example, US stocks had risen to a value of over 13 trillion dollars i.e. twice that of the US Gross Domestic Product and half that of world GDP. This meant the US market alone was worth about twice all the shares in the rest of the world, *The Economist*, 2000. To those economists who had wondered why stocks had been so cheap relative to bonds -- the so-called Equity Premium puzzle -- this increase was long overdue. For them, the virtual disappearance of the risk premium resolved a puzzle of perennial market mispricing. For others, however, the increases seemed vastly overdone. Mr. Greenspan himself expressed concern over ‘irrational

exuberance' in 1996 when the Dow Jones stood at something over 6,000: since went on to rise to a peak of over 11,000.

### **The Peso problem and the Equity Risk Premium**

To judge what market re-rating was appropriate, one has to ask why the equity premium was so high - around 8%-- for so long, Cochrane (2001, p.xiii). The answer, as Cochrane (2001, Chapter 21) goes on to suggest in his recent monograph on Asset Pricing, is that equities suffered from a so-called Peso problem, i.e. they were subject to rarely observed but potentially severe shocks which investors took into account when pricing the risk. (In periods when the shocks did not materialise the shocks would of course seem undervalued, i.e. the Peso problem can account for the Equity Premium puzzle.) To show how important such rare shocks can be to stock values, consider a simple numerical example.

Assume that the Peso problem is the perceived risk of Great Depression, where *dividends fall by 50%*, liable to occur at any time, but with an anticipated frequency of *only once every 50 years*. How much will these infrequent but severe shocks add to the risk premium? The expected loss is only one percent per annum ( $50\% \times 1/50$ ), but this is considerably amplified if investors are risk averse. In the case of a 50% fall, the magnification factor is 2 to the power of the degree risk aversion (the formula used in section 3 of Miller et al. ): so if the degree of risk aversion is two, an expected loss of one percent will *add four per cent to the risk premium*.

Though this example illustrates the power of the Peso problem to explain the risk premium, it highlights the difficulty of accurate measurement. Even if the rates are constant, how accurately could one hope to measure the arrival rate of such rare events when capitalism has only been in place for 200 years? (*A fortiori* for the frequency of World Wars.) The example also illustrates how the apocalyptic changes considered by Fukuyama can affect the stock market: if Great Depressions can be avoided by good economic management, and the absence of competing ideologies makes wars less likely, and then the arrival rates of the severe shocks will fall, and with it the risk premium.

### **Market Overshooting**

In the paper referred to, we reckoned that the 'end of history' effects could account for a reduction of about half of the historic risk premium, bringing it down

from eight to four percent. If interest rates are close to growth rates, this would call for a doubling of the stock market. But markets rose far more than that. The S&P500 - a broad-based index of top US companies - sustained an average growth rate of 12% for more than a decade, rising from about 330 in 1987 to over 1500 in the new millennium. At the risk of tautology, one can justify the spectacular asset price increases seen over that period by simply assuming that the risk premium had fallen closer to zero. An alternative explanation is that markets overdid the correction, as momentum investors and fans of New Economy, for example, took things too far.

#### **‘ Irrational exuberance’**

Now that the S&P has fallen by about a third, it is easy to suggest that the market overreached itself. But well before the markets crashed, Robert Shiller warned investors that there was a bubble in the U.S. stock market, due largely to psychological factors. His bold stand against the frenzy of the times is a deserved best-seller. For the NASDAQ index of high technology stocks (which grew very rapidly from 2000 to over 5000 before collapsing by more than two thirds), Shiller is surely correct: people bought rising New Economy stocks in anticipation of continued price increases and the scramble for new offerings resembled a gold rush. Many must wish they had heeded his words when they first appeared. But what about the wider stock market indices such as the S&P 500? and those more focussed on the Old Economy such as the Dow Jones? In Miller et al (2001) we argue that there has been a bubble there too; but not of the simple extrapolative variety, more like an insurance bubble.

#### **Exaggerated confidence**

In his well-known address to the American Economic Association in 1968 Milton Friedman(1969,p.106) said that : “The first and most important lesson that history teaches us about what monetary policy can do ... is that monetary policy can prevent money from being a major source of economic disturbance. The Great Contraction might not have occurred at all, and if it had, it would have been far less severe, if the monetary authority had avoided mistakes.” In characteristically iconoclastic fashion, he went on to recommend “monetary arrangements of an earlier time when there was no central authority with the power to make the kinds of mistakes that the Federal Reserve System made.” But towards the end of the last century - and under its current Chairman in particular - it was the Fed itself that took the lesson to heart - and thereby gained a world-wide reputation for first rate monetary management. Two key examples are the prompt action taken to limit

the “market break” of 1987 and to alleviate the “liquidity crunch” of 1998, in both cases by pumping in liquidity and cutting interest rates to prevent market crashes.

The idea explored in Miller et al. is that investors -- impressed by these dramatic rescue operations -- were lulled into a false sense of security, thinking that the Fed was providing a general downside guarantee on stock values. This belief that the monetary authorities are insuring investors against failure has been referred to as “meta moral hazard”. (The “moral hazard” is that people who are insured will take greater risks than otherwise: the “meta” reflects the fact that is only “as if” since no formal insurance contracts are exchanged.) There are two pieces of survey evidence of this “meta moral hazard”. First is a small survey of major fund managers and chief economists in London and New York carried out in early 2000 to investigate the hypothesis that “confidence in an ever-increasing stock market is due to the belief that monetary policy will be used to support the market and that corrections will elicit reductions in interest rates until the market turns around”, Cecchetti et al (2000, p.75). The authors concluded that “the results are quite clear. All respondents believe that the Fed reacts more to a fall than a rise, and all except two believe that this type of reaction is in part responsible for the high valuations on the US market”. The second is a much bigger national opinion survey conducted in 2001 by the Securities Investor Protection Corporation (SIPC) to see whether individual US investors were aware of the risks they face in the stock market. The SIPC found evidence of widespread belief among individual investors that they are insured against stock market losses.

#### **A ‘Greenspan put’**

To capture the idea of an “insurance bubble”, imagine that market participants were freely given an undated put option with an exercise price some fixed proportion of the last market peak. The effect of perceived portfolio insurance is like a put option: but the reality is a bubble -- because the put will not exist when it comes to be exercised. Central Bank intervention may be able to contain self-fulfilling crises in financial markets; but it cannot shield equities from the adverse effect of low corporate earnings – as Milton Friedman might have put it.

By pricing such a ‘Greenspan put’ into the market valuation, one can see how erroneous belief in the stabilising power of the Fed can raise stock market prices and reduce the implied risk premium. Calibrations with a range of plausible parameters, show that the erroneous belief that the Fed can prevent the market falling by more than 25%

from its previous peak can raise the market by more than 50% above its fundamental value and bring the observed risk premium down from 4.3% to about 2.6% even though underlying attitudes to risk are unchanged. With a more sophisticated “sliding put” markets can go a lot higher, lifted by a ‘virtuous circle’ of self-fulfilling expectations. On the other hand, it is unrealistic to postulate that the Fed’s intervention is fully credible, and partial credibility weakens the value of the hypothetical insurance. (It is also shown that - with ‘habit persistence’ by investors - a partially credible put can be consistent with the characteristic negative correlation between stock price volatility and market value.)

Since the Fed cannot determine the real value of stocks, the resulting asset prices are not rational. Like Shiller’s, our “insurance bubble” involves market psychology: but what we describe is not so much “irrational exuberance” as exaggerated faith in the stabilising power of Mr. Greenspan and the Fed. What are the policy implications? The central implication is that markets will fall when investors realise that Mr Greenspan is not superhuman. Why not burst the bubble? The problem is that direct action by central banks to prick significant asset bubbles runs the risk of causing serious financial and real contraction as markets overshoot on the downside: the Great Depression in the USA and the current prolonged slump in Japan both followed hard on the heels of asset bubbles that Central Banks succeeded in bursting, Cecchetti et al. (2000, Chapter 5).

An alternative scenario is that investors are gradually brought to their senses, and there is a bear market as the insurance bubble subsides more slowly. Perhaps this is what has been happening. Some high-tech investors were reported to be very angry when Mr Greenspan failed to bail them out as the NASDAQ was collapsing. This surely indicates that there was moral hazard – but it also implies it is on the wane, as people painfully discover they are not insured, and asset prices return to their fundamental values.

### **Postscript : the Huntington Hypothesis and the rising Risk premium**

Even at the time, Fukuyama's views faced criticism. The Harvard historian Samuel Huntington, for example, noted that the clash of ideologies being discussed was a relatively recent phenomenon. He emphasised that that before the nineteenth and twentieth centuries, religion and race were perennial sources of conflict . He went further to predict the reappearance of the conflict between Christianity and Islam that divided the world at the time of the Crusades.

As everyone knows, the devastating terrorist attacks on New York and Washington have been blamed on Islamic extremists; and reprisals are being taken against the fundamentalist Islamic Taliban regime in Afghanistan. Great efforts are being made not to cast this as a repeat of the Crusades: but the point remains that the threat of conflict has reappeared – with origins in desperation and religious extremism rather than the ideological differences Fukuyama focussed on.

How have financial markets responded to the threat of terror and of the war now being waged to prevent it? Estimates by city firms late in September this year talk of risk premia rising to around 5%. So history has not ended: and the risk premium has not disappeared. There are clear risks of more terrorism unless something is done to help desperate peoples on the margin of existence in an otherwise prosperous world, Wolf (2001). Disadvantaged people need more voice and more help, so that religious extremism is not their only hope. In today's world, no state is an island, not even the US.

*This piece is based on the paper referenced below written with Paul Weller and Lei Zhang and due for publication in the Economic Journal in March 2002. (It is currently available on the publications page of the CSGR website [www.csgr.org](http://www.csgr.org) ).*

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