

## DISCUSSION NOTES

Ben Bernanke

Philadelphia Fed conference, November 30, 2001:

Bernanke-Gertler (Jackson Hole, 1999) and in followup work:

→ An inflation-targeting policy works well in the presence of nonfundamental fluctuations in stock prices.

- 1) Stock market behavior is relevant to the extent that it forecasts inflation; and so optimal policy will lean against the wind (demand shocks) and accommodate technology shocks.
- 2) There seems to be little benefit in monetary policy responding to stock price movements, over and above their implications for inflation.
- 3) This seems to roughly correspond to actual Fed policy.

In nicely worked out analyses, the first two papers today show that there is a theoretical case for monetary policy to respond to the stock market, over and above the extent implied by the market's implications for inflation.

In fact, this result is true in the B-G model as well, as stock market bubbles lead to excessive volatility in investment. The real question is whether, in practice, we have sufficient confidence in our understanding of stock market behavior and its response to monetary policy to improve over an inflation-targeting rule. I am very skeptical that we do (or the Fed does).

The theoretical case for responding to stock prices. Depends on framework and assumed source of stock-price fluctuations:

1) Alvarez. Stock price fluctuations arise from variations over time in risk aversion by investors.

A reasonable model? Consistent with views that increase in participation and broader holdings have reduced equity premium and helped raise stock prices in the 1990s. But is this a reasonable description of short-term stock price fluctuations?

Campbell-Ammer evidence: Breaks stock returns into forecasts of dividends, forecasts of interest rates, and residual (identified with risk premia). But in fact this residual can capture anything, in particular it is consistent with Dupor's waves of optimism and pessimism.

But different modeling strategies point out problem: Optimal response to "bubbles" depends not only on identifying bubbles but on understanding their source. Contrasting policy implications of Alvarez and Dupor.

Mechanisms: Alvarez model based on the idea that rate of inflation influences incentive to hold money as opposed to securities. Evidently, when people are risk averse (so stock prices are low), they choose high levels of insurance without need for an inflation incentive. So money injections and inflation are low when stock prices are low (procyclical monetary policy).

I am skeptical of realism of this mechanism. Omitting capital (endowment economy) eliminates, I think, the more important distortion from bubbles. This is captured in the Dupor paper.

2) Dupor. Stock price fluctuations arise from (irrational) fluctuations in optimism about future dividends. If the Fed knows this, it can dampen excessive capital fluctuations by leaning against the stock market.

Issues:

- (a) Can we really identify deviations of stock market from fundamentals? Dupor: “Particularly compelling is the record of financial economists, such as Shiller (2000), in identifying overvaluation during the recent stock market boom.” (p. 5). Oh yeah? Is Dow 10,000 consistent with Shiller’s predictions throughout the latter 1990s? Should we act now to bring down the stock market? Perhaps people are excessively pessimistic about NASDAQ now? (Dupor formulation makes negative bubbles as likely as positive ones.)
- (b) Distinction between S&P and Nasdaq raises the sectoral issue. What do you do when excessive optimism seems confined to one sector of the stock market? Restraining the Nasdaq bubble in 1999 might have overshot on the S&P and the general economy. Should the Fed have tightened much more severely even back in 1996?
- (c) If we take seriously the welfare gains, we should take seriously the quantitative policy implications. Do we believe that deflation is called for (is it  $-1.5\%$  or  $-15\%$  in Figure 3)? What is happening to interest rates?
- (d) The parameter  $q$  which measures the degree of excessive optimism or pessimism follows an exogenous stochastic process, which means that the Fed knows exactly by how much its actions will dampen the stock market. Perhaps stock market bubbles are more like a balloon that can collapse suddenly if a policy shift changes sentiment?

History strongly argues against trying to “stabilize” stock market:

- 1) 1929 stock market crash and the beginning of the Depression was the direct result of Fed response to perceived bubble
- 2) Research by Hans-Joachim Voth (2001) shows a similar story for the German stock market crash and economic downturn in 1927
- 3) Japanese bubble pricked in 1989

Historically, major depressions and recessions are invariably related to price-level pathologies (deflations or disinflations: 1929, 1975, 1981, Japan today). Stock price crashes accompanied by price-level stability are relatively harmless (1987).

Hippocratic oath says “First do no harm”. Reasonable humility about our knowledge and listening to the lessons of history should make us extraordinarily cautious about trying to use monetary policy to influence stock prices.