MONETARY POLICY AND ASSET PRICES

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Abstract

A good deal of recent debate among monetary policymakers, researchers, and critics of monetary policy relates to the role of monetary policy in the face of sharp asset price movements. Controversy exists as to whether monetary policy should respond to (or attempt to influence) asset price "bubbles."

This paper first reviews the many plausible arguments of those endorsing a monetary response. Some relevant stylized facts and empirical results pertaining to such asset price movements are then delineated. The case against monetary policy intervention is presented. By and large, the weight of the evidence supports the case against monetary intervention. However, alternative policy options to help stabilize asset prices are available. Policy action, for example, on the part of the lender of the last resort (LOLR), the financial regulatory agency, and the tax authority could be undertaken that would minimize sharp asset price movements (or "bubbles") as well as help stabilize the financial system.

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Monetary Policy and Asset Prices

Introduction

Much recent debate among monetary policymakers, researchers, and critics of monetary policy relates to the role of monetary policy in the face of sharp asset price movements.[1] Specifically, controversy exists as to whether monetary policy should respond to "asset price bubbles." Proponents of a monetary response provide a number of plausible arguments to support their view. These arguments often are premised on observations of recent U.S. experience where the effects of sharp equity price movements appear to be having a more potent economic impact than anticipated by mainstream economists.

Implicit in the case for a central bank response to such asset price movements is an expanded, more ambitious mission for monetary policy. This expanded role, necessarily both proactive and discretionary in nature, complicates inflation targeting procedures.

This paper describes the case for responses to "asset price bubbles" on the part of the monetary authority. Some relevant stylized facts and empirical results relating to such asset price movements are delineated. The case against monetary policy intervention is then presented and followed by recommended policy action on the part of the monetary authority, the lender of last resort, and the financial regulatory authority that could minimize asset price bubbles.

The Case for Monetary Response

Those calling for monetary policy to respond to sharp asset price movements or asset price bubbles have presented plausible arguments as to why such intervention is desirable. According to these advocates, for example, monetary policy should intervene to "correct" wayward asset price movements for the following reasons:

- **The Stock Market is larger and more widespread.**

  Proponents contend that despite equity price weakness of late, recent decades have witnessed growth in the size of the stock market relative to the economy. This stock market growth has been accompanied by more widespread share ownership, both as a proportion of the population owning stock, and as a share of household assets. Because of this increase in the relative size of the market, sharp movements in equity prices can have larger macroeconomic impacts today than was earlier the case. Indeed, large movements in asset prices could endanger price stability. According to advocates of intervention, therefore, the monetary authority must consider these larger impacts when conducting monetary policy.

[1] The paper examines asset prices in general, but gives more attention to equity prices.

- **The equity market plays a larger role in the monetary transmission process.**

Advocates of intervention suggest that a differing monetary transmission mechanism involving the stock market has developed over the years. This change relates in part to the increased size and widespread ownership of stocks mentioned above. But this altered mechanism directly affects monetary policy in that changes in monetary policy may be more closely related to equity prices than in the past. Equity prices, in turn, may be more closely related to goals of monetary policy, such as changes in economic activity and movements in general prices, than was earlier the case. Because of equity prices' more potent role in the transmission mechanism via wealth effects on consumption and changes in the cost of capital on investment, intervention proponents argue that monetary policy must pay more attention to stock prices when conducting policy and intervene when appropriate.

A differing transmission mechanism is emphasized by Austrian School economists. Under certain conditions, they contend, overly accommodative monetary and credit growth may feed into and directly affect asset prices rather than the prices of goods and services. An asset price bubble may thereby develop. This asset price inflation, in turn, can lead to over-or malinvestment and an unstable outcome, should it be allowed to continue without monetary policy intervention.

- **Asset price bubbles can foist significant financial imbalances on the financial system.**

Sharp asset price bubbles can lead to sizeable debt build-ups, weakened balance sheets, and financial imbalance. Such bubbles promote instability in the financial system and, in turn, on the macroeconomy. These balance sheet distortions can be more potent than recognized by conventional analysis. Given widespread share ownership, large swings in asset prices could endanger financial stability. In the downturn phase of a bubble, for example, sharp asset price declines may disrupt the financial intermediation process and promote financial instability. In such cases, proponents of intervention argue that the Federal Reserve should intervene in order to prevent monetary disruption and imbalances from developing, to limit future deterioration of bank balance sheets, to help stabilize the financial system, and to steer the economy away from these severe asset price bubbles and their adverse effects.

- **Asset price volatility and financial imbalances will increasingly proliferate in low inflation, stable economic environments.**

According to proponents of intervention, another reason why the Federal Reserve should alter its behavior and respond to sharp asset price movements or asset price bubbles is that the Fed itself increasingly (but unwittingly) works to create the environment in which such bubbles flourish. Specifically, as modern central banks better learn to control inflation and tame economic fluctuation, thereby stabilizing economic activity so that there are fewer, milder recessions, economies will

experience more risk taking, more innovation, more investment and stronger productivity advances. They will also experience increased stock price movement and associated asset price bubbles.

In short, there is a kind of "moral hazard" of economic policymaking: the more stable/predictable the economic environment, the more risk taking, investment, and innovation take place. Financial imbalances and asset price inflation increasingly occur in low inflation, stable environments. The Federal Reserve must recognize these imbalances and bubbles and prepare to respond.

- **Asset prices and asset price inflation are important components of general prices and general inflation.**

Some advocates of monetary intervention argue that the Federal Reserve should pay more attention to asset price movements or asset price bubbles since such movements influence and help to predict general price inflation. Further, sharp asset price movements associated with asset price bubbles can endanger price stability.[2] Several advocates of monetary intervention argue that asset prices and their movement should be included in a broader, more comprehensive measure of the economy's general price level and inflation rate. The central bank would subsequently use this more comprehensive figure as a basis for its inflation policy goal.

- **Asset price bubbles can be identified and controlled.**

Proponents of using asset prices as a guide to monetary policy maintain that monetary policy intervention is feasible since asset price bubbles can be both identified and controlled. Additionally, proponents of intervention contend that it is possible to identify the "bubble component" of asset price movements.

Some Stylized Facts, Empirical Results, and Implications about Asset Prices

Before assessing the case for monetary responses to asset price bubbles, it is useful to review some relevant characteristics of asset price movements or bubbles. The following observations represent some stylized facts highlighted in recent literature about asset price movements.

- In assessing asset price movements, researchers have examined (alternatively defined) asset price "bubbles", "boom-busts" in asset prices, and stock market "crashes." [3]

[2] See, for example, Jean Claude Trichet "Asset Price Bubbles and their Implications for Monetary Policy and Financial Stability," Keynote address, Federal Reserve Bank of Chicago Conference, April 23, 2002.
[3] See, for example, Bordo, Michael and Olivier Jeanne, "Boom-Busts in Asset Prices, Economic Instability and Monetary Policy," National Bureau of Economic Research (NBER) Working Paper 8966, June 2002; Borio, Claudio and Philip Lowe, "Asset Prices, Financial and Monetary Stability: Exploring the Nexis," Bank for International Settlements (BIS) Working Paper No. 114, July 2002; Mishkin, Frederic, and

- Historically, there have been many "booms and busts" in asset prices, as well as many stock market crashes. [4] These asset price movements have occurred under both fixed and flexible exchange rate regimes.

- Equity price "booms and busts," however, are relatively rare. "Boom and bust" episodes appear to be more frequent in real estate prices than in equity prices.[5] Bordo and Jeanne, for example, found that 24 equity price booms were followed by only 3 busts; booms were followed by busts only about 12.5 percent of the time. On the other hand, 19 real estate booms were followed by 10 busts, occurring about 53 percent of the time.[6]

- "Booms and busts" occurring in a given country's equity prices and real estate prices at the same time are even more rare. Bordo and Jeanne, for example, found only two cases of simultaneous "boom-busts" in stock prices and property prices in their data.[7] The recent U.S. experience, for example, has involved an equity price "bubble" but much more subdued real estate price movements.

- More frequently occurring real estate bubbles tend to be localized and therefore not a macroeconomic concern.[8]

- Some measures of asset price volatility appear to be increasing; cycles of asset prices seem to be growing in amplitude and length.[9] Equity prices appear to be more volatile than prices of either commercial or residential property.[10]

- Available empirical evidence provides information about the size of the "wealth effect": i.e., about the size of the effects of changes in asset prices on household consumption. Statistical studies generally suggest, for example, that an additional dollar of asset-price-driven household wealth results in a rise in consumption of about three to five cents.[11] Further, the marginal propensity to consume (MPC) out of housing wealth exceeds the MPC out of equity wealth. Evidence of a

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Eugene N. White, "U.S. Stock Market Crashes and Their Aftermath: Implications for Monetary Policy," Asset Price Bubbles Conference, Federal Reserve Bank of Chicago and the World Bank, Chicago, Ill., April 2002. This section draws on these studies.

[4] Bordo and Jeanne, op. cit., examined "booms and busts" in OECD countries for the period 1970-2001. Mishkin and White, op. cit., examined a century of U.S. Stock Market data to identify Stock Market "Crashes." They define a stock market crash as a 20 percent decline in stock prices over a 12-month period.

[5] Bordo and Jeanne, op, cit., p.4.

[6] Bordo and Jeanne, ibid, p.9,10.

[7] Bordo and Jeanne, ibid, p. 10.

[8] Bordo and Jeanne, op, cit., p.10.

[9] Borio and Lowe, op, cit., p.3.

[10] Borio and Lowe, ibid., p.3.

[11] Edward M. Gramlich, "Asset Prices and Monetary Policy," Remarks by Governor Edward M. Gramlich at the New Technologies and Monetary Policy International Symposium, Bank of France, Paris, November 30, 2001, p.1.

reliable link between changes in equity prices and business investment, however, is weaker.[12]

- Available empirical evidence also provides information helpful in determining the usefulness of asset, or more specifically, equity prices as a target, indicator, or guide to monetary policy. For equity prices to be a useful monetary policy guide, indicator or target, a reliable link between changes in monetary policy and changes in equity prices as well as between changes in equity prices and changes in inflation should be established. Empirical evidence suggests that there is no close, reliable relationship between changes in monetary policy and equity prices. To cite recent examples, Tatom shows that "in the long-run, stock prices are independent of the federal funds rate."[13] Mishkin and White note that:

> "The linkage between monetary policy and stock prices…is…a weak one. Most fluctuation in stock prices occur for reasons unrelated to monetary policy, either reflecting real fundamentals or animal spirits. The loose link between monetary policy and stock prices therefore means that the ability of the central bank to control stock prices is very limited. Thus, if the central bank indicates that it wants stock prices to change in a particular direction, it is likely to find that stock prices may move in the opposite direction…"[14]

Similarly, there is no close reliable positive empirical relationship between changes in equity prices and changes in general prices.[15] Some recent empirical work supporting this claim include Stock and Watson (2001), Tatom (2002), Filardo (2000), Goodhart and Hofmann (2000), and others.[16] Thus, stock prices would not serve as a useful guide, indicator, or target for monetary policy since the central bank could neither control equity prices nor effectively influence policy goals by changing equity prices.

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[12] Gramlich, ibid., p.2.

[13] Tatom, John A., "Stock Prices, Inflation and Monetary Policy," Paper presented at the National Association of Business Economics Meetings, September 29-October 1, 2002, p.2. Since stock prices represent the discounted value of a future earnings stream, a stock price is a relative price that depends on the relation between output prices and costs. Accordingly, there will not be a reliable long-run relationship between changes in monetary policy and changes in (relative price) stock prices.

[14] Frederic Mishkin and Eugene N. White, "U.S. Stock Market Crashes and Their Aftermath: Implications for Monetary Policy," Paper presented to the Asset Price Bubbles Conference, Federal Reserve Bank of Chicago and the World Bank, Chicago, April 23, 2002, p.17.

[15] Tatom, op. cit., finds that stock prices and general prices are negatively related.

[16] Stock and Watson survey the literature and supply evidence suggesting that the empirical relationship between changes in asset prices and changes in general prices is not stable across countries and time periods. Tatom shows that there is a negative long-run relationship between inflation and stock prices. Filardo's results show that changes in equity prices do not help predict future consumer price inflation. Goodhart and Hofmann show stock returns do not help to predict inflation. James Stock and Mark W. Watson, "Forecasting Output and Inflation: The Role of Asset Prices," National Bureau of Economic Research Working Paper 8180, March 2001; Tatom, op.cit; pp 15,26; Andrew Filardo, "Monetary Policy and Asset Prices," Economic Review, Federal Reserve Bank of Kansas City, Third Quarter 2000, Volume 85, no.3; C. Goodhart and B. Hofmann, "Asset Prices and the Conduct of Monetary Policy," Manuscript, London School of Economics.

Some Implications

Some policy implications of these stylized facts and empirical results are worthy of underscore. Several of the asset price disturbances mentioned above are characterized as limited, single market or microeconomic in nature; they do not impact all markets at the same time or affect them in a systemic manner. Real estate price bubbles, for example, are usually localized. Equity price "booms and busts" are relatively rare. And equity bubbles and real estate bubbles normally do not occur at the same time.

Yet monetary policy is a macroeconomic policy tool that should be reserved for disturbances that affect the entire aggregate macroeconomy; monetary policy should serve a macroeconomic purpose. Monetary policy should not be used for single market, microeconomic, localized events. Thus, monetary policy probably should not respond to many of the asset price disturbances mentioned above. Further, since stock price movements are not reliably related to changes in monetary policy or to changes in inflation, equity prices would not serve as a useful policy indicator in an inflation targeting regime.

The Case Against Monetary Response

There is a well-established case against ready monetary policy responses to asset price movements or asset price bubbles. Key elements of this case are delineated below.

- **Monetary policy should focus on what it can do.**

  One fundamental objective monetary policy certainly can achieve is to stabilize the value or price of money: to provide for overall price stability. On the other hand, monetary policy cannot predictably influence or control relative prices (or real variables). Since a stock price can be defined as the present discounted value of an expected future income stream, it is a relative price. Its value depends on a discount rate as well as the difference between output prices and costs. Stock prices are not measures of or proxies for the price of money. Accordingly, over time, equity prices cannot serve as reliable guides, indicators, or targets for monetary policy. There is no reliable relationship between changes in monetary policy and changes in stock prices or between changes in stock prices and changes in inflation.

  According to this conventional view, monetary policy should respond to movements in stock prices only (1) insofar as stock price movements threaten to affect aggregate demand, inflation, and price stability, or (2) when asset price deflation threatens either financial system stability or actual deflation. In presenting this conventional view, Bernanke and Gertler argued that monetary

policy should not respond to asset price movements, "except insofar as they affect the inflation forecast."[17]

- **The causal effects from stock prices to aggregate demand are relatively weak and unreliable.**

  Equity prices are components of a changing transmission mechanism of monetary policy. And a growing proportion of the population owns equity shares. Nonetheless, despite popular perceptions about a growing size and potency of changes in equity prices on consumption and investment (i.e., aggregate demand), only relatively weak evidence supports such effects. More specifically, the empirical basis for a "wealth effect" is relatively weak despite the increased size and importance of stocks in household portfolios.[18] Further, this effect is not dependable. In short, evidence suggests that equity prices may not play so significant a role in the transmission of monetary policy since the wealth effect on consumption is relatively weak and unreliable (as is changes in the cost of capital channel on investment.)[19]

- **Circumstances mandating a monetary policy response to asset price movements are relatively unusual, rare events.**

  A legitimate monetary response to movements in asset prices is an unusual event. Such responses should be limited to macroeconomic events. Monetary policy, for example, should not respond to asset price movements that are microeconomic in nature. Most real estate price "booms and busts," for example, are localized events impacting local markets which should be ignored by macroeconomic monetary policy. A response might be appropriate, however, when simultaneous real estate, equity, and collectables price asset price bubbles occur; when a genuine macroeconomic asset price bubble emerges. Such events, however, rarely, occur. (See stylized facts above).

  Legitimate monetary policy responses to asset price movements are appropriate when significant asset price inflation (or deflation) threatens existing price stability. These situations may be accompanied by strong productivity advances, rapid investment, and robust economic growth: ie., unusual factors working to restrain general inflation while at the same time encouraging equity price inflation.

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[17] Ben S. Bernanke and Mark Gertler, "Should Central Banks Respond to Movements in Asset Prices?" American Economic Association Papers and Proceedings, vol.91, no.2 May 2001, p253.

[18] A study published by the Federal Reserve Bank of New York, for example, found that equity-price-based wealth effects were weak – much weaker than in conventional structural macromodels – and weaker recently, than in the 1960s and 1970s. See Kenneth N. Kuttner and Patricia C. Mosser, "The Monetary Transmission Mechanism: Some Answers and Further Questions." Economic Policy Review, Federal Reserve Bank of New York, May 2002, p.22; Sydney Ludvigson, Charles Steindel, and Martin Lettau, "Monetary Policy Transmission through the Consumption – Wealth Channel" Economic Policy Review, Federal Reserve Bank of New York, May 2002.

[19] See Gramlich, op.cit.,p.2

Another unusual set of circumstances calling for a monetary policy response to asset price movements may occur during asset price deflation: i.e., more specifically, during the downside of an asset price "bubble-bursting" episode. It is sometimes the case during such asset price deflation that financial imbalances are foisted on the macroeconomic financial system. In this case, a monetary response in the form of lender of last resort (LOLR) liquidity provision via open market operations to meet liquidity demands may be appropriate. [20] In short, there are only a few, unusual situations when a legitimate monetary response to asset price movements are called for: (1) when a sharp asset price movement threatens existing price stability, and (2) when asset price deflation-induced financial imbalances threaten the financial system. Both sets of circumstances are unusual, rare situations.

- **The argument that price stability itself fosters asset price bubbles, asset price volatility and financial instability has been neither adequately nor convincingly established.**

In presenting this view for monetary intervention, for example, Borio and Lowe (2002) argue that:

> "While low and stable inflation promotes financial stability, it also increases the likelihood that excess demand pressures show up first in credit aggregates and asset prices, rather than in goods and services prices. Accordingly, in some situations, a monetary response to credit and asset markets may be appropriate to preserve both financial and monetary stability."[21]

The case that financial imbalances develop in stable price environments, however, has not been adequately established or demonstrated. Proponents of this view have not shown that price stability causes financial instability. The view is not supported by hard empirical evidence; instead, it relies on assumptions relating to the credibility of policymakers, investment activity, technological advances, and productivity gains that serve to constrain the prices (and price expectations) of goods and services.

As a result, price stability remains the appropriate policy goal and the conventional view, as presented by Bordo et al., remains valid:

> "A monetary regime that produces aggregate price stability will, as a by-product, tend to promote stability of the financial system."[22]

[20] See Keleher, Robert E., "An International Lender of Last Resort, the IMF, and the Federal Reserve," Joint Economic Committee, February 1999, pp 1-3.
[21] Borio and Lowe, op.cit, p. Abstract
[22] Bordo, M., M. Dueker, and D. Wheelock (2000); "Aggregate Price Shocks and Fnancial Instability: an historical analysis," NBER Working Paper 7652, p. 27.

Thus, financial instability may be more of a problem in an inflationary (or deflationary) environment as compared to one of price stability.

- **In practice, asset price "misalignments" and "bubbles" are difficult to identify and control.**

  Identifying asset price misalignments or bubbles is often quite difficult since it is usually difficult to know whether changes in asset prices are due to fundamental factors, non-fundamental factors, or both. And each factor's contribution is not readily obvious or knowable. Since many of the factors influencing stock prices are microeconomic (e.g., firm or sector specific) in nature, they should not be addressed with macroeconomic tools. This problem is especially relevant when productivity gains and investment advances are rapid. The identification of asset price "bubbles" or "misalignments" will also depend on the precise stock market index chosen as a proxy for the market as well as on the definition of exactly what constitutes a "bubble" or "misalignment". Supposed ready identification of asset price misalignments or bubbles by the monetary authority implies (incorrectly) that the central bank has more information than the market itself about "correct" market valuation.

  In addition to difficulties identifying asset price misalignment or bubbles, controlling these asset prices raises a different set of problems. Since there is little dependable relation between changes in monetary policy and changes in stock prices, rigid monetary control of these asset prices is not feasible. Attempting to control these asset prices may prove to be destabilizing. The view that the monetary authority should "prick" the stock market at a particular level in order to control its value assumes central bankers have better information than the private sector about "proper" price valuation. With no political mandate to control asset prices, central bankers are unlikely to make asset prices a policy goal.

Incorporating asset prices into general price indexes does not appear to improve policymaking.

A broad index of the general price level containing prices of currently produced goods and services is an indirect proxy for the "price" or "value" of money. It is used in measuring both the inflation and price stability of currently produced goods and services. These proxies measure the prices of flows: i.e., prices of currently produced goods and services over a period of time. These flow prices are not expected to be combined with the prices of stocks such as asset prices, since the characteristics of flow (goods and services) prices differ from those of asset (stock) prices.

This difference is reflected in the established empirical fact that equity prices and general prices are poorly, even negatively, correlated.[23] Evidence also suggests that equity prices are negatively correlated with future price inflation.[24] This implies that equity prices are poor monetary policy indicators.

Filardo summarizes this point:

> "….The recommendation to include asset prices in policymakers' inflation measures…is not likely to improve U.S. economic performance…The empirical analysis of this article finds little evidence that (this) recommendation would reliably improve economic outcomes…Stock market price inflation exhibits no power to help predict future consumer price inflation. As a consequence, the prospect of using…asset prices to improve the conduct of monetary policy is not promising."[25]

In short, there is little empirical evidence supporting the above-cited use of asset prices. Trichet -- the European central banker -- underscores these conclusions:

> "I would…not support the idea of introducing asset prices into the measurement of inflation or the definition of price stability. My first reason is that the nature of goods and services on the one hand, and assets on the other hand, is quite different, and so is the information contained in their prices. Another reason is that asset prices are highly volatile, much more volatile than other prices, ….Consequently, it might be difficult to implement a sound monetary policy by focusing on highly volatile indicators. Finally, it is highly questionable that one could determine scientifically what an asset price equilibrium value is." [26]

Some Implications

In assessing the role asset prices might play in the formulation of monetary policy, the weight of the evidence supports the conventional view: Monetary policy should respond to asset price movements only in defined, limited circumstances. Specifically, policy should respond when asset price movements are significantly affecting aggregate demand or price stability: i.e, fostering either inflation or deflation. A response may also be appropriate when asset price deflation is threatening the stability of the financial system. (This latter response, of course, is the lender-of-last-resort [LOLR] function, briefly discussed below.)

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[23] Tatom, op.cit., for example, reminds us that equity prices are negatively related to inflation in the long run. Stock and Watson's op.cit. literature review and evidence suggest that the relation between asset prices and inflation is not stable (across countries and time).
[24] See Filardo, op.cit., p.17.
[25] Filardo, op. cit., p.25 (parenthesis and emphasis added).
[26] Jean Claude Trichet, "Asset Price Bubbles and their Implications for Monetary Policy and Financial Stability" Keynote address, Federal Reserve Bank of Chicago Conference, April 23, 2002.

Other Considerations

Alternative public policies, however, can contribute to stabilizing asset prices. These policies, for example, relate to the LOLR function as well as other regulatory and tax considerations. These policies can limit the probability of sharp asset price movements or "bubbles" and help stabilize the financial system.

LOLR

Deflationary asset price movements sometimes occur and can be associated with subsequent episodes of financial system instability. In these situations, the central banks' lender of last resort (LOLR) function was designed to move into action in order to satisfy macroeconomic liquidity demands, to prevent a "seizing up" of liquidity in the system, and thereby to help stabilize the financial system. [27] This function, therefore, is a backstop that helps stabilize asset prices and their repercussions on other financial markets.

Regulatory or Microeconomic Policies

While monetary policy for the most part should not directly respond to asset price movements, microeconomic public policies are available that may work to limit such movements and their effects. Such policies may not only minimize the frequency and volatility of asset price movements, but may stabilize and promote the resiliency and robustness of the financial system so that asset price movements will not have important secondary repercussions. The promotion of asset price stability as well as the resiliency of the financial system, for example, may be a responsibility of regulatory and tax agencies. By promoting financial system stability, these agencies can help determine whether a stock market crash (or asset price deflation) has secondary adverse repercussions impacting the macroeconomy or financial system. [28]

There are many ways in which regulations, disclosure rules, and tax policies can foster a more resilient, stable financial system. A regulatory and tax structure that encourages neither debt-laden, highly leveraged balance sheets nor excessive risk serves to promote stability and resilience of the financial system, for example, when a deflationary asset price shock occurs. Similarly, policies that promote greater

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[27] See Robert Keleher, "An International Lender of Last Resort, the IMF, and the Federal Reserve", Joint Economic Committee, February 1999, pp 1-3. See also Hutchison, M. and K. McDill (1999): "Are all banking crises alike? The Japanese Experience in international comparison," NBER Working Paper, 7253; and Kaminsky G. and C. Reinhart (1999): "The Twin Crises: The Causes of banking and balance-of-payments problems," American Economic Review, vol 89, no.3, June, pp 473-500, for evidence that declining stock prices lead financial crises.

[28] Mishkin and White make this point:

> "If the balance sheets of financial and non-financial institutions are initially strong, then a stock market crash (bursting of the bubble) is unlikely to lead to financial instability."

Frederic S. Mishkin and Eugene N. White, "U.S. Stock Market Crashes and Their Aftermath: Implications for Monetary Policy," Asset Price Bubbles Conference, Federal Reserve Bank of Chicago and World Bank, April 2002, p.16.

transparency and disclosure should foster more informed judgments about asset prices and hence lead asset prices to better reflect fundamentals. These policies, in turn, should minimize the probability of artificial asset price "bubbles" and thereby promote asset price stability. [29]

Financial or bank regulators, of course, can promote a resilient, stable, safe and sound banking system with competent prudential regulation and supervision of that system. Part of this involves the enforcement of required adequate liquidity and capital standards as well as the promotion of healthy balance sheets.[30] But other possibilities should be considered. Schwartz, for example, recommends a regulatory, not monetary policy solution to the problem of excessive asset price volatility. In particular, she recommends the adoption of "capital requirements that increase with the growth of credit extensions collateralized by assets whose prices have escalated."[31] This, she argues, will help to stabilize the financial system in the face of asset price bubbles. Accordingly, rather than trying to calibrate the effects of asset price changes on Federal Reserve monetary policy action, "Central banks may be better advised to be alert to the weakening of financial balance sheets in the aftermath of a fall in value of asset collateral backing loans."[32]

Similarly, Poole reminds us that there are many ways in which transparent disclosure rules on financial accounts and statements will help to prevent overly optimistic investment. In addition, he notes that the tax code discourages equity in favor of debt. (The tax treatment of dividends is an example). Accordingly, such a tax code promotes a more leveraged financial environment, thereby increasing the risk of financial instability, especially in the face of the downside portion of an asset price bubble. In short, this tax code makes the economy more vulnerable to financial instability when stock prices fall. [33] Addressing this bias in the tax code could bring more resilience to the financial structure. Other regulations, such as restrictions on short-selling of stocks, can also add to equity price bubbles. [34] So eliminating such restrictions would promote stability. In short, there are a number of microeconomic policies that could work to limit asset price movements. And while monetary policy for the most part should not respond to asset price movements, these microeconomic alternatives can prove useful.

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[29] Contact Group on Asset Prices, "Turbulence in Asset Market: The Role of Micro Policies," Bank for International Settlements, September, 2002, p.30.
[30] See Frederic Mishkin, "Prudential Supervision: Why is it Important and What are the Issues?," NBER Working Paper 7926, September, 2000.
[31] Anna J. Schwartz, "Asset Price Inflation and Monetary Policy," NBER Working Paper 9321, November 2002, abstract.
[32] Schwartz, 2002, abstract.
[33] Poole, William, "Financial Stability" Review, Federal Reserve Bank of St. Louis, September/October 2002. Such a tax code discourages dividends and encourages debt issuance to retire equity.
[34] Contract Group on Asset Prices, op. cit.

Summary and Conclusions

A good deal of recent debate among monetary policymakers, researchers, and critics of monetary policy relates to the role of monetary policy in the face of sharp asset price movements. Controversy exists as to whether monetary policy should respond to (or attempt to influence) asset price "bubbles." As the paper reveals, the weight of the evidence bolsters the case against monetary intervention. A number of authors remind us, however, that several alternative non-monetary options to help stabilize asset prices are available. They could be adopted and would help to minimize sharp asset price movements or "bubbles" as well as help stabilize the financial system.

Dr. Robert E. Keleher
Chief Macroeconomist to the Vice Chairman