

# Commentary on 'Causes of Changing Financial Market Volatility'

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I found Bob Shiller's paper to be very stimulating, and although I do not share some of his views on what drives stock market behavior, I am in agreement with his main conclusions. Although the title of Shiller's paper is the "Causes of Changing Financial Market Volatility," its focus is actually somewhat narrower in that it spends most of its time discussing volatility in the stock market and whether current proposals to reduce this volatility make sense. I start my discussion by focusing on the narrower topic of stock market volatility and what Shiller has to say about it, but I will have some things to say about a more general issue that this conference is likely to address: what should be the role for monetary policymakers in dealing with financial market volatility both in the stock market and in other financial markets?

## **Stock market volatility and current proposals to reduce it**

The public, and as a consequence politicians, often view traumatic events as unique and so are prone to blame these events on unique institutional changes that are correlated with the traumatic event. Thus it should be no surprise that many politicians and "experts" blame the Black Monday Crash of October 19, 1987 on the recent development of futures markets in stock index futures, index arbitrage and portfolio insurance. Shiller provides an important service by pointing out that the recent volatility in the stock market is by no means

unique. As Shiller's Chart 1 shows, volatility in the stock market during 1987 is not at all unusual by historical standards. Indeed, it is not even clear that we are facing an **uptrend** in stock market volatility. Once it is recognized that recent stock market volatility is not unique, it becomes harder to blame this volatility on recent financial market innovations.

Shiller's Charts 2 and 3, as well as a recent paper by Schwert (1987), make it clear that explaining stock market volatility is no easy task. The linkage between volatility in the stock market with that in other financial markets or with other economic variables is weak. Without a clear-cut understanding of the sources of stock market volatility, designing appropriate policies to shrink volatility is an extremely difficult task.

One view of financial market volatility with a large number of adherents is a particular variant of the efficient markets hypothesis, which, as stated by Shiller, "asserts that prices efficiently incorporate all public information about fundamentals." In this view of the world, large changes in stock prices reflect large shifts in investors' rational expectations about future values of the fundamental economic variables that affect the valuation of common stocks. With this particular efficient markets perspective, reforming markets so that they exhibit reduced volatility is a bad idea, because it only keeps the markets from reflecting the true volatility of underlying values.

As those who are familiar with Bob Shiller's work know, Bob is quite hostile to the efficient markets hypothesis and has been quoted in the press as saying that it is one of the worst ideas that economists have ever developed. My own view is that this position is far too extreme. First it should be pointed out that other characterizations of the efficient markets hypothesis are more limited than the one that Shiller describes. The characterization of efficient markets that I subscribe to is the following: an efficient market is one in which **unexploited** profit opportunities are eliminated so that expectations are optimal forecasts (the best guess of the future) using all available information.<sup>1</sup> This idea has been an extremely useful one in economics and helps explain many patterns that we see in the data.

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<sup>1</sup> This is the characterization of efficient markets that I describe in my textbook, *The Economics of Money, Banking and Financial Markets*, Mishkin (1986).

One possible lesson from the crash is that factors other than market fundamentals might have an important impact on stock prices. Shiller cites his survey evidence to support the position that no news event about fundamentals precipitated the crash. Although I am inclined to agree with this conclusion because the timing of the crash does not seem to be well aligned with a major news event about fundamentals, I must say that I am more cautious about Shiller's survey evidence than he seems to be. For example, he found that about 90 percent of investors who bought or sold on the day of the crash reported *after the crash* that they thought the market was overpriced right before the crash. Does this mean, as Shiller seems to think, that investors actually thought the market was overpriced before the crash? I am skeptical. Everyone always likes to think of himself or herself as smarter than the rest, and in hindsight, we usually think that we were smarter than we actually were. In spite of my skepticism about the survey results, the stock market crash has shifted my priors away from thinking that the market is always driven by market fundamentals.

Shiller cites additional evidence against the efficient markets hypothesis, but we must be somewhat careful in interpreting the evidence. There does seem to be a strong case that the stock market is more volatile than it should be with an efficient markets model in which there is *an additional assumption* that the rate at which future payment streams are discounted is constant. However, models have been developed (Cecchetti, Lam and Mark in 1988, for example), which suggest that an economy with risk averse agents may display high volatility and forecastability of long-period returns consistent with what we find in the data because of time variation in the rate at which payment streams are discounted. One important piece of evidence that Shiller does not mention which suggests that something other than market fundamentals drives stock prices is found in French and Roll (1986). They find that closings of the New York Stock Exchange on Wednesdays in the second half of 1968 because of the paperwork backlog reduced stock price volatility. Since these closings of the exchange can be reasonably classified as unrelated to the amount of new information arising in the economy, the fact that volatility dropped when these markets were closed suggests that trading and price changes by themselves and not just market fundamentals play a role in stock market volatility.

What conclusion about market efficiency should we draw from the literature described above and the occurrence of the stock market crash itself? First, as even Shiller seems to accept in his paper, the occurrence of large movements in stock prices, even if not driven entirely by fundamentals, does not indicate that there are unexploited profit opportunities in the stock market. Thus a stock market crash of the type we saw in 1987 does not provide evidence against the primary principle of the efficient markets hypothesis: that market expectations will be optimal forecasts using all available information. The Black Monday crash is not the death knell of efficient markets theory. On the other hand, the stock market crash and other evidence make economists such as myself less enamored with the view that market prices reflect only market fundamentals. Thus, I am in agreement with Shiller that in evaluating proposals for reform of financial markets, it is worth examining alternative views of financial market behavior in which market fundamentals are not the whole story.

What I found striking about Shiller's analysis of current proposals to deal with high stock price volatility is that, despite his and-efficient market views, he comes to very similar conclusions to those held by proponents of the efficient markets hypothesis in which prices reflect only fundamentals. Indeed, Shiller's analysis and conclusions on the value of these proposals are remarkably consistent with those found in Frank Edwards<sup>7</sup> paper which will be presented later in the conference. Shiller points out that many of the current proposals are as likely to raise stock price volatility as to reduce it. Reducing the ability of certain investors to engage in market transactions by raising margin requirements, through trading halts, or by eliminating certain market activities such as index arbitrage or even futures trading in stock indexes, may mean that prices will undergo larger rather than smaller swings. The investors frozen out may be exactly the ones that would limit destabilizing speculation. For example, it appears that during the crash the biggest sellers were institutions who are less affected by margin requirements. Furthermore, making financial futures markets less available by increased margin requirements, taxes, or outright elimination will limit the ability of investors to hedge individual investments. This, too, could increase price volatility. Indeed, foreign markets that had little futures trading seemed to suffer as large stock price declines as in the U.S., and ironically, a study

of the crash by the London Stock Exchange concluded that it would have been better off if there had been increased index arbitrage. Finally, Shiller points out that most of the current proposals may make markets less efficient, that is, less able to respond to genuine information. This would produce a definite loss of economic welfare.

I strongly agree with Shiller's conclusions mentioned above. To put a more general perspective on evaluating the current proposals to reform financial markets, I think it is best to think of two types of reforms to reduce market volatility: ones that are designed to make financial markets more **efficient**—i.e., be more liquid, respond more quickly to new information, and reveal more information about trading—and ones that are designed to make markets less efficient. Most of the current proposals are ones that fall into the later category. As Shiller, and Edwards later point out, making a market less efficient may increase volatility rather than reduce it. In addition, making a market less efficient by slowing down its ability to change prices, by keeping out certain investors, or by closing it altogether, means that information will not be as effectively transmitted to the economy. Thus, even if making a market less efficient does reduce price volatility, this still may be a very bad idea because useful information will be unable to surface in the marketplace. The overall conclusion from evaluating proposals with **this framework** is unlikely to support making financial markets less efficient and proposals for reform that have received the most attention recently may thus be way off base.

### **Is there a role for the Federal Reserve in dealing with financial market volatility?**

Since it seems that many of the recent proposals are likely to do more harm than good, we might think that there is no constructive role for policymakers to deal with financial market volatility. I will argue that this is not the case. The Federal Reserve does have an **important** role to play to help deal with market volatility, but what should it be?

Political pressure to reduce financial market volatility is often an important factor that impinges on monetary policymakers. Often in the past, members of Congress have complained about volatile interest rates, especially when they are rising, and have put pressure on the

Federal Reserve to reduce interest rate fluctuations. Not surprisingly, Federal Reserve monetary policy is directed at smoothing interest rates, in part to keep Congress off its back. Concerns about volatility in stock market prices in the past have also stimulated Federal Reserve action. Worries about "excessive" speculation in **1929** led the Fed to tighten monetary policy, and the ensuing stock market crash is often attributed to the Fed tightening. Is Federal Reserve manipulation of financial markets to reduce volatility a good idea?

The answer is likely to be no. Government manipulation of asset prices can only improve economic well-being if the government knows better than the marketplace what asset prices should be. This is unlikely. Historical experience with government price setting is typically an unhappy one. Governments do not set prices at correct levels, especially because narrow political interests often dominate government decisionmaking. As a result, most economists are strong supporters of free markets with a minimum of government price manipulation. There is even a growing belief throughout the world that a major strength of the U.S. economy over those in the third world or the eastern block is our free markets.

To give a more concrete example of the undesirability of government manipulation of asset prices to reduce market volatility, let us examine the following question: Would the U.S. economy have been better off if the stock market crash of **1987** had been prevented? I would argue that the answer is no. What seems to be perverse about the behavior of the stock market in **1987** is not that stock prices declined over 30 percent from their peak in August, but that they rose so much in the first place. Most market analysts seem to agree that the stock market level after the crash was more in line with fundamental values than before the crash. (This is consistent with Shiller's survey results.) If the stock market crash was just a big mistake, the market should have risen back to its former level. That it did not do so is an indication that in order for the economy to have had correct information about the valuation of equities, the stock market needed to seek a lower level. If policy manipulation had prevented the crash, then the economy would have been denied valuable information.

I hope that I have now convinced you that government intervention in financial markets to manipulate prices is a mistake and should not be an enterprise undertaken by the Fed or any other government

polymaking body. However, the Fed does have an important role to play when financial market prices are volatile: its traditional role of lender of last resort. Financial market volatility does present the economy with the danger that it can lead to financial panic. Because financial panics involve the externality of one firm's failure increasing the probability of another firm's failure, there is a clear-cut role for government intervention to improve economic welfare. Indeed, an important mandate for the Fed since its founding has been the prevention of banking panics, and in recent years, the Fed has expanded this mandate to the prevention of panics in other financial markets.

Two examples illustrate how the Fed has responded to a shock in financial markets in a constructive way: the actions taken after the **Penn Central bankruptcy** and the response to the Black Monday crash.

Prior to 1970, commercial paper was considered one of the safest money markets because only corporations with very high credit ratings issued debt in this market. In 1970, Penn Central was a major issuer of commercial paper (over \$200 million), and when it went bankrupt in June of 1970, the investing public began to fear that other issuers of commercial paper might also be vulnerable. Not surprisingly, many corporations now found that they would be unable to roll over their commercial paper and they were faced with the possibility of default on their debt coming due. The **Penn Central bankruptcy**, then, had the potential for sending other companies into bankruptcy which, in turn, might have triggered further **bankruptcies**—leading to a full-scale financial panic. When the Fed was informed of the precarious state of affairs, it indicated that it would make discount loans to member banks that would make loans to the corporations who could no longer sell their commercial paper. As a result, these corporations did not default and a potential financial panic was avoided.

The Black Monday crash provided the Fed with another dangerous situation. Although October 19, 1987 will go down in the history books as the largest one-day decline in stock prices to date, reports in the financial press indicated that it was on Tuesday, October 20, that the markets faced the greatest **danger**.<sup>2</sup> The stress of keeping

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<sup>2</sup> See "Terrible Tuesday: How the Stock Market Almost Disintegrated a Day After the Crash," *Wall Street Journal*, Friday, November 20, 1987.

markets functioning during the sharp decline in stock prices on Monday, October 19, meant that many brokerage houses and specialists were severely in need of additional funds to finance their activities. However, understandably, New York banks, as well as foreign and regional U.S. banks, growing very nervous about the financial health of securities firms, began to cut bank credit to the securities industry at a time when it was most needed. The potential of a spreading collapse of securities firms was present. To prevent this from occurring, Alan Greenspan announced before the market opened Tuesday, October 20, the Federal Reserve System's "readiness to serve as a source of liquidity to support the economic and financial system." In addition to this extraordinary announcement, the Fed reversed its previously tight monetary policy and began injecting reserves into the banking system. It also contacted key New York banks and encouraged them to make loans to the securities industry. The basic strategy was then to provide liquidity to the banking system who would then provide liquidity to the securities industry. The aftermath of the Fed's strategy was that financial markets kept functioning on Tuesday and a market rally ensued that day with the Dow Jones Industrial Average climbing over 100 points.<sup>3</sup>

It is always hard to determine whether the Fed should be credited with preventing panics when a financial panic does not occur. After all, a successful Fed intervention is one that leaves the markets functioning in a normal fashion. Only when the Fed does not perform its role of lender of last resort in a financial crisis is it obvious that the Fed's lender of last resort role is important. Unfortunately, we learned this the hard way when the Fed did not perform its role of lender of last resort during the banking panics of **1930 to 1933**. The Fed's failure to perform this role during that period is now clearly viewed as a major reason for the disastrous economic performance during those years.

The Fed's performance of its role of lender of last resort to prevent financial panics has two major advantages over alternative policies which restructure markets to make them less efficient or which

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<sup>3</sup> An important aside here is that the Fed's injection of reserves into the banking system was only temporary; after the crisis was over, the Fed withdrew reserves from the banking system so that on net its actions were not inflationary.



engage in asset price manipulation. First, since the lender of last resort function does not interfere with price setting in the market, but is rather intended to make sure that there is enough liquidity for market makers, it allows the market to reflect and transmit information in an efficient manner. Indeed, a case could be made that the Fed's lender of last resort role makes the markets more efficient because investors know that market makers will always have sufficient liquidity to keep the market functioning well.

The second advantage of the Fed lender of last resort function is that it will only rarely be invoked. The two examples I have discussed above are the only two in the postwar era that I am aware of in which the Fed has performed this role to prevent panics outside of the banking system. Even if the lender of last resort role has some undesirable efficiency consequences, it impinges on the markets only rarely. Other policies which affect the functioning of the financial system in normal times have the potential for much greater efficiency losses because they are continually affecting the markets. Even if these other policies help the markets during periods of extreme volatility, they will decrease efficiency during normal times. The Fed's lender of last resort role does not suffer from this problem.

### Concluding comment

Since the Fed has performed its role of lender of last resort so admirably in the recent stock market crash episode and it didn't need an academic economist to tell it what to do, why is it important to emphasize that this is an important role for policymakers? My response to this is that it is just as important to highlight an incident where things are done right as it is to point out when things are done wrong. By so doing it is more likely that the right things will be done in the future. Indeed, it is important that the Federal Reserve always be vigilant and be ready to perform at a moment's notice its lender of last resort role to prevent a financial panic. It is also worth pointing out to politicians that having the Fed standing ready to perform this role also makes it less necessary to interfere in financial markets to reduce their volatility.

To finish my discussion, let me even take a fairly radical position to stimulate our thinking: The stock market crash was actually a good

thing for aggregate economic activity **and** preventing the crash would have been harmful. Because financial markets continued to function well after the crash, most likely because of Federal Reserve actions, there were no serious adverse consequences to the crash. (The opposite was the case during the Great Depression because of the Fed's failures during that period.) Indeed, the economy has been doing quite nicely since October 19, 1987, and if anything, may be too expansionary. Without the decline in stock market values as a consequence of the crash, consumer spending would be even stronger than it is currently. Not only would this put more inflationary pressure on the economy, but it would also leave less room for the export sector to expand its sales. Without some slowdown in consumer spending as a result of the crash, our exports cannot climb sufficiently for us to make rapid progress on reducing our trade deficit. Maybe instead of coming up with proposals to prevent a stock market crash like the one we had in 1987, we should be happy that a large decline in stock prices actually occurred.

## References

- Cecchetti, Stephen; Pok-sang Lam; and Nelson C. Mark, "Mean Reversion in Equilibrium Asset Returns," Ohio State University, mimeo, June 1988.
- French, Kenneth R. and Richard Roll, "Stock Return Variances: The Arrival of Information and the Reaction of Traders," *Journal of Financial Economics* 17, 1986, 5-26.
- Mishkin, Frederic S., *The Economics of Money, Banking, and Financial Markets*, Chapter 26. Boston: Little Brown and Co., 1986.
- Schwert, G. William, "The Causes of Changing Stock Market Volatility," University of Rochester, mimeo., 1987.