

The Fed's reaction to the stock market during the great depression: Fact or artefact? ☆

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Received 21 December 2006

Available online 14 September 2007

Abstract

A notable feature of the 1920s and 1930s is the *volatility* in several key macroeconomic aggregates, and this feature used to econometrically identify the reaction of the Fed to stock market developments. The volatility of economic activity may have contributed to deepening the divisions among policy-makers about how the Fed ought to respond to stock price developments. Relying on the technique of [Rigobon, R. 2003. Identification through heteroskedasticity. *Review of Economics and Statistics* 85, 777–792], volatility is used as an instrument to estimate the Fed's response to the stock market. Other identification assumptions based on structural VARs produce compatible results. Fed behavior appeared to have changed following the stock market crash of 1929. Consistent with the Riefler-Burgess doctrine, interest rates and stock returns are negatively related. I conclude that, prior to the stock market crash of 1929, a form of benign neglect explains Fed behavior. Thereafter, the Fed reacts only slightly more aggressively to stock market developments.

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Keywords: Great Depression; Federal reserve; Stock market

1. Introduction

An enormous literature explores the events surrounding the 1929 stock market crash in the United States. The present paper provides new evidence about the role that stock prices played in influencing the conduct of monetary policy at the Fed over the period from 1920 to 1938. I find that Fed policy amounted to fueling the rise in stock market prices prior to the fall of 1929. This result may be explained by disagreement amongst

☆ Earlier versions were presented at the ASSA Cliometrics Society Meetings, Philadelphia, York University, the Bank for International Settlements, the Norwegian School of Economics, the Norges Bank, and the Hong Kong Monetary Authority. The advice and comments by Robert Barsky, Michael Bordo, Andy Filardo, Bob Hetzel, Lars Jonung, Goetz von Peter, Dagfinn Rime, Hugh Rockoff, Eugene White, various seminar participants, three anonymous referees and the Editor, are gratefully acknowledged. Bob Rasche kindly provided vintages of industrial production for 1927–1935. Results not shown are relegated to a separate appendix.

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policy-makers over how to respond to asset price developments before the stock market crash, reflecting divisions over the degree of activism deemed adequate in the conduct of monetary policy (e.g., see [Friedman and Schwartz, 1963](#), pp. 254–266). There is also some evidence that Fed responses may have fueled the stock price increase that resulted in the Great Crash. In contrast, the Fed appears to have responded more appropriately to stock market developments, especially during the 1930s by increasing interest rates when stock prices were rising. Broadly speaking, the contemporaneous correlation between a key interest rate and stock returns is negative before the crash of 1929 but turns positive following that pivotal event. It is argued that the volatility of selected macroeconomic indicators is a critical ingredient to understanding this period of US economic history.

[Meltzer \(2003\)](#) is perhaps the latest to suggest that Federal Reserve policy during the 1920s and 1930s was significantly affected by stock market developments. He downplays other interpretations of the Great Depression, such as the debt-deflation view of [Bernanke \(1983\)](#) and [Fisher \(1933\)](#), the impact of Benjamin Strong's death in 1928 ([Friedman and Schwartz, 1963](#)), the Fed's poor understanding of the role of monetary policy ([Wicker, 1966](#)), and [Eichengreen's \(1992a\)](#) emphasis on the breakdown of international cooperation under the constraints imposed by the Gold Standard. Meltzer, however, is neutral on the question of whether the Fed actively responded to the stock market. [Romer \(1990, 1992\)](#) takes the view that links exist between stock market performance and Fed decisions during the 1920s, while [Rappoport and White \(1994\)](#) conclude that there were signs, especially in financial markets, that the 1929 stock market collapse may have been anticipated at least a year in advance. An unresolved issue is whether the era considered in this paper should be treated as a single "regime" instead of one subject to a break around 1928 or 1929. For example, there is some evidence to suggest that the conduct of monetary policy may not have changed drastically from the early 1920s through most of the 1930s (e.g., [Wheelock, 1991](#); [Meltzer, 2003](#)).¹

This paper provides new evidence to identify, econometrically, the contemporaneous relationship between stock market returns and interest rates. One approach (e.g., [Orphanides, 2003](#); [Wheelock, 1991](#)) is to estimate a Taylor type rule. While such a relationship would not have been known at the time, the notion that the Fed ought to actively conduct policy so as to maintain some form of price stability was, in fact, widely discussed both inside and outside the Fed during the 1920s (e.g., [Friedman and Schwartz, 1963](#), pp. 254–266; [Eichengreen, 1992a](#); [Meltzer, 2003](#), (pp. 181–192); [Hetzel, 2007](#), (Chapter 3)). It is important to emphasize that estimation of a reaction function for this period in US economic history should be viewed purely as a heuristic device. Such an approach helps underscore the notion that the Fed was concerned with macroeconomic events, not in a mechanical fashion, of course, but in a broad sense. Several authors (e.g., [Wheelock, 1991](#); [Orphanides, 2003](#); [Bordo et al., 2007](#)) have relied on the estimation of reaction functions to describe the conduct of monetary policy during selected historical episodes. Moreover, it is also correct to state that, over the sample considered in this paper, a short-term interest rate served as a policy instrument. Therefore, it is convenient to examine the hypothesis addressed in this paper through the device of a Taylor rule (also see [Wheelock, 2000](#); [Hetzel, 2007](#), (Chapter 3)).

Other than [Wheelock \(1991, Chapter 2\)](#), there has, to my knowledge, been no attempt to estimate a "reaction function" for the Federal Reserve over this period, or to econometrically test whether stock market or credit developments influenced Fed behavior. As we shall see, the results of this approach illuminate Fed actions particularly when real-time data are employed, or if stock market developments are permitted to play an (indirect) role in the reaction function specification. Because estimates from standard policy rules do not entirely satisfactorily measure the reaction of the Fed to stock market developments, I next consider whether stock market volatility can be used as an instrument in a statistical sense. This technique is employed in the econometric identification of the Fed's reaction to the stock market, based on the methodology of [Rigobon \(2003\)](#). Finally, estimates from a structural VAR are also presented, and these are found to complement the results from the identification through heteroskedasticity approach. Since all three econometric

¹ Many authors have identified "breaks" arising from the time series properties of the data (e.g., [Perron, 1989](#)), significant technological shocks (e.g., [Field, 1993](#); [Francis and Ramey, 2005](#)), errors or changes in the conduct of monetary policy (e.g., [Bordo et al., 2002](#)), or the strains imposed by adherence to a particular economic ideology (e.g., [Eichengreen, 1992a](#)). [Hoffman and Rasche \(1989\)](#), in a study of the demand for monthly M1 (and other monetary aggregates) before World War II conclude that the standard relationship is stable. [White \(2006\)](#) surveys booms and busts in US stock markets during the 20th Century.

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