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The Federal Reserve's Response to the 1987 Market Crash[1]

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Abstract

The S&P 500 lost 10% the week ending Friday, October 16, 1987, and lost an additional 20% the following Monday, October 19, 1987. The date would be remembered as Black Monday. The Federal Reserve (the Fed) responded to the crash in four distinct ways: (1) issuing a public statement promising to provide liquidity, as needed, "to support the economic and financial system"; (2) providing support to the Treasury securities market by injecting in-high-demand maturities into the market via reverse repurchase agreements; (3) allowing the federal funds rate to fall from 7.5% to 7.0% and below; and (4) intervening directly to allow the rescue of the largest options clearing firm in Chicago.

Keywords: Federal Reserve, stock market crash, 1987, Black Monday, market liquidity

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[1] This case study is part of the Yale Program on Financial Stability (YPFS) selection of New Bagehot Project modules considering the responses to the global financial crisis that pertain to market liquidity programs.

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The Federal Reserve's Response to the 1987 Market Crash

At a Glance

The S&P 500 lost 10% the week ending Friday, October 16, 1987, and lost an additional 20% the following Monday, October 19, 1987. The date would be remembered as Black Monday.

The Federal Reserve (the Fed) responded to the crash in four distinct ways: (1) issuing a public statement promising to provide liquidity, as needed, "to support the economic and financial system" (FOMC 1987a); (2) providing support to the Treasury securities market by injecting in-high-demand maturities into the market via reverse repurchase agreements; (3) allowing the federal funds rate to fall from 7.5% to 7.0% and below; and (4) intervening directly to allow the rescue of the largest options clearing firm in Chicago.

Summary of Key Terms	
Purpose: To ensure the functioning of stock, options, and Treasury markets during and after the crash; helping prevent the crash from causing a downturn in the broader economy.	
Black Monday	Monday, October 19, 1987
Federal Reserve Announcement	Tuesday, October 20, 1987

The Federal Reserve Bank of New York (FRBNY) also made personal phone calls to large banks in New York and Chicago to encourage them to provide credit as needed.

Summary Evaluation

The actions taken by the Federal Reserve are broadly recognized as having contributed to the improvement in market conditions. Despite the dramatic drop in stock prices, there were no significant runs on banks and the broader economy did not enter into a recession.

The Federal Reserve's Response to the 1987 Market Crash: United States Context	
GDP (SAAR, Nominal GDP in LCU converted to USD)	$4,657.6 billion in 1986 $5,008.0 billion in 1987 *Source: Bloomberg*
GDP per capita (SAAR, Nominal GDP in LCU converted to USD)	$19,071 in 1986 $20,039 in 1987 *Source: Bloomberg*
Sovereign credit rating (5-year senior debt)	As of Q4, 1986: Fitch: N/A Moody's: Aaa S&P: N/A As of Q4, 1987: Fitch: N/A Moody's: Aaa S&P: N/A *Source: Bloomberg*

Size of banking system	$3,062.9 billion in total assets in 1986 $3,313.8 in total assets in 1987 *Source: Bloomberg*
Size of banking system as a percentage of GDP	65.8% in 1986 66.2% in 1987 *Source: Bloomberg*
Size of banking system as a percentage of financial system	Banking system assets equal to 27.5% of financial system in 1986 Banking system assets equal to 26.5% of financial system in 1987 *Source: Flow of Funds, Federal Reserve*
5-bank concentration of banking system	Data not available for given years *Source: World Bank Global Financial Development Database*
Foreign involvement in banking system	Data not available for given years *Source: World Bank Global Financial Development Database*
Government ownership of banking system	Data not available for given years *Source: World Bank, Bank Regulation and Supervision Survey*

Existence of deposit insurance	100% insurance on deposits up to $100,000 in 1986 100% insurance on deposits up to $100,000 in 1987 *Source: Federal Deposit Insurance Corporation*

I. Overview

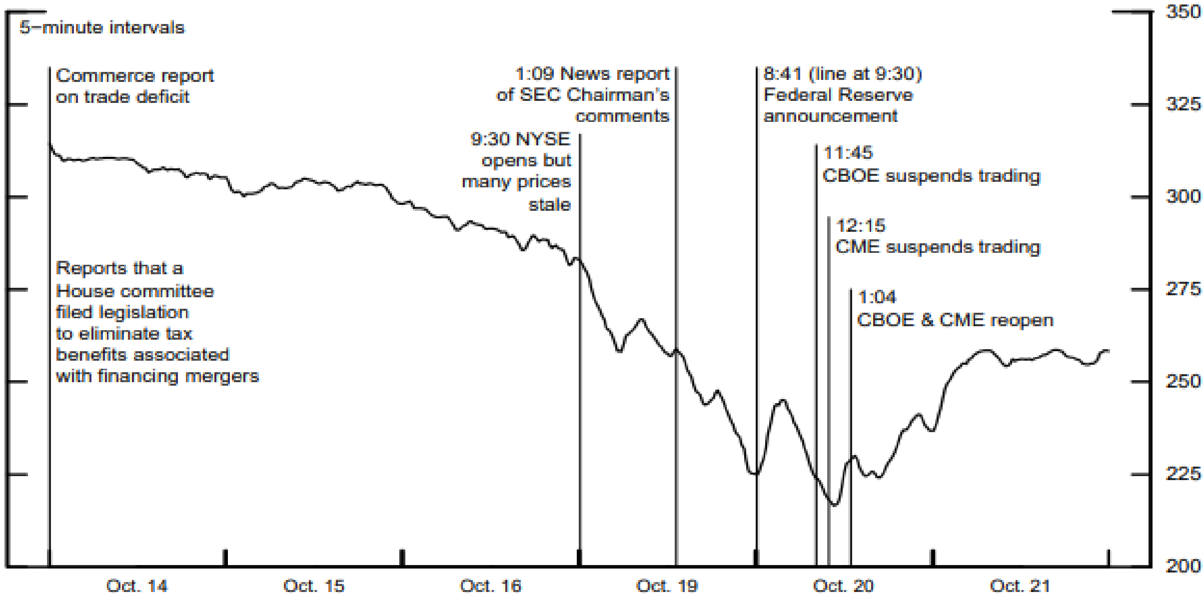
Background

From January to the end of August 1987, the stock market rose nearly 40%. The sharp increase has been attributed to the 1980s increase in demand for equities by new investors, such as pension funds, and favorable tax treatment of corporate buyouts (Carlson 2006). However, the rise in stock prices stopped in September and came crashing down in October. The S&P 500 lost 10% the week ending Friday, October 16, and lost an additional 20% on Monday, October 19, 1987. The date would be remembered as Black Monday (US Senate 1988).

The stock market crash has been attributed to a number of factors: (1) a larger-than-expected trade deficit announcement by the Federal Government (Bernhardt and Eckblad 2013); (2) a “triple witching” day on Friday, October 16, 1987—a day when stock index futures, stock index options, and stock options expire on the same day (Bernhardt and Eckblad 2013); (3) large margin calls as the market deteriorated, which greatly reduced market liquidity (Carlson 2006); (4) portfolio insurance automatic programs that were designed to shift portfolio allocations from stocks to cash as markets declined (Carlson 2006); and (5) index arbitrage automatic programs that arbitraged price differentials in futures markets and cash markets (Carlson 2006).

Due to the “unheard of levels” of sell orders, many stocks were delayed in trading for as long as two hours on the morning of Monday, October 19, 1987 (De Maria 1987). Trade volume on the New York Stock Exchange (NYSE) nearly doubled that of the previous record (Metz et al. 1987). The turbulence and high volume continued through the week ending Friday, October 23, 1987. See Figure 1 for S&P 500 index around the time of the crash. The chart includes actions taken by the Securities and Exchange Commission (SEC), the Chicago Board Options Exchange (CBOE), and the Chicago Mercantile Exchange (CME). It would take more than a year and a half for market values to return to their pre–Black Monday highs. However, despite the dramatic unrest in financial markets, the broader economy did not dip into a recession (NBER, n.d.).

Figure 1: S&P 500 Index around the Time of the Crash



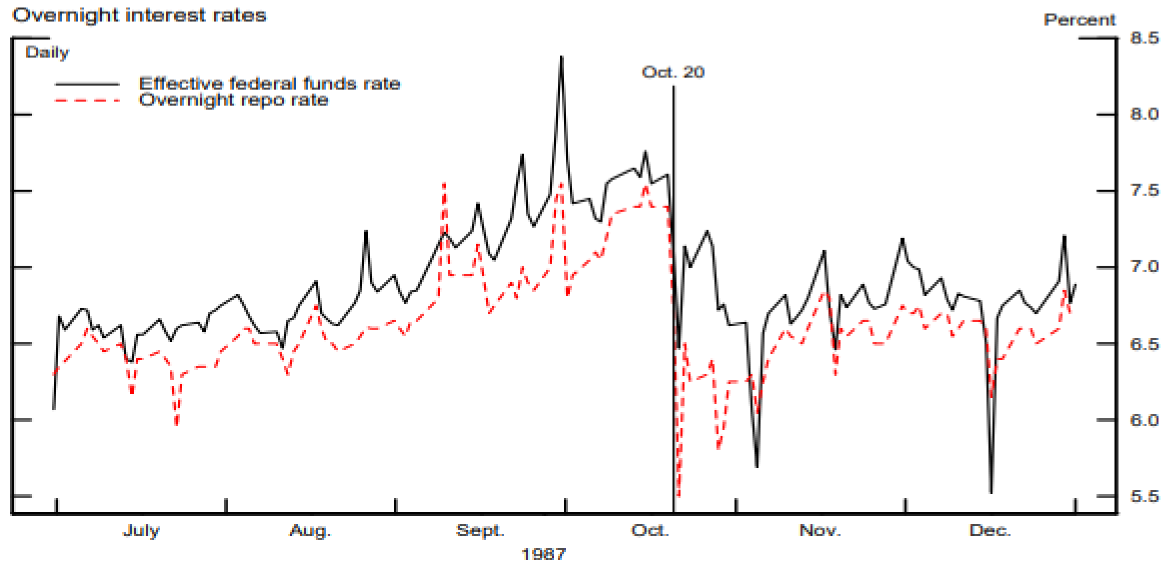
Source: Carlson 2006.

Program Description

On Tuesday, October 20, 1987, before markets opened, the Federal Reserve (the Fed) made its first move in response to the stock market crash. A one-sentence public announcement was released to assure markets that the Fed would provide liquidity "to support the economic and financial system" (Carlson 2006).

Via repurchase agreements, the System Open Market Account (SOMA) provided reserves to the banking system at a more expansive quantity and earlier in the day than normal (Greenspan 1988). Subsequently, "the federal funds rate dropped from above 7-1/2 percent just before October 19 to 7 percent and below immediately following the stock market collapse" (FOMC 1987a). Figure 2 charts the Effective Federal Funds Rate and the Overnight Repo Rate for the second half of 1987.

Figure 2: Overnight Interest Rates



Source: Carlson 2006.

The demand for US Treasury securities with certain maturities increased sharply as investors exited equity markets. To alleviate some of the pressures in the Treasury market, the Federal Reserve suspended "the size limits imposed on loans of securities to individual dealers and the requirement that such loans not be related to short sales" (FOMC 1987a). The Federal Reserve effectively entered into reverse repurchase agreements with the primary dealers. The Federal Reserve would lend Treasury securities with maturities that were in high demand to the primary dealers. As collateral for the loan, the primary dealers would give the Federal Reserve Treasury securities with maturities that were not in high demand (FOMC 1987b).

The hours of operation for the Federal Reserve's payment system, Fedwire, were extended on several occasions (Carlson 2006).

Margin calls increased at member firms of the Chicago Mercantile Exchange (CME) and the Chicago Board of Exchange (CBOE). The member firms borrowed heavily from Chicago-based settlement banks. Traditionally, the member firms would pay back the Chicago banks with funds from their parent companies, New York–based broker-dealers. With the increased quantity and size of margin calls, there were concerns that the margin calls would not be met. However, "to help make the extensions of credit and transfers of funds proceed smoothly, the Federal Reserve Banks of Chicago and New York ... let commercial banks in both districts know that the Federal Reserve would help provide liquidity for the loans" (Carlson 2006).

The president of the Federal Reserve Bank of New York made personal phone calls to large New York banks, encouraging them to provide credit to the financial system as needed: "The banks were told to keep an eye on the big picture—the global financial system on which all their business ultimately depends" (Carlson 2006). There was a temporary, one-week spike in discount window borrowing from the Federal Reserve Bank of New York (approximately $2 billion) that was rolled off by the following week (see Federal Reserve 1987a; Federal Reserve 1987b; Federal Reserve 1987c). This helped allow, "the 10 largest New York banks [to] nearly double their lending to securities firms during the week of October 19" (Bernanke 1990). The rest of the Reserve Banks didn't see any substantial change.

Continental Illinois (the bank that had been bailed out in 1984 and gave rise to the term "too big to fail") subsidiary First Options of Chicago Inc. was hit with substantial losses on Black Monday. First Options looked to Continental Illinois for emergency funding; however, when First Options was purchased by Continental Illinois, regulators placed lending caps on the amount of funding Continental Illinois could provide to First Options. It is reported that "Greenspan acted quickly to enable Continental Illinois Corp., the bank's holding company, to inject funds into the options subsidiary. Without that action, one official says, 'the options exchange would have shut down'" (*Chicago Tribune* 1987; Cohen 1987; Murray 1987).

Then–Fed Chair Greenspan reported to Congress that additional bank examiners had been placed in "major bank institutions [to] monitor bank developments" (Greenspan 1988).

The Federal Open Market Committee (FOMC) held daily conference calls from October 19–30, "to assess the extraordinary developments in financial markets" (FOMC 1987a).

Outcomes

By Wednesday, October 21, 1987, the market had recovered 58% of the Black Monday losses. However, it wouldn't surpass the August 1987 high until May 1989.

The havoc in financial markets did not spread to the broader economy (NBER, n.d.). GDP continued to grow through 1987, 1988, and 1989 (FRED, n.d.-a). The unemployment rate continued to decrease until the unrelated 1990 recession (FRED, n.d.-b). And despite the increase of reserves in the system via the open market operations, the inflation rate remained stable (FRED, n.d.-c). During the week of the market crash, there was no significant run on deposits (Kohn 2006).

II. Key Design Decisions

1. The Federal Reserve issued a one-sentence, public statement committing to provide liquidity as needed.

The following statement was issued before markets opened on Tuesday, October 20, 1987:

"The Federal Reserve, consistent with its responsibilities as the Nation's central bank, affirmed today its readiness to serve as a source of liquidity to support the economic and financial system" (Carlson 2006).

On Monday, October 19, 1987, Chair Greenspan traveled to Dallas to deliver a prescheduled speech at the American Bankers Association. The Federal Reserve Vice Chair, Manuel Johnson, gathered a group at the Board of Governors' office in Washington, DC. The group included: Donald Kohn, the director of the division of monetary affairs; Edwin Truman, the staff director of the division for international finance; William Taylor, the staff director for bank regulation and supervision; and General Counsel Michael Bradfield. The group monitored international markets overnight and drafted a statement on liquidity. Before being published on Tuesday morning, the statement was reviewed by Greenspan and Gerald Corrigan, president of the Federal Reserve Bank of New York (Murray 1987).

2. Via reverse repurchase agreements, the Federal Reserve provided Treasury securities with in-high-demand maturities to the market.

The demand for US Treasury securities with certain maturities increased sharply as investors exited equity markets. To alleviate some of the pressures in the Treasury market, the Federal Open Market Committee members agreed to temporarily suspend:

1) The size limits imposed on loans of securities to individual dealers
2) The requirement that such loans not be related to short sales (FOMC 1987).

In order to provide more of the Treasury securities with in-high-demand maturities into the market, the Federal Reserve effectively entered into reverse repurchase agreements with the primary dealers. The Federal Reserve would lend Treasury securities with maturities that were in high demand to the primary dealers. As collateral for the loan, the primary dealers would give the Federal Reserve Treasury securities with maturities that were not in high demand (FOMC 1987b).

3. The Federal Reserve allowed the federal funds rate to fall by approximately 50 basis points.

"The federal funds rate dropped from above 7-1/2 percent just before October 19 to 7 percent and below immediately following the stock market collapse" (FOMC 1987a).

The prevailing monetary policy regime focused on influencing the money supply; short-term interest rates were a secondary focus. As seen in the following quote, the FOMC tracked the federal funds rate, but the amount of fluctuation the committee would tolerate was much greater than it would later be when the policy regime shifted to influencing the short-term interest rates directly. Notes from the next scheduled FOMC meeting following the market crash read, "The members agreed that the intermeeting range for the federal funds rate, which provides a mechanism for initiating consultation of the Committee when its boundaries are persistently exceeded, should be reduced from 5 to 9 percent to 4 to 8 percent." (FOMC 1987a).

4. The Federal Reserve intervened to allow Continental Illinois (a bank holding company) lend above the legal limit to its subsidiary First Options of Chicago Inc. (then the largest options clearinghouse).

Continental Illinois (the bank that had been bailed out in 1984 and gave rise to the term "too big to fail") subsidiary First Options of Chicago Inc. was hit with substantial losses on Black Monday. First Options looked to Continental Illinois for emergency funding; however, when First Options was purchased by Continental Illinois, regulators placed lending caps on the amount of funding Continental Illinois could provide to First Options. It is reported that "Greenspan acted quickly to enable Continental Illinois Corp., the bank's holding company, to inject funds into the options subsidiary. Without that action, one official says, 'the options exchange would have shut down'" (*Chicago Tribune* 1987; Cohen 1987; Murray 1987).

III. Evaluation

The actions taken by the Federal Reserve are broadly recognized as having contributed to the improvement in market conditions. Two of the largest reviews of the Black Monday market crash and its aftermath both highlight the significance of the Federal Reserve interventions.

The Securities and Exchange Commission' Division of Market Regulation reported, "The Division believes that the actions of the FRB and the Federal Reserve Bank of New York to encourage major banks to continue their prudent financing of securities firms were critical in avoiding any potential for a liquidity gridlock" (SEC 1988).

The Brady Report, a federal executive branch report, concluded, "Had decisive action not been taken by the Federal Reserve, it appears that far worse consequences would have been a very real possibility" (Brady Report 1988).

Then academic economist Ben Bernanke summarized the actions taken by the Federal Reserve as follows: "In performing its lender-of-last-resort function, the Fed redistributed risks in the system in a socially beneficial way. Conceptually, it is as if the Fed had provided ex post insurance to the clearinghouse against a shock that it seemed possible would exhaust the insurance capability of the clearinghouse itself. Thus the Fed became the 'insurer of last resort'" (Bernanke 1990).

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