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SECURITIES AND FUTURES MARKETS

Assessment of SEC and CFTC Studies of October 1989 Market Volatilities

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The Honorable Christopher J. Dodd
Chairman, Subcommittee on Securities
Committee on Banking, Housing,
and Urban Affairs
United States Senate

Dear Mr. Chairman:

On May 31, 1990, your Subcommittee requested an analysis of the Securities and Exchange Commission's (SEC) and the Commodity Futures Trading Commission's (CFTC) reports on the market events of October 13 and 16, 1989.[1] On June 27, 1990, we briefed your Subcommittee on our analysis of the differences in methodologies and conclusions of the reports. We also discussed how the current debate regarding the SEC and CFTC roles in regulating stock index futures trading can hamper potential solutions to the data problems we identified in the reports. As you requested, this report summarizes the contents of our briefing.

Background

On Friday, October 13, 1989, the Nation's securities and futures markets experienced extraordinary price volatility, dropping $190 billion in value, $160 billion of which was lost in the last 90 minutes of the trading day. At 2:40 p.m. on Friday, the New York Stock Exchange (NYSE) halted trading in the stock of UAL.[2] At 2:55 p.m. the wire service reported that financing for a proposed buyout of UAL was in doubt. The Standard & Poor's 500 futures contract fell to its 12-point price limit[3] at 3:07 p.m. at the Chicago Mercantile Exchange (CME). At 3:16 p.m. the Chicago Board Options Exchange (CBOE) stopped stock index options trading for the day. At 3:30 p.m. CME lifted the limit on stock index futures trading, but prices quickly fell further and at 3:45 p.m. prices reached CME's 30-point price limit. By the close of trading the Dow Jones Industrial Average declined by 191 points. The decline continued into the opening of the markets on Monday, October 16, 1989, when the Dow fell an additional 63 points before rebounding and closing up 88 points.

[1] Division of Economic Analysis, Commodity Futures Trading Commission, Report on Stock Index Futures and Cash Market Activity During October 1989, May 1990; Division of Market Regulation, Securities and Exchange Commission, Trading Analysis of October 13 and 16, 1989, May 1990.

[2] UAL is the parent company of United Airlines.

[3] Price limits are prearranged market values that, when reached, limit for a specified time period the lowest price at which trades can occur.

The price volatility was accompanied by hourly trading volume levels that rivaled those of the 1987 market crash.

In response to the large price movements, both SEC and CFTC reviewed the market events of October 1989. The SEC and CFTC studies offered a variety of conclusions on the effects of such automated trading strategies as program trading and index arbitrage,[4] prearranged actions by markets to slow the pace of price declines ("circuit breaker mechanisms" or "shock absorbers"), and other issues.

For example, SEC reported that index arbitrage and other program selling strategies significantly accelerated and exacerbated the market decline. On the other hand, CFTC reported that neither program trading nor futures sales explain the observed price movements on these dates.

SEC also reported that, while a direct causal relationship between circuit breakers and a decreased rate of stock market decline is difficult to establish, at the very least, no harm is attributable to the imposition of circuit breaker mechanisms. CFTC reported that the shock absorbers used on October 13 did not appear to have moderated intraday market volatility and that when shock absorbers were imposed in one market—but not in others—volatility increased in the unconstrained markets.

SEC and CFTC had additional conclusions on issues such as the effect of trading by various futures traders and the movement of trading from CBOE to CME when CBOE closed early.

Results in Brief

The SEC and CFTC studies used the same data to describe the events on October 13 and 16, 1989. Neither study purports to identify the underlying causes of market price volatility or large downward price movements. The differences in their conclusions appear to be primarily due to differing points of emphasis and differing points of view. Thus, the reports are most appropriately viewed as useful sources of information for considering issues such as whether and how to control market volatility. The reports do not provide definitive answers to these questions, however, because they do not identify the underlying causes of market volatility.

[4]Program trading is the simultaneous trading of a group or basket of stocks. Index arbitrage is the simultaneous, or near simultaneous, sale (or purchase) of stocks that comprise or closely track a stock index and the purchase (or sale) of either futures or options on that particular index to take advantage of price differentials between the markets.

Both studies rely on trading data that provide a less than complete and precise reconstruction of the trading that occurred. Legislation has been proposed that would enhance trading data quality, but its progress is being impeded by the jurisdictional debate regarding the SEC and CFTC roles in regulating these markets.

Objectives, Scope, and Methodology

The objective of our study was to analyze the differences in methodologies and conclusions of the SEC and CFTC reports on the market events of October 1989. In arriving at our conclusions, we examined the data quality, analysis, and interpretations in the two reports. We also discussed the methodology and results of the studies with SEC, CFTC, NYSE, CBOE, and CME officials. Our work was done between June 11 and July 13, 1990, in accordance with generally accepted government auditing standards.

Data Limitations Make Complete and Precise Trade Reconstruction Difficult

SEC and CFTC used the same trading data in both studies to describe the events of October 13 and 16. CFTC and SEC staffs worked closely together to ensure that the quantitative data were identical. SEC and CFTC officials also interviewed securities and futures traders both jointly and individually. Both the SEC and CFTC studies relate trade times and trading strategies to price movements in the markets in an attempt to link particular types of trading strategies to price movements. However, the information they used was not a complete and precise reconstruction of who traded what and exactly when. Whether the trading data they used affected their analysis of events is unclear, but complete and precise information could have reduced that possibility and provided a better means to reconstruct trading activity.

Problems with the data that were used are varied and complex. As we have reported previously, the times CFTC uses for futures market trades are imputed on the basis of a range of data and may be subject to incorrect sequencing.[5] CFTC officials told us, however, that the accuracy of trade execution times at CME was better than normal because, except for one short period, the continuous decline in prices made it easier to associate specific trades with unique times. CFTC also has a large-trader reporting system that allows it to reconstruct the bulk of all trading during the day.

[5] Futures Markets: Strengthening Trade Practice Oversight (GAO/GGD-89-120, Sept. 1989).

We have not yet reviewed information systems in the securities markets. However, the SEC report indicates several problems in reconstructing stock trading. SEC obtained futures-related equity trading data on program trading and index arbitrage strategies from NYSE. This information was available from firms using these strategies because of recently imposed NYSE rules. The information SEC had on times for these trades is based upon the time the exchange received the order (order entry time) rather than the exact time the trade was executed. SEC officials told us, however, that the markets in October 1989 did not experience the same order-handling backlog as in October 1987, and that the order entry times provide good estimates of the actual execution times.

During the course of the day on October 13, program trading and index arbitrage represented about 11 percent of the sells and 2 percent of the buys at NYSE. Even when prices declined significantly during the afternoon, SEC's report indicates that these trades represented at most about 50 percent of the trading volume of Standard & Poor's 500 stocks and 36 percent of total NYSE volume. Thus, most of the trading during the day and even the majority at crucial times was unaccounted for by the program trading data.

SEC does not have a large-trader reporting system to help it reconstruct nonfutures-related equity trading. NYSE officials told us that complete and precise information is available for all stock trades, but the data are maintained by individual stock, and reconstructing trading for all stocks is a very time-consuming process. SEC tried to use this information to reconstruct nonfutures-related equity trading, but reported that because the information was designed for insider trading and manipulation investigations in single or small groups of stocks, it was difficult to use in reconstructing trading across the entire market. SEC also reported that developing information on trading strategies from these data is inefficient because major institutional investors trade in so many different ways through so many different accounts and firms that tracking the activity is a complex process. Thus, to determine most of the strategies for nonfutures-related equity trading, SEC obtained anecdotal information from a sample of large traders.

Generalizations Cannot Be Made From the Conclusions of Single Event Studies

The conclusions of both studies focus on a single market event during a narrow, volatile time period. According to the research literature, studies of multiple events over a wider time period would produce conclusions that better lend themselves to generalizations. Information from such studies, as well as other data to account for the effects of all factors on price movements in markets, would be needed to provide convincing support for conclusions about causal relationships between program trading (or other activity) and price volatility.

Although the SEC and CFTC reports make informal comparisons to other major market events and to normal trading conditions, for analytical purposes, those other events and time periods are not included with data from October 1989.

SEC and CFTC Reports Have Different Points of Emphasis and Points of View

SEC and CFTC emphasize different factors and take different points of view to reach their conclusions. This sometimes results in different conclusions, each of which is supported by basically the same trading data. As we have discussed, determining the soundness of these conclusions would require better data and a broader scoped study of the issues.

The best example of the different regulatory perspectives is the agencies' differing treatment of index arbitrage and other program trading. Their conclusions are consistent with the positions they have each taken since the October 1987 market crash. SEC stated that index arbitrage and other program selling accelerated and exacerbated the market decline. This conclusion was based on the association between relatively high levels of index arbitrage and program selling and the times of large market price declines. CFTC, on the other hand, concluded that program trading does not explain the observed price movements. This conclusion was based primarily on two findings: (1) index arbitrage was not extraordinarily large in October, either in absolute terms or in relation to total NYSE volume, and (2) although NYSE program stock sales were concentrated during periods of greatest price declines, this trading did not account for the predominant share of total stock sales during those intervals, because nonprogram stock sales also increased. Thus, both the SEC and CFTC conclusions are consistent with the trading data in the reports but involve subjective interpretation and judgment.

Debate Over Roles Should Not Impede Efforts to Improve Trading Data or Resolve Intermarket Problems

Legislation pending in Congress would significantly improve the trading data available to SEC and CFTC. The proposed market reform bills (H.R. 3657 and S. 648) would provide SEC with specific information on the trading activity of all large traders. The CFTC reauthorization bill in the Senate (S. 1729) would require futures exchanges to time all trades independently, precisely, and completely. These bills have been delayed because of congressional debate over which agency should have jurisdiction over stock index futures. Although both securities and futures exchanges are proceeding with plans to improve their data systems, passage of the legislation would emphasize the importance of these issues and ensure continued progress.

The jurisdictional debate regarding the agencies' roles may also detract from the good working relationships needed to develop processes to resolve the shifts in selling pressure between markets that apparently occurred in October 1989 because of the uncoordinated implementation of circuit breakers between the futures and options markets. After the October 1987 market crash, the President's Working Group on Financial Markets[6] proposed circuit breakers that could be imposed when large, rapid market declines occur that threaten to create panic conditions. Circuit breakers similar to those proposed were adopted across all markets. Several exchanges subsequently developed other measures to control price movements that have not been coordinated or adopted across all markets. When markets decline by a specific amount, these market-specific measures are imposed temporarily to slow the pace of decline and enable traders to evaluate their positions.

Implementation of market-specific measures that had not been coordinated between futures and options markets caused problems on October 13, 1989, when price limits at CME were activated. CBOE, which does not have similar price limits, closed for the day 9 minutes after CME reached its first price limit. CBOE officials told us that they could not keep their market open because CME's price limit shifted unmanageable selling pressure from the futures to the options market. They added that CBOE did not reopen its market when CME's price limit expired, because (1) the futures market continued to fall toward the next CME price limit and (2) the reopening process would have required more time than was available in the remainder of the trading day. CME officials told us that one reason the futures market fell to the second limit so quickly was

[6]In March 1988 the President created the Working Group on Financial Markets to identify issues, make recommendations, and seek resolution of the complex problems raised by the market crash of October 1987. The Working Group is chaired by the Secretary of the Treasury, and its members are the chairmen of the SEC, CFTC, and Federal Reserve System.

that selling pressure that would normally go to CBOE was affecting their market. For the rest of the afternoon, they added, the futures market was an outlet for trading that would have taken place on the options exchange if it had been open. This selling pressure helped keep the futures market at the second limit.

In our reports that discuss intermarket issues, we have emphasized the need for coordinated unified responses to intermarket problems.[7] This need could be met in several ways, including better coordination between exchanges and regulators, more active participation by the President's Working Group on Financial Markets, and/or consolidation of decision making on intermarket issues in a single body. The present debate regarding the SEC and CFTC roles is not conducive to the timely resolution of intermarket problems.

Agency Comments

Because of the short time frame within which you requested the information contained in this report, we did not obtain official agency comments. We did, however, obtain informal comments from SEC, CFTC, NYSE, CBOE, and CME representatives. They provided technical comments to improve the report's accuracy, and their views have been incorporated where appropriate.

As arranged with the Subcommittee, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, we will provide copies of this report to SEC, CFTC, NYSE, CBOE, and CME as well as other interested parties.

[7] See, for example, Clearance and Settlement Reform: The Stock, Options, and Futures Markets Are Still at Risk (GAO/GGD-90-33, Apr. 1990).

The major contributors to this report are listed in appendix I. If you have additional questions, please call me at 275-8678.

Sincerely yours,

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