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October Crash Was Market-Generated

What caused Black Monday on the stock market? According to NBER Research Associate **Robert Shiller**, the most important factor for both individual and institutional investors was the 200-point drop in the Dow on the morning of October 19. Investors were reacting to price movements themselves rather than to any specific news stories.

Shiller sent questionnaires to investors on October 19 and shortly thereafter, when the Dow Jones industrial average had plummeted 508 points or nearly 23 percent. The answers he received from nearly 1000 individual and institutional investors indicated that no news story or rumor appearing on October 19 or the preceding weekend was responsible for their behavior that day. While some analysts blamed the crash on the October 14 news that the House Ways and Means Committee agreed on tax changes that would make corporate takeovers less attractive, Shiller found that only three respondents mentioned this. Neither bad trade deficit figures nor a poor producer price figure caused them to sell. The short-run sell signal of a popular investment letter (Prechter), the increase in the prime rate by Chemical Bank on October 15, the suggestion by Treasury Secretary James A. Baker III that the dollar should fall further, the U.S. attack on an Iranian offshore oil platform, and too much debt (federal budget, international, or personal) also were not responsible for the massive sell-off, according to Shiller's survey.

Rather, Shiller reports, in **Investor Behavior in the October 1987 Stock Market Crash: Survey Evidence**

(*NBER Working Paper No. 2446*), that the timing of the crash was related to internal dynamics of investor thinking, investors' reactions to plunging stock prices, and investors' reactions to each other. Before the crash, both buyers and sellers generally thought that the market was overvalued relative to fundamental values. People did not seem to realize how many investors thought that the market was overpriced, Shiller reports. In any case, investors continued to buy stocks.

According to Shiller's survey, there was a great deal of investor talk and anxiety preceding October 19. They were seeking the advice and market predictions of brokers and friends. Investors were checking prices frequently. Individuals, on average, checked prices 3.2 times on that Monday. Institutional investors checked the prices of stocks 35 times that day.

"Investors had expectations before the 1987 crash that something like a 1929 crash was a possibility, and comparisons with 1929 were an integral part of the phenomenon," writes Shiller. The crash cannot be understood without reference to those expectations.

Almost everyone in Shiller's sample heard of the market crash that Monday. In fact, his average individual investor got the news by 1:56 p.m.

Shiller learned that many investors manifested symptoms of real anxiety—difficulty concentrating, sweaty palms, tightness in the chest, or irritability. They were afraid for their financial welfare.

"Many investors thought they could time the market," notes Shiller. "Technical analysis played an

important role in their predictions, and thus in the decline in demand on October 19. They also often wrote 'gut feeling' as their forecasting method, and often seemed to say that they were guessing about the psychology of other investors." They were trying to guess when other investors would sell. The view of many investors, that market psychology is the reason for market movements, is consistent with their holding stocks when they also thought them overpriced.

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Many investors believed that the huge magnitude of the price drops on October 14-16 implied that prices would rebound after the weekend, on Monday. Many other investors worried about a 1929-style crash. The latter group obviously outnumbered proponents of the "rebound theory."

Shiller concludes that portfolio insurance was only a small part of predetermined stop-loss behavior. Only 5.5 percent of institutional investors responding to the questionnaire said that they follow an explicit portfolio insurance scheme: selling index futures contracts continually as stock prices decline to hedge against further losses. But 10 percent of the institutional and individual investors responding to the survey had a policy of limiting losses. And among those who sold on Black Monday, close to 40 percent of individual investors and 20 percent of institutional investors had stop-loss policies. DF

Why Is Private Unionism Shrinking While Public Unionism Grows?

Unionism in the United States has changed dramatically in the last 20 years. In the private sector, it has withered: the proportion of nonagricultural wage and salary workers who are in unions has fallen from one-third of the labor force to only 14 percent—a level comparable to that of the Great Depression. On the other hand, the proportion of public sector

workers who are unionized has grown from about 11 percent in the 1960s to over one-third today. Because the private sector employs five out of every six workers, the percentage of the labor force that is unionized has plummeted from 36 percent in 1956 to 18 percent in 1986. One in three union workers is now a government employee.

In **Contraction and Expansion: The Divergence of Private Sector and Public Sector Unionism in the United States** (NBER Working Paper No. 2399), **Richard Freeman** argues that private sector unionism has declined mainly because management opposition to union organization has increased. Public sector unionism has expanded, he believes, mainly because of the passage of comprehensive collective bargaining laws.

Freeman disposes of two standard explanations for the decline in unions. One is that increased employment in occupations (white collar), demographic groups (females and college graduates), industries (services), and regions (the South) that are traditionally nonunion explains the decline in unionism. Such "structural" explanations come up against a very inconvenient fact, Freeman notes: unionization has not declined nearly as much in other countries (notably Canada) that have had the same change in the structure of employment.

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Nor can changes in public opinion account for the decline, because it simply has not changed much. Public approval of unions, as measured by surveys, was the same in 1985 as in 1973. Furthermore, in both 1977 and 1984, one-third of nonunion workers said that they wanted unions at their workplaces. Yet unionism declined sharply over this whole period.

Freeman finds that about half of the decline in unionization can be accounted for by increases in unfair labor practices. One indicator of antiunion activity by private management, notes Freeman, is the number of charges of "unfair" labor practices (the term used by the National Labor Relations Board) brought against management by unions. Such practices typically occur when a union is trying to organize. The annual number has roughly quadrupled since 1960. This increase cannot be attributed simply to a higher proclivity of unions for complaining to the NLRB: the proportion of such charges upheld in court has been roughly constant.

But why has management become more opposed to unions? Freeman argues that the stakes are higher

now. In the 1970s the premium paid to union workers rose and unionism became more costly for employers. Also, increased competition from expanded international trade, deregulation, and nonunion firms is making unionism expensive.

In the public sector, on the other hand, there has been virtually no management opposition to unions. This void has made laws requiring collective bargaining easier to pass and has made union organizing easier. One reason for this lack of opposition is that a large percentage of public sector workers vote: they can punish recalcitrant politicians (or employers). Also, public sector employers who illegally oppose unions are likely to be removed from office. Finally, unions and their employers are often allies in lobbying for increased government spending. Government managers may welcome unions for their help in obtaining larger budgets.

In interpreting his findings, Freeman makes two caveats. First, unfair labor practices may substitute for lawful activity by management against unions: if so, Freeman's estimates *understate* the full impact of management's fight against unions. Second, lawful antiunion activity may complement unfair activity: in this case, Freeman's measures *overstate* the impact of unfair practices but may accurately measure the impact of management opposition, lawful and otherwise. DRH

Increases in Energy Prices Not the Cause of Productivity Slowdown

The growth rate of output per worker in U.S. manufacturing declined by over 50 percent during the 1970s. From an average of 2.57 percent per year between 1949 and 1973, it fell to only 1.07 percent per year between 1973 and 1981. That decline in productivity coincided with a sharp increase in energy prices, leading many economists to search for links between the two.

One of their leading hypotheses states that the rise in energy prices rendered obsolete much of the U.S. capital stock. That obsolescence reduced the effective capital per worker, thus reducing the rate of growth of worker productivity. But NBER Research Associate **Charles Hulten, James Robertson, and Frank Wykoff** refute this hypothesis in **Energy, Obsolescence, and the Productivity Slowdown** (*NBER Working Paper No. 2404*).

Hulten, Robertson, and Wykoff reason that if increases in energy prices really make older, energy-inefficient capital obsolete, then prospective buyers of *used* capital should only be willing to buy this capital for less money. The reason is that the expected future stream of income from such capital would be lower. But the authors find that no general decline in the prices of used capital occurred when energy prices rose.

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They examine price data for five types of heavy-duty construction equipment (D9 tractors, D6 tractors, motor graders, rubber tire loaders, and backhoes) and four types of used machine tools (turret lathes, milling machines, presses, and grinders). These particular assets were selected partly because good data are available on them and partly because they represent one group of energy-intensive assets (construction equipment) and one group of energy-nonintensive assets (machine tools) used widely in manufacturing.

Correcting for other factors, such as inflation, the authors find an *upward* shift in the prices of four out of five types of construction equipment. The prices of the fifth type—backhoes—declined, but not significantly. On the other hand, the prices of three out of four types of machine tools declined significantly. The fourth—milling machines—increased, but not statistically significantly.

Thus, there was no *general* decline in prices of used capital after 1973. If increased energy prices had been a major cause of capital obsolescence, then the decline in prices of the more energy-intensive assets—construction equipment—should have been more pronounced than the decline in prices for the less energy-intensive assets—machine tools. Instead, prices for construction equipment increased while prices for machine tools declined. This casts doubt on the notion that increases in energy prices were a major culprit in the decline in U.S. manufacturing productivity in the 1970s. DRH

Recent NBER Books

Mergers and Acquisitions

Mergers and Acquisitions, edited by Alan J. Auerbach, is available from the University of Chicago Press at a cost of \$17.95. This nontechnical volume of papers presented at an NBER conference in October 1986 surveys some of the issues created by the recent boom in takeovers. For example, one paper asks whether mergers have led to financial instability. Another considers how mergers affect the interests of stockholders. A third study analyzes the role of taxes in mergers and acquisitions. There is also an in-depth analysis of the implications that this wave of activity has for industrial structure and concentration.

This book should appeal to a wide audience and is must reading for anyone interested in corporate finance and recent trends in business.

Auerbach is a professor of economics at the University of Pennsylvania and an NBER research associate.

Pensions in the U.S. Economy

Pensions in the U.S. Economy, edited by Zvi Bodie, John B. Shoven, and David A. Wise, is available from the University of Chicago Press for \$28.00. This fourth in a series of NBER books on pensions should interest both economists and policymakers who are concerned with the economic status of the elderly.

Four papers focus on retirement saving, both by individuals and by corporations through their funding of pension plans. These papers consider the use of

Individual Retirement Accounts, why individuals do not purchase more annuities, why pension contributions have fallen recently, and why a large portion of the elderly remain poor despite gains for the elderly population as a whole.

The final two papers analyze pension plans. Specifically, one considers the relative merits of defined-contribution versus defined-benefit plans; it includes new data that could be used in designing plans that would incorporate the best features of both. The second paper evaluates the various incentives built into pensions and discusses how they influence job turnover.

Bodie is a professor of finance at Boston University. Shoven is a professor of economics at Stanford University, and Wise is a professor of political economy at Harvard's Kennedy School of Government. All three are research associates of the National Bureau of Economic Research.

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