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INVESTOR BEHAVIOR IN THE OCTOBER 1987 STOCK MARKET CRASH: SURVEY EVIDENCE

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ABSTRACT

Questionnaires were sent out at the time of the October 19, 1987 stock market crash to both individual and institutional investors inquiring about their behavior during the crash. Nearly 1000 responses were received.

The survey results show that: 1. no news story or rumor appearing on the 19th or over the preceding weekend was responsible for investor behavior, 2. investors' importance rating of news appearing over the preceding week showed only a slight relation to decisions to buy or sell, 3. there was a great deal of investor talk and anxiety around October 19, much more than suggested by the volume of trade, 4. Many investors thought that they could predict the market, 5. Both buyers and sellers generally thought before the crash that the market was overvalued, 6. Most investors interpreted the crash as due to the psychology of other investors, 7. Many investors were influenced by technical analysis considerations, 8. Portfolio insurance is only a small part of predetermined stop-loss behavior, and 9. Some investors changed their investment strategy before the crash.

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Investor Behavior in the October 1987

Stock Market Crash: Survey Evidence

On Monday, October 19, 1987, the Dow Jones Industrial Average fell 508 points, a drop of 22.6% in one day. This crash was unprecedented in stock market history. The next biggest one-day drop in the Dow Jones industrial average, on Monday, October 28, 1929, was only 12.8%.[1] The October 19, 1987 stock market crash was preceded by three drops in the Dow Jones Industrial Average, on Wednesday October 14, Thursday October 15 and Friday October 16, of 95, 58, and 108 points respectively.

I have for some time been using questionnaire survey methods to learn about investor behavior. As part of the Investor Behavior Project at Yale University, John Pound and I have done several surveys of investors to learn general patterns of behavior (Pound and Shiller [1986], Shiller and Pound [1987]). I have undertaken pilot questionnaire surveys immediately after a couple of major stock market drops (Shiller [1986]) to see what can be learned about these drops. We have found that questionnaire surveys aimed at collecting specific facts about individual behavior are useful research methods. We learned among other things that well-posed open-ended questions (where the respondents are asked to write their own reply) do help us to learn things not obtainable from traditional questionnaires. The questionnaire format seems often to provoke thoughtful responses, as the frequent and sometimes extensive answers indicate.

To try to understand what happened on October 19, 1987 and surrounding

[1]The combined drop October 28 - 29 1929 was 23.1%.

dates, I undertook four different mail questionnaire surveys: two small pilot surveys (PILOT1 and PILOT2) both mailed out before 5:00 p. m. October 19, and then a major survey of individual investors (INDIV) (mostly sent out by 5:00p. m. October 21) and a major survey of institutional investors (INSTI). All questionnaires were mailed before 5:00 p. m. October 23, 1987, so that investors would receive them while their memories were fresh. In total, there were 3250 questionnaires sent out and 991 completed questionnaires received, for an overall response rate (adjusting for 227 addressee unknown or deceased returns) of 32.8%.

In this paper, I report on general survey results, and then provide interpretations and conjectures for what happened on October 19, 1987.[2]

I. Prior Pilot Surveys

The structure of the questionnaires sent out in the week of October 19 was informed by the results of previous questionnaire surveys following market drops. It is useful, then, to indicate briefly what was learned from these.

1. September 11-12, 1986

On September 11 and 12, 1986, the Dow Jones Industrial Average dropped a total of 120.78 points, or 6.43%. The September 11 drop of 86.61 points in the Dow was the steepest one-day drop in percentage terms since May 28, 1962. Desiring to see if anything could be learned about the events on those days, I sent out immediately after the drop in the market a short pilot questionnaire to 175 institutional investors and 125 individual investors

[2] _Barron's_ magazine also did a poll of investors in the closing days of October, Palmer [1987]. Their poll did not include institutional investors.

(the latter, from a list of those from a random sample of high-income Americans, provided by Survey Sampling, Inc., who indicated in response to a previous questionnaire that they held common stocks). The questionnaire asked among other things:

> Can you remember any reason to buy or sell that you thought about on those days [September 11-12]? (Please try hard to remember. Don't give something you thought or talked about later).

Of those who responded (38% of those polled) there was a near-total absence in the answers of any "story" about the market decline, that is, any repeated reference to a concrete news break or rumor on those days, except for the decline in the market itself. No more than three respondents seemed to refer to any one other economic theory or fact on those days (see Shiller [1986]).

2. January 23, 1987

Between 1:30 and 3:00 p. m. January 23, 1987, the Dow Jones Industrial Average dropped 115 points and then rose 60 points. I wanted to see if survey methods could shed light on what went on in that 1 1/2 hour period. Thinking that stockbrokers may have a good feel for investor concerns, I tried this time a pilot survey of 1000 stockbrokers selected at random from throughout the United States. The idea this time was to tabulate 'key words' that were used at various times of the day. I asked respondents to tabulate "rumors, stories, theories, names, words, facts, or expressions, that people used in conversations at various times of that day". The response rate for the survey was only 8.2%, perhaps in part because the survey was difficult or unappealing to respondents and because the survey was mailed out rather late after the market drop, so that they could not remember. For what it is worth, however, the only key words found in the 1:30-3:00 period were "program trading," "profit taking," "madness," and "buying panic" and the only other repeated theme of conversations was estimates of how many years ago this last happened.

These pilot surveys suggested that there is no concrete story for big market drops. The answers to open-ended questions suggested people were reacting to price changes themselves, so that the price drop fed on itself in a vicious circle. I spent some time thinking and soliciting opinions how to write a questionnaire that would provide information about the importance and nature of this and related phenomena. Thus, I was prepared with a different questionnaire formulation for the market drop surrounding October 19, 1987.

II. The Four Surveys of the October, 1987 Crash

The four surveys were:

1. PILOT1: Pilot study regarding October 14-16. After the precipitous downturn in the stock market October 14-16, a pilot questionnaire was sent out, this time to the same 125 individual investors who were used in the September 11-12 1986 pilot survey. These were mailed out early on the morning of October 19, 1987. Of those sent out, 51 completed questionnaires were received.

2. PILOT2: Pilot study regarding October 19. After the 200 point drop in the Dow Jones Industrial Average on the morning of October 19, 1987, it was apparent that the pilot survey mailed out that morning had missed a much bigger stock market drop, although the full magnitude of the October 19 drop was still not known. It was a simple matter to repeat the mailing of that morning, with the primary change that the questionnaire pertained to October 19 rather than October 14-16. These were mailed at about the time that the

markets closed on October 19. There were 51 completed questionnaires.

3. INDIV: Full study of individual investors. After the closing of the market October 19, 1987, when the magnitude of the crash was known, it was decided to go ahead with a major survey. The questionnaire was revised taking account of the news of that day, and suggestions of several colleagues. The questionnaire was mailed out to 2000 individuals on October 20-2. The list of names was from W. S. Ponton, and entitled "High-Grade Multi-Investors" with a random selection from the entire United States.[3] There were 605 completed responses.

4. INSTI: Full study of institutional investors. A questionnaire nearly the same as that of the October 19 survey of individuals was prepared and mailed to 1000 investment managers sampled at random from the section "Investment Managers, Alphabetical Index" from the Money Market Directory of Pension Funds and their Investment Managers 1987. There were 284 completed responses.

The PILOT1 and PILOT2 sample is more likely than are the others to be representative of all high-income persons who hold stocks, and since the

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[3] This INDIV list is described in the Ponton Investor List Catalog Vol. VIII by "names on three (3) or more lists - net worth of generally over $250,000.00," (p. 4). Harvey A. Rabinowitz (president of W. S. Ponton) explained to me that they maintain many mailing list of investors. The high-grade multi investor list consists of people who are on three or more of their lists that are suggestive of high-income, active investors. Most lists described in their catalog are used. Sources of lists include "Clippings from almost every daily, weekly and religious newspaper in the United States, legal journals, business directories & magazines, public court house records, replies to space ads in all types of business & investment publications, investment seminar attendees, trade-offs with stock brokerage firms & business/financial & investment publications, a few corporate stockholder lists, purchase of lists from some investment firms that are no longer in business, & many private & personal sources," (Investor List Catalog, p. 23). However, Rabinowitz said there was no use made of some of their more unusual lists (their lists of gamblers, cattle or new movie investors). The average income of INDIV survey respondents was $136,700.

surveys were sent out very early, the results rely on fresher memories. However, the sample size is small. The INDIV sample should be representative of <u>active</u> wealthy individual investors, and has the largest sample size. The INSTI sample should be representative of officers of all ranks in investment management groups, and is not aimed particularly at the managers of large portfolios.

III. Results

Breakdown into Buyers and Sellers

Respondents for the INDIV and INSTI questionnaires were asked whether they were net purchasers or sellers on various dates; see Table 1.[4] Of course, institutional investors trade much more frequently than do individual investors. On October 19, the number of net buyers approximately equalled the number of net sellers both for institutional and individual investors. For the month before the crash, September 12 - October 12 - institutional investors who changed their holdings generally reported decreasing their holdings, individual investors increasing their holdings. Between October 19 and October 20 this was reversed, institutional investors buying and individual investors selling. For other time periods, both institutional investors and individual investors report moving the same way; this can happen of course with numbers of buyers and sellers even though the value of the amount bought by all buyers must equal the value of the amount

[4] Of PILOT respondents, 3.9% bought and 5.9% sold October 14-16, 9.0%% bought and 5.9% sold on October 19. These percentages are slightly higher than among the INDIV investors, though not statistically significantly higher. The difference may be due to the wording of the question. Some of the INDIV or INSTI respondents who both bought and sold in the interval may put down "No Change" in the questionnaire, even though they traded.

sold buy all sellers. The survey also missed certain categories of buyers or sellers (e. g., foreign investors and New York Stock Exchange specialists).

All results in the remaining tables are broken down between buyers and sellers as described in this section.

No Clear-Cut Reaction to News

In an effort to assess directly what it was that people were reacting to, I included in this survey a list of news stories that were claimed in the media as possible determinants of the stock market declines October 14-19, 1987, and asked respondents to rate their importance. They were asked to rate on a 1 to 7 scale (one completely unimportant, seven very important) "how important each of the following news items was to you personally on October 19, 1987. . . Please tell how important you then felt these were, and not how others thought about them." The question here departs from the format in my earlier questionnaires, in that this time I suggested the news stories, and used an open-ended question format only for the last category, "other".

The news items are shown in Table 2, question A; investors seem to think that just about everything is at least somewhat relevant. There is a broad similarity in results between individual (INDIV) and institutional (INSTI) investors. The 200-point drop in the Dow on the morning of October 19 is the most important for both groups, and the price drops of the preceding week are second or third for both. Treasury bond yields hitting 10.5% are second or third for both groups. For both groups Prechter's sell signal is given lowest importance, the producer price index figures the second lowest, and the U. S. attack on the Iranian oil station the third lowest. The low importance given to the producer price index announcement confirms that there is some accuracy to the answers: the announcement was not out of the ordinary at all and not substantive news; people knew that. The low importance given to the attack on the Iranian oil station is significant: it seems to be the best candidate for an important news event that become public knowledge right on October 19 or over the weekend.[5]

Not many in either group wrote in an answer under "other". When they did, the items entered were highly varied. They rarely mentioned current news stories. A 'too much indebtedness' theme seemed to be most common: they referred to such things as the federal deficit, national debt, budget deficit or taxes. Of the 90 individual investors who wrote in an answer, 33.3% mentioned such a theme, of the 55 institutional investors, 20.0% mentioned this theme.

The Barron's survey (Palmer [1987]) included a question that was somewhat similar. Respondents were read a list of "things that have been mentioned as possible causes of the recent fluctuations in the stock market - particularly the 508 point drop on October 19," and were asked to rate the importance of each of them. One important distinction between their question and mine is that they are asking for opinions held after the crash, and not asking them to recall what they were reacting to then. Their question also did not emphasize that what was wanted was a personal opinion, and not just a distillation from the post-crash media accounts. According to their survey, the most important items were the budget deficit and program trading, and everyone getting nervous at the same time about the way the economy is going, followed by the trade deficit and investor speculation, and everyone getting nervous at the same time about the high stock market

[5]The attack occurred at about 7:00 a. m. Eastern Daylight Time.

and government economic policies. Their respondents did not think that banks announcing an increase in interest rates was important at all, whereas in the results I report in Table 2, this had moderate importance. Barron's also found that the decline in the dollar and the recent merger and takeover activities were unimportant.

With the results reported here in Table 2, there was little difference between buyers' and sellers' ratings of the news events, with minor exceptions: sellers October 19 were somewhat more impressed than others with Treasury Secretary Baker's statement that the dollar should slip further, and slightly more impressed with the rise of the prime rate.

That nothing stood out in the Table 2 results beyond the price delines may be thought of as perhaps consistent with the general conclusion I was inclined to from previous surveys: that investors may be reacting to price movements themselves on days of big market drops, and not to any specific news stories. However, some of the non-price news stories were rated as almost as important as the news of the price drop itself. Moreover, one question that I wrote with the expectation that it might confirm that people reacted to price movements did not go as I expected. I asked "Suppose that as of October 19, 1987 the same news had occurred except for the news of price drops. Would your evaluation of the market or decisions to buy or sell on October 19 have been substantially different?" Only 18.3% of the individual investors and 34.0% of the institutional investors agreed with this statement (Table 2, Question B.). Perhaps the question was too subtle, and open to alternative interpretations.

Other evidence also suggests that people were not reacting to concrete news stories. In the PILOT2 survey, respondents were asked "Was any news story, that you read in the paper then, heard from an advisory service, etc., or from anyone else, or any rumor on your mind over the weekend or on that day as a reason to buy or sell that day? Of the 48 respondents who answered, 9 or 19.7% said yes, the remainder no. These were then asked "If yes, can you describe the story or rumor? (Be sure you're describing something you heard on that day. Please try hard to put something down, but don't put something done that really wasn't on your mind then.)" Only 3 put down a genuine news story. Among the others one wrote "a friend who is a securities analyst had informed me two weeks earlier he had pulled all of his clients out of the market." Another wrote "News media stories about 'panic'/'free fall,' 1929 etc," another that "I discussed with my broker on 10/15 and decided to stay calm," another that "news commentators looked grim - like trying hard not to panic people." In PILOT1, respondents were asked the same question regarding the days October 14-16. Of these, 21.6% said yes, but few of these entered any news story, and nothing consistent emerged. Almost all of the responses reported not news stories but advice of brokers and friends, or predictions others made about the future course of the market.

Much Talk, Much Anxiety, little Action

The survey revealed a remarkable amount of concern and involvement in the stock market among individual and institutional investors, while very few individual investors and only a moderate number of institutional investors actually changed their holdings on October 19.

Almost everyone (96.7%) in the random sample INDIV of individual investors who responded said they had heard of the market crash on the day of the crash. Of these, the average time when the investor became aware of "above average stock market drops" was 1:56 p. m. Eastern Daylight Time, remarkably early for individuals in the nation as a whole when one considers that this is only 10:56 a. m. Pacific Daylight Time. Only 18.4% of the individual investors in INDIV did not hear of the drop until after 5:00 p. m. local time (as would be the case if they learned of it on the evening news). For institutional investors (INDIV) the average time when they became aware was 10:32 a. m. Eastern Daylight Time. Roughly speaking, they were almost all aware as the event unfolded.

The average individual investor in INDIV reported talking to 7.4 other people on the day of the crash, the average institutional investor 19.7 other people. The average individual investor (INDIV) checked the price of stocks 3.2 times on that day. The average institutional investor (INSTI) checked the price of stocks 35.0 times that day.[6]

Many of these people were emotionally involved in the market. The questionnaire asked about actual symptoms of anxiety experienced by respondents (see Table 3, Question A): difficulty concentrating, sweaty palms, tightness in chest, irritability, or rapid pulse. Fully 20.3% of the individual investors in INDIV and 43.1% of the institutional investors answered yes for the date Monday, October 19; substantial percentages answered yes for adjacent days. It is remarkable that such a proportion of the general population reported such specific symptoms of real anxiety at one time.

Moreover, 23.0% of the individual investors and 40.2% of the institutional investors reported experiencing a contagion of fear from other

[6]The figure is the number who provided an answer to the question; many did not answer but wrote in the margin "very many times" or "continuously".

investors. Among individual investors who sold on October 19, 53.9% reported experiencing contagion of fear. Moreover, 35.0% of the individual investors and 53.2% of the institutional investors report talking of events of 1929 on the few days before October 19. The percents who spoke of 1929 were even higher for those who sold on October 19. (See Table 3, Questions B and C.)

Despite all this anxiety, most people did not change their holdings of stocks. As we saw from Table 1, only 5.2% of the individual investors surveyed reported actually being net buyers or sellers of either individual corporate stocks, index futures or stock options on October 19. (A higher proportion reported having changed their holdings between October 12 and 19) There were almost four times as many who experienced the symptoms of anxiety. With institutional investors, 31.1% changed their holdings on October 19; slightly less than the percentage reporting experiencing symptoms of anxiety. Thus, there was a lot of talk and anxiety, little action.[7]

Many Investors Thought They Knew What the Market Will Do

I asked a question aimed at discovering whether investors thought on October 19 that they knew when a rebound was to occur (Table 4, question A). The point of this question was to learn the motivation of buyers that day. Among individual investors fully 29.2% (or ten times the number of people who actually bought that day) reported yes. Among institutional investors, 28.0% reported yes, well over the percent who bought that day. Respondents were then asked "If yes, what made you think you knew when a rebound would

[7] A Wall Street Journal/NBC News poll Nov. 17-18, 1986 queried 271 adults who said they have an account with a stockbroker. Of these, 67% said they traded financial securities three times a year or less, 16% four to ten times a year, 10% more than ten times a year, and 7% were unsure. Wall Street Journal, Nov. 5, 1987, p. 2.

occur?" Many individual investors said "intuition" or "gut feeling" or just "knew there would be a rebound." Often individual investors mentioned theories of what the "big" investors were doing. There was often a suggestion that the market tends to rebound when certain conditions were met, but only infrequent references to technical analysis. Institutional investors usually did not explain why they expected a rebound. When they did, the answers were usually similar to those of individual investors, simple intuitive statements: "gut feel," "historical evidence and common sense," "market psychology."

A common theme in answers to this question among institutional investors was that the magnitude of the decline was prima facie evidence of a rebound: "too far too fast for it not to rebound," "logic (wishful thinking perhaps) that such a decline has never occurred without a corresponding up reaction." Of the 73 institutional investors who explained why they expected a rebound, 37.0% volunteered such an argument. The theme was the magnitude of the decline, not the bargains that were created by the decline. Among institutional investors who answered, only 13.7% cited the low prices themselves as reason to expect a rebound. Individual investors were less likely to mention either theme as reason to expect a rebound: 13.6% of the 154 individual investors who explained why they expected a rebound volunteered that the magnitude of the drop itself was a reason to expect a rebound, and 8.4% cited the low prices.

Only one institutional respondent and only one individual respondent mentioned portfolio insurance and only one institutional respondent mentioned index arbitrage in answer to this question. The absence of mention of these is surprising; one might expect such program trading to be part of a theory of rebounds since program trading was widely held to be the reason for the stock market drops. A few institutional investors mentioned that the stock market decline included many quality equities, allegedly a sign of a rebound. A few institutional and individual investors mentioned a psychological theory that the close of the market would exhaust the panic.

The pilot questionnaire also had a related question. In answer to the question "Did you at any point feel that prices had fallen too far, and that bargains had been created?" Yes answers were given by 48% of the PILOT1 respondents and 74% of the PILOT2 respondents, the latter a far higher percent than thought they had a pretty good idea when a rebound would occur among INDIV investors. Perhaps the difference in answers has to do with the absence of the words "pretty good idea" in the INDIV question. Moreover, a "bargain" does not imply a "rebound," and as we shall see next, opinions of over- or undervaluation does not seem to be the basis for most trade.

The average Investor Thought the Market was Overvalued Before the Crash.

Fully 71.7% of the INDIV investors and 84.3% of the INSTI investors reported that they thought around October 12, just before the crash that the market was overpriced relative to fundamental value (Table 4, question B). The question said "try hard to remember what you thought then" [October 12]. Of course it is quite possible that persons' reporting of their own past thoughts was colored by the events that followed October 12.

Consistent with their report that they thought the market was overpriced, only 36.1% of the INDIV investors and 22.2% of the INSTI investors described themselves as bullish and optimistic relative to other investors on this date (Table 4, Question C.).

Thus, few people in the INDIV and INSTI thought they were more optimistic about the stock market than average. It was as if people did not realize how many others shared the view that the market was overpriced. Apparently the view did not dissuade many people from buying stocks nonetheless.

What is particularly interesting about their answers is that those people who reported net buying between September 12 and October 12 were just as likely to think that the market was overpriced on October 12: 68.1% of the individual investors in INDIV who were buying then and 93.1% of the institutional investors in INSTI buying then. There are various reasons why some investors might buy when they think the market is overpriced. For example, many investors apparently think that they can time the market, and buy while it is still going up. One institutional investor who had been increasing holdings between September 12 and October 12 agreed that the market had been overpriced but volunteered "Although we thought this to be true, we followed the 'trend is your friend' philosophy." Another who had not changed holdings over the interval wrote "not expecting such a dramatic decline - expecting lower price to develop over the next 3-6 months." Some follow a policy of reinvesting dividends. Others may follow the popular "dollar-cost averaging" plan of buying equal amounts of money at regular intervals, which is often described as a sober and responsible plan that will cause the investor to acquire fewer shares when stocks are overpriced.

Weekend Effect

Both the October 19, 1987 and October 28, 1929 crashes occurred on a Monday after a preceding week of great market turmoil. It is plausible that the magnitude of the drops had something to do with the fact that a weekend gave people the time to reach decisions to act on Monday. We have seen above that actual symptoms of anxiety extended into the weekend for many investors; in our samples of both individual and institutional investors the number of people who reported such symptoms over the weekend was roughly comparable to the number who sold on Monday. The percent showing anxiety over the weekend was even higher for those who sold on October 19: 23.2% of these individual investors and 30.6% of these institutional investors. And the symptoms of anxiety reported are rather pronounced; there are likely to have been many more people who thought quite seriously about the market without such symptoms.

In the PILOT2 questionnaire it was asked "Did you at any point over the weekend or on October 19 feel that prices were likely to fall dramatically soon?" Of those who answered, 39% said yes. Some of the respondents' comments are suggestive of such a weekend effect. One respondent who answered yes wrote: "Saturday was a day of soul searching to resist the absolute fear that Monday could have dealt. Do we sell out Monday or ride it out?" Of those who answered no, there was often as much anxiety over the weekend; they merely had a difference of opinion as to the likely direction of the market. One who answered no wrote "I thought the market would <u>rebound</u> on Monday!"

<u>Investors Thought Investor Psychology moved the Markets</u>

Investors were asked: "Can you remember any specific theory you had about the causes for the price declines October 14-19, 1987?"
The most common theme overall in the theories written in response to this question was the overpricing of the market before the crash. Among individual investors, 33.9% of the 342 who wrote theories mentioned this theme, among institutional investors, 32.6% of the 184 who wrote theories

mentioned this theme. Another important theme was an institutional - stop loss theme (identified by key words institutional selling, program trading, stop-loss, or computer trading): 22.8% individual, 33.1% institutional.[8] Also present was an investor irrationality theme (that investors were crazy or that the fall was due to investor panic or capricious change in opinion): 25.4% individual, 24.4% institutional.

The next question on the questionnaire was: "Which of the following better describes your theory about the declines: a theory about investor psychology, [or] a theory about fundamentals such as profits or interest rates?" Here, 67.5% (n = 530) of the INDIV sample of individual investors and 64.0% (n = 267) of the institutional investors said the theory was about investor psychology. This is in contrast to results obtained earlier (Pound and Shiller [1987]) with a random sample of institutional investors, where a very similar question referred not to the stock market on a day of a crash but to an individual stock the respondent held on a normal day. There, 79% of the random sample of institutional investors said that the theory that led them to hold the stock was a theory about fundamentals.

Unfortunately, the interpretation of the question is somewhat ambiguous, as respondents' written theories show. Many who said that the market was very much overpriced before the crash, and needed to come more in line with fundamentals, classified this as a theory about fundamentals. It

[8] The Barron's survey asked individual investors who they thought triggered the stock market crash. the results were institutional investors 56%, foreign investors 26%, and individual investors, 9%, Palmer [1987]. The dominance of institutional investors in the answers here does not seem to square with answers to open-ended questions I read, which often seemed to refer to other individual investors. Perhaps individual investors will say that institutional investors are extremely important when explicitly asked about institutonal investors, but at other times imagine that others like themselves are important.

is hard to think, however, that someone who thought that the market crash was due to bad news about the fundamental economic data would classify the theory as one about investor psychology. The bias would seem to be against investor psychology as an answer.

That so many investors think that market psychology is the reason for market movements is consistent with their holding stocks when they also thought they were overpriced.

Technical Analysis Played a Role

Investors were asked whether they were influenced by price dropping through a 200-day moving average or other long-term trend line. This trend line is an example of a technical indicator. About a third in both the individual INDIV and institutional INSTI samples answered yes (Table 4, question D).

In the PILOT2 questionnaire, respondents were asked "Was any technical factor on your mind in this connection on that day (channel, oscillator, support level, etc)? Of the 47 who answered, 17.0% said yes.

Since important news about fundamentals does not seem to appear on a daily basis, any day-to-day formal analysis of price movements is likely to focus on technical analysis, which uses price data as information. That is probably why daily reports in places like the "Heard on the Street" column of the Wall Street Journal report so many references to technical indicators, and why we can be confident technical analysis plays a role itself in market movements.

Portfolio Insurance is but the Tip of the Iceberg

Only 5.5% of those institutional investors who answered the questionnaire answered yes to the question "Do you follow an explicit portfolio insurance scheme?" A portfolio insurance scheme is a predetermined rule that investors may use to limit losses. The rule specifies trade in index futures that causes index futures contracts to be sold continually as stock prices go down, thereby hedging the portfolio against further losses. The rule follows a mathematical formula that has certain optimality properties.

Although the proportion who use explicit portfolio insurance is small, the proportion of institutional and individual investors who have a policy of limiting losses is around 10%, and among those who sold on October 19, close to 40% individual, close to 20% institutional (see Table 5, question A.). One can limit losses without an explicit portfolio insurance scheme by adopting buy or sell points, i. e., deciding in advance when to sell on either the cash or futures markets, by stop-loss orders or puts.

One common misconception about portfolio insurance is that, since it typically involves computers, it is importantly faster than other means of limiting losses. However, people can respond quite fast themselves relative to a day of market drops, without any computers (assuming that they can get in touch with their brokers and have their orders executed). Moreover, we have seen above that on October 19, they did indeed find out about record market movements in time to be a factor in these movements.

Studies of the September 11-12 1986 drop (SEC 1987) and of the January 23, 1987 drop (CFTC, 1987), as well as preliminary newspaper accounts (Cox, 1987) of a CFTC study of the October 19 drop, all conclude that portfolio insurance was not big enough in impact to account for much of the drop on those days. CFTC Commissioner Robert Davis was quoted as saying that "the activity was not exceptional, and didn't have much impact on the overall stock market." (Cox, 1987).

Since the behavior rule implicit in portfolio insurance is so well-defined as to be executable by a computer, it is readily analyzable by economists. We should avoid the temptation, however, to overemphasize the importance of behaviors that we know well relative to behaviors that are not precisely defined.

Changes in Investment Strategy

If the stock market crash was due to investors reacting to price drops themselves, then one might expect that they were more reactive at the time of the crash than at other times. That would then explain why the crash was so big on that day. I sought evidence whether this was so. I asked whether they had adopted their policy of holding losses to a certain amount shortly before the crash. Of those who had such a policy, 44.4% of the individual investors and 28.0% of the institutional investors said yes (Table 5, question B.) Those who said yes were asked when they adopted this policy: some put down years, but 46.4% of these individual investors and 50% of the institutional investors adopted the policy within a month of the crash.[9]

Respondents were also asked whether they had abandoned a policy of investing for the long term just before the crash: 13.2% of the individual investors and 6.6% of the institutional investors said yes (Table 5, Question C). Among those who sold October 19, the percentages were 38.5% individual and 27.8% institutional. One institutional respondent who said yes and who abandoned the policy on October 16 wrote "The 95 point drop is a sure indicator of much higher risk on the downside. As things turned out, it

[9] As a percent of total respondents, these are only 2.1% and 2.1% respectively, not a large percent.

was a precursor to the GREAT QUAKE on Monday." Another institutional investor who claimed the policy was abandoned October 19 wrote "The market was in a free fall and therefore unable to make proper investment decisions."

Respondents were also asked whether their response to the price declines would have been less intense if the declines had occurred six months ago (Table 5, Question D). I thought perhaps many would answer yes, indicating a heightened responsiveness of investors to market prices now, but most did not. Perhaps more would have answered yes if the question had not specified the "same news about price declines" but instead "a 30-point drop in the Dow." Perhaps the 508 point drop is so large that respondents feel they would react intensely to it at any time.

5. Interpretation and Conjectures

Something must have been different on October 19, 1987 that caused the behavior of the market to be very different from other days. What was different on that day? To answer that question, one must look for something that happened on exactly that day, not general considerations that characterize many days. Thus, for example, it is not enough to say that "portfolio insurance did it," since portfolio insurance has been around for years.

Sometimes big market movements are related to specific identifiable news breaks. However, the survey did not turn up anything really important to investors that became public on October 19 or over the weekend, other than the price decline itself and the behavior of investors reacting to it and previous declines. There is of course the possibility that a group of investors - missed or underweighted in the survey - was responsible for the stock market drop, and that these were responding to some important news event that the broader group of investors surveyed did not appreciate. The questionnaire was not directed to foreign investors, or to specialists, nor did the survey weight results by size of investor.

While no important news story appears to have broken right at the time of the stock market drop, we can identify news stories that preceded the drop by a number of days, and that were on investors' minds. Institutional investors were most concerned about the recent rise in interest rates and about Treasury Secretary James A. Baker's October 15 threat to push the dollar lower in response to increases in German interest rates. Both individual and institutional investors were confident that the market was overpriced, worried about program trading, and were concerned about the national debt and taxes. These concerns and worries certainly affected individual behavior on October 19, but do not explain the events of that day.

In interpreting the lack of an identifiable proximate cause for the drop, it should be borne in mind that there is a growing literature that calls into question the "efficient markets" theory that all price movements must be interpretable by information about economic fundamentals: (Shiller [1984], Campbell and Shiller [1987], DeBondt and Thaler [1985], Fama and French [1986], Mankiw, Romer and Shapiro [1986], Poterba and Summers [1987], West [1986], and others). Increasingly, there is statistical evidence that suggests the stock market may have a life of its own to some extent, unrelated to economic fundamentals.[10]

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[10] There are of course critics of this view as well. See for example Terry Marsh and Robert Merton [1987].

Since no news story or any other recognizable event from outside the market appears to be immediately responsible for the market crash, we will thus turn to consideration of a theory of the crash as being determined endogenously by investors: that the timing of the crash was related to some internal dynamics of investor thinking, investor reaction to price and investor reaction to each other. The survey results give us some information about investors that help us to think about these investor dynamics.

There were two channels by which price declines could feed back into further price declines. First, a price-to-price channel: investors on October 19 were reacting to price changes. Second, a social psychological channel: investors were directly reacting to each other.[11] From the information collected on the frequency with which investors checked prices and talked with each other on October 19, both feedback channels were operating fast enough among the broad masses of investors to play an important role in the hour-to-hour movements of the market: the communications proceeded rapidly, and prices were checked with great frequency. This was especially so among those investors who were net buyers or sellers on October 19.

The extent of communications as well as the amount of anxiety reported suggests that this event was not unlike other alarming national events that seize the public attention, and push aside much everyday activity for attention to the event. As such, the significance of the event should not be interpreted solely in terms of the quantitative measure of the amount of wealth lost in the market drop. The changes in individual perceptions are

[11] The fields of sociology and social psychology offer many insights into the latter of these two channels; see for example Adler and Adler [1984], Katona [1975], and McGuire [1969].

more fundamental and are likely to be lasting, even if the decline in wealth is reversed.

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. It would be wrong to think that the crash could be understood without reference to the expectations engendered by this historical comparison. In a sense many people were playing out an event again that they knew well.

Many investors thought that they could time the market. Technical analysis played an important role in their predictions, and thus in the decline in demand October 19. On the other hand, few investors, institutional or individual, volunteered any references to technical analysis in their answers to open-ended questions. They often wrote "gut feeling" as their forecasting method, and often seemed to say that they were guessing about the psychology of other investors. Investors appear to believe they have some internal sense of magnitude or direction for the market, and investors are highly divided on this sense of direction. Many investors thought that the sheer magnitude of the price drops on October 14-16 made it common sense that a rebound should come on Monday. At the same time, many other investors thought that the tremendous drops that came on those days raised issues that the market may be headed for a 1929-style crash. Most of those who held to either belief did nothing about it. Of the small number who did, the 'crash' theory holders happened to outnumber the 'rebound' theory holders.

The actual decision to buy or sell on October 19 seems to be only weakly related to interpretations of recent news events that investors rated as important: there was little difference between buyers and sellers on the importance rating that was given to news events. Respondents apparently did not have a clear theory how these past news events translated into predictions of market price movements on October 19, yet very many respondents still had predictions. It would thus be wrong to say, as many have done, that the market drop on October 19, 1987 ought to be interpreted as a statement of public opinion about some fundamental economic factor, e. g., that there is lack of confidence in the White House or Congress. At best, any such opinions probably played a role in the crash mainly as they affected the vague intuitive assessments people under great stress made about the tendency of prices to continue or reverse, or about how other investors will react to the current situation.

Table 1. Buyers vs. Sellers

A. Did you buy or sell either individual corporate stocks, index futures or stock options on that October 19, 1987?

	I bought (mostly)	I sold (mostly)	I did not buy or sell
INDIV: (n=549)	2.9% (0.7%)	2.3% (0.6%)	94.8% (0.9%)
INSTI: (n=277)	17.7% (2.3%)	13.4% (2.0%)	69.0% (2.8%)

B. What was the change in your holdings in 1987 of stocks (in terms of number of shares or contracts, not value) between each of the following dates (at close of market):

	Holdings Increased	No Change	Holdings Decreased
a. between September 12 and October 12			
INDIV: (n = 383)	18.0% (2.0%)	72.3% (2.3%)	9.7% (1.5%)
INSTI: (n = 262)	11.1% (1.9%)	44.3% (3.1%)	44.7% (3.1%)
b. between October 12 and October 19			
INDIV: (n = 383)	4.4% (1.0%)	85.6% (2.2%)	9.9% (1.5%)
INSTI: (n = 262)	7.6% (1.6%)	64.9% (2.9%)	27.5% (2.8%)
c. between October 19 and October 20			
INDIV: (n = 383)	4.7% (1.1%)	85.9% (1.8%)	9.4% (1.5%)
INSTI: (n = 262)	20.6% (2.5%)	66.7% (2.9%)	12.6% (2.1%)
d. between October 20 and later in week			
INDIV: (n = 383)	15.4% (1.8%)	76.7% (2.2%)	7.8% (1.4%)
INSTI: (n = 262)	33.6% (2.9%)	50.0% (3.1%)	16.4% (2.3%)

Note: Standard errors are shown in parentheses.

Table 2. Importance of News Items

A. Please tell us how important each of the following news items was to you personally on October 19, 1987 in your evaluation of stock market prospects. Please rate them on a one to seven scale, 1 indicating that the item was completely unimportant, 4 indicating that it was of moderate importance, 7 indicating that it was very important. Please tell how important <u>you</u> then felt these were, and not how others thought about them.

	Individual (INDIV)					Institutional (INSTI)				
	All	Buyers		Sellers		All	Buyers		Sellers	
		12-19	October 19	12-19	19		12-19	October 19	12-19	19
a. Drop in U. S. Stock Prices October 14-16 1987										
	4.54	5.29	5.12	5.13	5.38	5.23	4.85	5.18	5.77	5.83
	(0.07)	(0.35)	(0.41)	(0.29)	(0.46)	(0.09)	(0.45)	(0.22)	(0.15)	(0.21)
b. Drop in Japanese or London Stock Prices that preceded October 19, 1987										
	3.74	4.19	4.53	4.55	5.00	4.78	4.90	4.83	5.11	5.14
	(0.08)	(0.47)	(0.45)	(0.32)	(0.47)	(0.09)	(0.33)	(0.25)	(0.18)	(0.25)
c. The 200 point drop in the Dow the morning of Monday, October 19										
	5.14	5.69	5.76	5.32	6.54	5.93	6.05	5.86	6.24	6.08
	(0.08)	(0.36)	(0.39)	(0.30)	(0.26)	(0.08)	(0.23)	(0.19)	(0.13)	(0.21)
d. Trade deficit figures announced Wednesday October 14, 1987										
	4.21	3.94	4.24	4.50	4.62	4.21	4.40	4.14	4.75	4.39
	(0.08)	(0.43)	(0.33)	(0.30)	(0.46)	(0.09)	(0.33)	(0.24)	(0.19)	(0.28)
e. Producer Price Index figures announced Friday October 16, 1987										
	3.26	3.13	3.47	3.13	3.23	3.17	3.00	3.22	3.38	3.03
	(0.07)	(0.32)	(0.43)	(0.28)	(0.45)	(0.08)	(0.32)	(0.21)	(0.18)	(0.24)
f. Prechter's short-run sell signal the morning of Wednesday October 14										
	2.17	2.07	3.00	2.49	2.45	2.59	2.80	2.37	3.10	2.94
	(0.07)	(0.34)	(0.43)	(0.29)	(0.53)	(0.10)	(0.35)	(0.22)	(0.18)	(0.21)

g. Chemical Bank raising prime rate Thursday October 15

4.14	4.18	4.00	4.58	4.77	3.95	4.25	3.82	4.51	4.28
(0.08)	(0.48)	(0.41)	(0.28)	(0.44)	(0.10)	(0.36)	(0.22)	(0.18)	(0.25)

h. Treasury bond yields hit 10.5%

4.27	4.56	4.41	4.46	4.46	5.57	5.85	5.84	6.01	5.64
(0.08)	(0.49)	(0.42)	(0.34)	(0.47)	(0.08)	(0.22)	(0.16)	(0.15)	(0.25)

i. Baker suggested that the dollar should slip further

4.04	4.50	4.05	4.11	5.31	4.84	4.45	4.67	5.41	5.39
(0.08)	(0.49)	(0.46)	(0.32)	(0.51)	(0.10)	(0.33)	(0.25)	(0.20)	(0.25)

j. U. S. attack on Iranian oil station Monday, October 19, 1987

3.73	3.13	3.53	3.70	3.46	3.32	3.30	2.96	3.61	3.28
(0.08)	(0.49)	(0.39)	(0.31)	(0.39)	(0.10)	(0.33)	(0.25)	(0.20)	(0.25)

k. Other (fill in)

____

____

B. Suppose that as of October 19, 1987 the same news had occurred except for the news of price drops. Would your evaluation of the market or decisions to buy or sell on October 19 have been substantially different?

18.3%	12.5%	37.5%	29.7%	53.9%	34.0%	40.0%	48.0%	39.1%	40.0%
(1.6%)	(8.3%)	(12.1%)	(7.5%)	(13.8%)	(2.9%)	(10.9%)	(7.2%)	(5.9%)	(8.2%)

Note: Standard errors are in parentheses. For question B, percents give yes answers relative to those answering question.

Table 3. Investor Anxieties

	Individual (INDIV)					Institutional (INSTI)				
	All	Buyers		Sellers		All	Buyers		Sellers	
		October 12-19	19	12-19	19		October 12-19	19	12-19	19
A. On which of the following dates did you experience any unusual symptoms of anxiety (difficulty concentrating, sweaty palms, tightness in chest, irritability, or rapid pulse.) regarding the stock market?										
Wednesday-Friday October 14-16, 1987:	3.7%	5.9%	12.5%	13.0%	7.7%	13.1%	5.0%	12.5%	23.6%	22.2%
	(0.8%)	(5.7%)	(8.3%)	(7.4%)	(7.4%)	(2.0%)	(4.8%)	(4.8%)	(5.0%)	(6.9%)
The weekend October 17-18:	3.3%	5.9%	12.5%	0%	23.2%	15.0%	5.0%	14.6%	31.9%	30.6%
	(0.7%)	(5.7%)	(8.3%)	-	(11.7%)	(2.2%)	(4.8%)	(5.1%)	(5.5%)	(7.7%)
Monday, October 19, 1987:	20.3%	17.6%	18.8%	31.6%	30.8%	43.1%	30.0%	45.8%	51.4%	44.4%
	(1.7%)	(9.2%)	(9.8%)	(7.5%)	(12.8%)	(3.0%)	(10.2%)	(7.2%)	(5.9%)	(8.3%)
Tuesday, October 20, 1987	12.3%	5.9%	18.8%	23.7%	30.8%	30.3%	25.0%	37.5%	37.5%	27.8%
	(1.4%)	(5.7%)	(9.8%)	(6.9%)	(12.8%)	(2.8%)	(9.7%)	(7.0%)	(5.7%)	(7.5%)
Wednesday-Friday October 21-3	7.0%	5.9%	12.5%	13.2%	7.7%	29.2%	25.0%	39.5%	34.7%	30.6%
	(1.1%)	(5.7%)	(9.8%)	(5.5%)	(7.4%)	(2.8%)	(9.7%)	(7.1%)	(5.6%)	(7.7%)
B. Do you think you may have personally experienced contagion of fear from other people on October 14-19?	23.0%	31.3%	35.2%	31.6%	53.9%	40.2%	42.1%	44.9%	47.1%	45.7%
	(7.7%)	(11.6%)	(11.9%)	(7.5%)	(13.8%)	(3.0%)	(11.3%)	(7.1%)	(6.1%)	(8.4%)
C. Do you remember thinking or talking about events of 1929 on the few days <u>before</u> October 19, 1987?	35.0%	17.6%	31.3%	42.1%	46.2%	53.2%	55.0%	61.2%	54.0%	63.9%
	(2.0%)	(9.2%)	(11.6%)	(8.0%)	(13.8%)	(3.0%)	(11.1%)	(7.1%)	(5.9%)	(8.0%)

Note: Figures are percent of respondents selecting the item or answering yes from the respondents who answered the question. Standard errors are in Parentheses.

Table 4. Investor Outlook

Individual (INDIV)					Institutional (INSTI)				
All	Buyers		Sellers		All	Buyers		Sellers	
	October 12-19	19	12-19	19		October 12-19	19	12-19	19

A. Did you think at any point on October 19, 1987 that you had a pretty good idea when a rebound was to occur?

29.2%	23.5%	47.1%	31.6%	46.1%	28.0%	25.0%	47.9%	28.2%	16.7%
(1.9%)	(10.3%)	(12.1%)	(7.5%)	(13.8%)	(2.7%)	(9.7%)	(7.2%)	(5.3%)	(6.2%)

B. Did you have a sense just before the crash (around OCtober 12, 1987) that the market was overpriced relative to fundamental value? (Try hard to remember what you thought then.)

71.7%	76.5%	88.9%	62.2%	91.0%	84.3%	89.5%	87.0%	85.7%	88.5%
(2.2%)	(10.2%)	(10.5%)	(8.0%)	(8.7%)	(2.2%)	(7.0%)	(5.0%)	(4.8%)	(5.4%)

C. Do you think you were bullish and optimistic, relative to other investors, on October 12 (before the beginnings of the crash)?

36.1%	23.5%	55.6%	54.0%	60.0%	22.2%	25.0%	22.2%	20.3%	20.0%
(2.4%)	(10.3%)	(16.5%)	(8.2%)	(15.4%)	(2.6%)	(9.7%)	(6.9%)	(4.8%)	(6.8%)

D. Was your thinking on October 19 influenced by the stock market dropping through a 200-day moving average or similar long-term trend line?

37.3%	43.8%	43.8%	52.8%	58.3%	33.2%	30.0%	34.7%	49.3%	37.1%
(2.0%)	(12.4%)	(12.4%)	(8.3%)	(14.2%)	(2.8%)	(10.2%)	(6.7%)	(6.0%)	(8.2%)

Note: Figures are percent of respondents answering yes from the respondents who answered the question. Standard errors are in Parentheses.

Table 5. Investor Policies

Individual (INDIV)					Institutional (INSTI)				
All	Buyers		Sellers		All	Buyers		Sellers	
	October 12-19	October 19	October 12-19	19		October 12-19	October 19	October 12-19	19
A. Did you have, as of October 19, 1987, a policy of holding losses to a certain amount (by deciding in advance to sell at a certain point, by stop-loss orders, buying puts, or other forms of portfolio insurance)?									
10.1%	6.3%	17.7%	31.6%	38.5%	10.2%	5.3%	16.3%	18.3%	18.9%
(1.3%)	(6.1%)	(9.2%)	(7.5%)	(13.4%)	(1.8%)	(5.1%)	(5.3%)	(4.6%)	(6.4%)
B. If yes, had you adopted this policy shortly before or on October 19?									
44.4%	---	---	69.2%	50.0%	28.0%	0	10.0%	40.9%	50.0%
(6.3%)	---	---	(12.7%)	(20.4%)	(6.3%)	---	(9.4%)	(10.5%)	(13.3%)
C. Did you abandon a policy of investing for the long term (value investing, contrarian investing or the like) shortly before or on October 19?									
13.2%	12.5%	24.6%	27.0%	38.5%	6.6%	0	4.3%	19.4%	27.8%
(1.5%)	(8.2%)	(10.3%)	(7.3%)	(13.5%)	(1.6%)	---	(2.9%)	(4.7%)	(7.4%)
D. Try to imagine that you heard exactly the same news about price declines that you heard October 19, without the other news, on a Monday six months ago. Would your reaction have been less intense?									
19.9%	11.8%	12.5%	26.3%	23.1%	22.2%	20.0%	22.5%	23.1%	29.4%
(1.6%)	(7.8%)	(8.3%)	(7.5%)	(11.6%)	(2.5%)	(8.9%)	(7.2%)	(5.1%)	(7.6%)

Note: Figures are percent of respondents answering yes from the respondents who answered the question. Standard errors are in Parentheses.

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Appendix

A. Sources of Mailing Lists

PILOT1, PILOT2 (High Income Individuals, n = 125 each)

Survey Sampling, Inc., random sample of high-income investors in the continental U. S. whose income predicted by a regression was $70,000 a year or more. This is a list of high income individuals, not investors. In a previous survey (Shiller and Pound, 1986) using this list we achieved (by repeated followup mailings urging prompt response) a response rate of 59%. Of those who responded, we asked "Have you, or someone in your household, ever bought shares of common stock (not preferred stock) in a corporation?" Of those who answered, 55% answered yes. The PILOT1 and PILOT2 lists were drawn from those respondents who answered yes to this question.

INDIV (Individual Investors, n = 2000)

W. S. Ponton, (5149 Butler St., The Ponton Bldg., Pittsburgh PA. 15201) "High-Grade Multi-Investors" with a random selection from the entire United States. This list is described in the Ponton Investor List Catalog Vol. VIII by "names on three (3) or more lists - net worth of generally over $250,000.00," (p. 4). Harvey A. Rabinowitz (president of W. S. Ponton) explained to me that they maintain many mailing list of investors. The high-grade multi investor list consists of people who are on three or more of their lists that are suggestive of high-income, active investors. Most lists described in their catalog are used. Sources of lists include "Clippings from almost every daily, weekly and religious newspaper in the United States, legal journals, business directories & magazines, public court house records, replies to space ads in all types of business & investment publications, investment seminar attendees, trade-offs with stock brokerage firms & business/financial & investment publications, a few corporate stockholder lists, purchase of lists from some investment firms that are no longer in business, & many private & personal sources," (Investor List Catalog, p. 23). However, Rabinowitz said there was no use made of some of their more unusual lists (their lists of gamblers, cattle or new movie investors). Rabinowitz thought that the high grade multi-investor list should resemble a random sample of all high -income active investors.

INSTI (Institutional Investors, n = 1000)

"Investment Managers, Alphabetical Index." from the Money Market Director of Pension Funds and their Investment Managers 1987, T. H. Fitzgerald, Ed., Mcgraw Hill. Categories in list are "Investment Counsel Firms, U. S. Bank and Trust Companies, U. S. Insurance Companies, and Independent Real Estate Advisors." The names were selected randomly from this, without regard to kind of firm or position within the firm.

B.Questionnaires

The exact INDIV questionnaire follows, starting next page, with the addition only of two or four numbers [in square brackets] after each question: the numbers are the average answer for individual investors, the number answering, the average answer for institutional investors, the number answering. When only two numbers are shown, they refer to individual investors.

The INSTI questionnaire is virtually the same, with the following difference:

Survey For Investment Professionals
Concerning Stock Market Drop October 19, 1987.

[after instructions:] Questions about purchases and sales concern accounts over which you have discretion or about your own personal account.

24. Were you involved October 19 in arbitraging the index futures and spot markets?

[CIRCLE ONE NUMBER]

YES	NO
1	2

[Inst: 1.982, 273]

25. Do you follow an explicit portfolio insurance scheme?

[CIRCLE ONE NUMBER]

YES	NO
1	2

[Inst: 1.945, 272]

Survey Concerning Stock Market Drop October 19, 1987.

THIS QUESTIONNAIRE SHOULD TAKE NO MORE THAN TEN MINUTES OF YOUR TIME IF YOU SKIP THE OPTIONAL ESSAY QUESTIONS

Instructions. From Wednesday October 14, 1987 to Monday, October 19, 1987 the stock market fell more than ever before in history. The Dow Jones Industrial Average fell 95 points on Wednesday October 14, 58 points on Thursday October 15, 108 points on Friday Oct 16 and 508 points on Monday, October 19. (At this writing further prices are not available.) Could you please help us to try to understand what happened by telling us about your own personal experiences then? Please give answers by circling numbers, as this questionnaire will be computer coded. You may also elaborate with margin comments on any question. We want your stories as they will help us to interpret your answers. Please be candid; the survey is anonymous. Please finish what you can of this survey, even if you cannot answer all questions. This is a not-for-profit survey done for the purpose of basic research on economic behavior.

1. Have you been aware of the stock market drops noted above?

[CIRCLE ONE NUMBER]

YES	NO	
1	2	[1.011,596]

If you circled 2 (you did not know about the market declines) you have completed this questionnaire. Please return the questionnaire in the enclosed envelope.

2. When did you first hear that there were above-average stock market drops on October 19, 1987?

Date (October 19 or later) __________ [19.049,584,19,280]

Approximate time of day __________ [13.926EDT,346, 10.533EDT,179]

3. Roughly how many people did you talk to about the stock market on October 19, 1987?

Number of people ___________ [7.438,554,19.681,274]

4. How many times did you check stock prices on October 19, 1987?

Number of times___________ [3.205, 554, 34.965, 204]

COMMENTS:

5. Did you buy or sell either individual corporate stocks, index futures or stock options on that October 19, 1987?

[CIRCLE ONE NUMBER]

I bought (mostly)	I sold (mostly)	I did not buy or sell
1	2	3

[2.918,579,2.512,277]

6. Did you have, as of October 19, 1987, a policy of holding losses to a certain amount (by deciding in advance to sell at a certain point, by stop-loss orders, buying puts, or other forms of portfolio insurance)?

[CIRCLE ONE NUMBER]

YES	NO
1	2

[1.899,565,1.898,275]

7. If yes, had you adopted this policy shortly before or on October 19?

[CIRCLE ONE NUMBER]

YES	NO
1	2

[1.556,63,1.720,50]

8. If yes, could you give the time you adopted the policy and the reason? (optional)

date:______________Nature of change:____________________________
[517.5 days before October 19th, 28, 185.0 days, 12]

____

9. Did you abandon a policy of investing for the long term (value investing, contrarian investing or the like) shortly before or on October 19?

[CIRCLE ONE NUMBER]

YES	NO
1	2

[1.868,540,1.935,275]

10. If yes, could you describe the date you made the change in policy and the reason for the change? (optional)

date:______________Nature of change:____________________________
[216.9 days before 19th, 63, 29.2 days, 21]

____

11. Please tell us how important each of the following news items was to you personally on October 19, 1987 in your evaluation of stock market prospects. Please rate them on a one to seven scale, 1 indicating that the item was completely unimportant, 4 indicating that it was of moderate importance, 7 indicating that it was very important. Please tell how important <u>you</u> then felt these were, and not how others thought about them.

[CIRCLE ONE NUMBER FOR EACH]

	completely unimportant			Moderately important			very impor-tant
a. Drop in U. S. Stock Prices October 14-16 1987	1	2	3	4	5	6	7
		[4.453, 577, 5.235, 277]					
b. Drop in Japanese or London Stock Prices that preceded October 19, 1987	1	2	3	4	5	6	7
		[3.742, 575, 4.776, 277]					
c. The 200 point drop in the Dow the morning of Monday, October 19	1	2	3	4	5	6	7
		[5.141, 566, 5.927, 277]					
d. Trade deficit figures announced Wednesday October 14, 1987	1	2	3	4	5	6	7
		[4.209, 573, 4.211, 279]					
e. Producer Price Index figures announced Friday October 16, 1987	1	2	3	4	5	6	7
		[3.264, 565, 3.170, 276]					
f. Pretcher's short-run sell signal the morning of Wednesday October 14	1	2	3	4	5	6	7
		[2.175, 521, 2.591, 274]					
g. Chemical Bank raising prime rate Thursday October 15	1	2	3	4	5	6	7
		[4.137, 568, 3.949, 277]					
h. Treasury bond yields hit 10.5%	1	2	3	4	5	6	7
		[4.275, 561, 5.571, 278]					
i. Baker suggested that the dollar should slip further	1	2	3	4	5	6	7
		[4.041, 558, 4.835, 280]					
j. U. S. attack on Iranian oil station Monday, October 19, 1987	1	2	3	4	5	6	7
		[3.729, 572, 3.317, 278]					
k. Other (fill in) ____________ ____________	1	2	3	4	5	6	7

Comments:

12. Suppose that as of October 19, 1987 the same news had occurred except for the news of price drops. Would your evaluation of the market or decisions to buy or sell on October 19 have been substantially different?

[CIRCLE ONE NUMBER]
YES NO

1 2
[1.817, 553, 1.661, 274]

13. Try to imagine that you heard exactly the same news about price declines that you heard October 19, without the other news, on a Monday six months ago. Would your reaction have been less intense?

[CIRCLE ONE NUMBER]
YES NO

1 2
[1.821, 554, 1.777, 274]

14. If yes, please try to describe how and why your reaction would have been different. (optional)

____

____

15. Was your thinking on October 19 influenced by the stock market dropping through a 200-day moving average or similar long-term trend line?

[CIRCLE ONE NUMBER]
YES NO

1 2
[1.627, 541, 1.668, 274]

16. Were you forced to sell on margin call on October 19, 1987?

[CIRCLE ONE NUMBER]
YES NO

1 2
[1.991, 560, 1.989, 278]

COMMENTS:

17. Do you think you may have personally experienced contagion of fear from other people on October 14-19?

[CIRCLE ONE NUMBER]

YES	NO
1	2

[1.770, 579, 1.597, 271]

18. Do you remember thinking or talking about events of 1929 on the few days <u>before</u> October 19, 1987?

[CIRCLE ONE NUMBER]

YES	NO
1	2

[1.650, 578, 1.467, 280]

19. Can you remember any specific theory you had about the causes for the price declines October 14-19 1987? (optional)

Theory: ____

____

____

20. Which of the following better describes your theory about the declines:

[CIRCLE ONE NUMBER]

1 A theory about investor psychology.

2 A theory about fundamentals such as profits or interest rates.

[1.324, 530, 1.360, 267]

21. Did you think at any point on October 19, 1987 that you had a pretty good idea when a rebound was to occur?

[CIRCLE ONE NUMBER]

YES	NO
1	2

[1.708, 576, 1.720, 279]

22. If yes, what made you think that you knew when a rebound would occur? (optional)

____

____

COMMENTS:

23. On which of the following dates did you experience any unusual symptoms of anxiety (difficulty concentrating, sweaty palms, tightness in chest, irritability, or rapid pulse.) regarding the stock market?

[CIRCLE NUMBERS FOR DATES OF ANXIETY]

Wednesday-Friday October 14-16, 1987	1 [.037,571,.131,274]
The weekend October 17-18	2 [.033,571,.150,274]
Monday, October 19, 1987	3 [.203,571,.431,274]
Tuesday, October 20, 1987	4 [.123,571,.303,274]
Wednesday-Friday October 21-3	5 [.070,571,.292,274]

24. What is your age? [55.03,570] Sex: M[91.6%,570] F________

Number of dependents? [1.558,570] Approximate annual income [136.7k,501]

25. Are you retired?

[CIRCLE ONE NUMBER]

YES NO

1 2

[1.708,562]

26. What was the change in your holdings in 1987 of stocks (in terms of number of shares or contracts, not value) between each of the following dates (at close of market):

[CIRCLE ONE NUMBER FOR EACH]

	Holdings Increased	No Change	Holdings Decreased
a. between September 12 and October 12	1	2	3[1.916,383]
b. between October 12 and October 19	1	2	3[2.054,383]
c. between October 19 and October 20	1	2	3[2.046,383]
d. between October 20 and later in week	1	2	3[1.924,383]

27. How many times a year do you normally trade? Number:__________
[9.792,357,283.8,155]

28. Do you think you were bullish and optimistic, relative to other investors, on October 12 (before the beginnings of the crash)?

[CIRCLE ONE NUMBER]

YES NO

1 2

[1.639,396,1.778,266]

29. Did you have a sense just before the crash (around October 12, 1987) that the market was overpriced relative to fundamental value? (Try hard to remember what you thought then.)

[CIRCLE ONE NUMBER]

YES NO

1 2 [1.283,403,1.157,267]

Comments:

Thank you very much.