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Stock Market Panics: A Test of the Efficient Market Hypothesis

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Stock Market Panics: A Test of the Efficient Market Hypothesis

SINCE THE PUBLICATION of Cootner's collection of papers on *The Random Character of Stock Market Prices* and Fama's article on "Efficient Capital Markets," the fashion for persons in the academic world has been to assume that changes in stock prices are nearly, if not quite perfectly, random and that the market for equity capital is fairly efficient.[1]

Although short-run changes in stock prices are very higgledy-piggledy, there is some evidence of patterns in longer-run changes.[2] Data published by the National Bureau of Economic Research in 1961 showed that common stocks were excelled as a leading indicator of business cycles only by the net change in the number of operating businesses. Stock prices were classified as being a leading indicator 31 times, roughly coincident 14 times, and a lagging indicator only five times.[3] Those farsighted investors who purchased common stocks at the beginning of calendar years containing a business trough and held them through intervening years of continued business expansion could have obtained an average annual nominal return of more than 15 per cent from 1871 to 1961. This compares with an average net financial loss in those years containing either a peak in business activity or an intervening decline in business activity.[4]

The stock market's propensity to be a leading indicator makes it rather difficult to find other variables that are useful in helping to forecast prices. This difficulty has encouraged some analysts to try to find clues to future prices by examining the market's own past behavior. While market peaks are not easy to identify using standard statistical techniques, some evidence suggests that major bear markets occasionally end in a state of panic selling.

1. Footnotes appear at end of article.

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Long-Run Patterns in Market Behavior

One of the keys to better identification of selling climaxes is to ignore small price changes.[5] When small changes in the range of 5 to 7 per cent are screened out from the annual and quarterly price changes for the S & P 400, one obtains evidence that supports a longer-run price structure that is not very consistent with the random walk hypothesis.

This structure implies a mechanical trading rule: Get out of the market after two 5 per cent or more annual gains in a row and get back into the market after either one annual loss amounting to at least 5 per cent or after a quarterly decline of 7 per cent or more, whichever comes first. An investor who followed this rule would have obtained an average price gain of 48.8 per cent during seven holding periods from 1953 to 1981 and avoided an average price loss of 13.4 per cent during seven sell periods.[6]

Table I provides some additional evidence in support of the hypothesis that the run structure for large price changes will sometimes be appreciably different from the run structure for all price changes. Column 2 presents the distribution for all monthly declines from 1928 to 1981 in the S & P 400 according to the length of run and is to be contrasted with Column 5, which shows the run distribution for monthly declines of 4 per cent or more that were unbroken by monthly rallies of 4 per cent or more. Average realized price changes in the following month and after the next 4 per cent price change are presented in Columns 3 and 6.

Both distributions are consistent in indicating that it has not paid, on the average, to invest in the stock market after one or two monthly declines in a row. Net price appreciation can, however, be expected after three or more monthly declines in a row. Furthermore, the amount of expected price appreciation is much more striking for the screened price changes involving only changes of 4 per cent or more

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