THE EFFICIENT MARKETS HYPOTHESIS: MYTH OR REALITY?

by George Floyd

INTRODUCTION

Market efficiency is the cornerstone around which so much investment theory relies upon for its validity. If stock markets are perfectly efficient, then both technical and fundamental analyses are a waste of effort. The market cannot be beaten. The only sensible strategy to adopt is a buy-and-hold one.

Efficiency, however, is not a black and white issue. Different levels of efficiency can be tested. Empirical evidence must be the key criteria by which market related theories are judged.

There exists a wide level of agreement that markets are not efficient in the strong form. Finnerty(1976) showed that investors who had access to inside information were able to earn supernormal profits. This finding concurs with most of the other research in this area. A large degree of consensus exists - at least in academic circles - that the market is efficient in the weak form. The random walk explanation of share price movements has enough empirical evidence supporting it to convince all but the most diehard believers in technical analysis.

THE DEBATE OVER EFFICIENCY

The main area of contention as regards efficiency relates to whether the market is semi-strong efficient. The semi-strong form implies that a stock is always priced at its "intrinsic" value. The price reflects perfectly at all times all publicly available information. Prices are supposed to react instantaneously to any new information received so that it is impossible for investors to make profits by spotting a "wrongly priced" share and investing in it.

There are, however, different degrees of efficiency within the semi-strong level, as outlined by Keane(1983). Perfect efficiency at semi-strong level pertains when prices are so close to their semi-strong worth that not even the most expert information processor has the ability to earn an excess return for his efforts. Near efficiency pertains when prices are sufficiently close to their semi-strong worth so as to make it futile for all investors, except for the expert minority, to pursue an active trading policy as opposed to adopting the passive buy-and-hold approach. It is also

a necessary condition at this level that the expert earns only sufficient returns to cover his transaction costs and reward him for his time and effort expended. Inefficiency at the semi-strong level is described as occurring when there is a possibility for even the non-expert (the ordinary investor) being able to perceive mispriced securities, or at least, if the non-expert is able to profit from the recommendations of the expert who observes them. Ability to profit from tipsters advice is a case in point.

So if the market is efficient at the semi-strong level, what then would be the point of engaging in fundamental analysis? Perhaps if such activities were abandoned market efficiency would collapse and cease to exist anymore. This hypothesis will be examined in more detail below. What is clear, however, is that the need by information processors to have an incentive to carry out their work places the burden of proof for the existence of efficient market theory back in the camp of its advocates.

Evidence Supporting the EMH

As noted above, empirical evidence is the key to proving or disproving the theory of market efficiency. It was only with the emergence of computers and improved statistical methods that such empirical study became possible. Fama (1970) was a pioneer of such studies and his findings have served as the building blocks for later research. Therefore it is logical to begin by outlining the results of Fama's research.

It is important to remember that each individual test was concerned with the adjustment of security prices to just one kind of information-generating event. However, taken together, the results have provided consistent support for the concept of semi-strong efficiency.

Firstly, stock splits [1] were considered by FFJR [Fama, Fisher, Jensen, Roll] (1969). They assumed that splits were often associated with the appearance of more fundamentally important information, such as earnings announcements, so caution had to be taken with the interpretation of the results. Nevertheless, a split was a sign of management confidence about future earnings and was a signal of future dividend increases. FFJR were interested in measuring any "unusual" behaviour around the time of the split. FFJR's findings supported the concept of market efficiency, at least with respect to the ability of the market to absorb the information implicit in the split.

Ball and Brown (1968) studied public announcements by companies over the period 1946-66. They concluded that no more than 10-15% of the annual earnings announcement had not been anticipated by the month of the announcement. Waud (1970), in a survey, concluded that on a macro level, if anything, the market anticipates public announcements. Most information is incorporated into the share price by the time earnings are announced, indicating that the market is a good

forecaster of earnings, or at least makes effective use of other sources of information. Presumably the market must progressively revise its estimates of a company's prospects in response to the multiple sources of information throughout the 12 months between earnings announcements.

Studies by Firth in the UK, Johnson in Canada, FFJR in the USA have all shown that no profitable trading results could be achieved upon the announcement of a capitalisation issue and that the market adjusted share prices instantaneously and accurately to new information. Pettit and Watts found that all price adjustment was over immediately after the announcement and that the market had acted efficiently in evaluating the information.

The announcement of the build up of large investment holdings in a firm has been studied. It has been shown that share prices rose significantly prior to the announcement. This may be put down to leakage of information and/or strong pre-announcement buying by the investors building up their stakes. Upon announcement a large rise occurred in the price of the share. After ten days the residuals settled down to their normal relationship to the market index. The behaviour of prices after the announcement itself was made is fairly rational and "efficient" in the semi-strong sense although the pre-announcement movements may be more problematic to explain in terms of efficiency.

The effects of earnings announcements by similar type companies was examined by Firth who found that the reaction to such information was in the direction expected, although it was impossible to say whether the magnitude was correct. The findings showed again that the market used the relevant information to establish share prices - this in turn supports the efficient markets hypothesis.

Rational for the Continued Existence of Analysis

In spite of the evidence, why does the small investor so frequently lead himself or herself to believe that the market is inefficient and that the possibility of earning excess returns exists? Several possible explanations have been cited. One such explanation is the "information gap" thesis. According to this theory an individual has gaps in his own information set. Accordingly from his subjective viewpoint the price of the share in question appears to be incorrect.

Biased reporting is also cited as an explanation. In this analysis, successful recommendations and investment selections are more widely reported by portfolio managers and by the financial press than are failed strategies. Similarly, the psychological effects of knowing someone who has apparently beaten the market will attract others to believe that they too can emulate such achievements. The validity of these stories of out-performance are usually not subjected to any objective testing. Furthermore, in hindsight many investors are able to reflect upon opportunities which, had they picked the right shares at the right time had the potential to make them very rich. The potential for making huge profits in this

manner has been highlighted in research by Niederhoffer and Regan(1972). The problem is that it proves impossible to identify these shares in advance as the information needed to pick these "under-valued" companies has not yet become available to investors.

Investors often fall prey to confusion about what constitutes excess returns. This is illustrated by the fact that the performance of high Beta shares [2] has often been confused with out-performing the market during bullish periods of the market cycle. However, in bearish periods the converse is true, with conservative portfolios of low risk shares performing best in the market, whilst over the longer term high Beta portfolios perform in accordance with the implications of the efficient markets hypothesis. So called, 'outperformance' of the market by high Beta shares can be explained away as being the necessary extra reward for the additional risk taken on by investors.

Alternative Techniques Proposed to Beat the Market

Evaluating attempts to find a formula to beat the market are a good means of assessing the strength of market efficiency. The price:earnings (P/E) ratio has been used as such a tool. It has been asserted that portfolios composed of low P/E shares persistently out-perform other portfolios, even after adjustment for differential risk levels. However the validity of these claims seems to be undermined when the small firm bias of the survey is eliminated and when the tax effect on stock returns was adjusted for. However once the small firm bias of the survey is removed and the tax effect on different categories of dividend is adjusted for these claims are undermined(as fiscal factors may be a key variable influencing a firm's dividend policies).

Inflation accounting as a predictive tool has been suggested by Thomson(1981) He argued that the impact of current cost information would differentiate companies in times of high inflation. But, the inability of an investor to accurately predict future inflation levels suggests that the theory has very limited use. Only if someone could consistently produce a better estimate of inflation than everyone else could the market be deemed inefficient.

Some of the pro-efficiency surveys themselves have come in for criticism however. Schwart has criticised Fama's results on the grounds that no mention was made of the dispersal of information. Relatively early receipt of information would give the receipient trader a transitory monopoly on the information received and would allow him to act before the rest of the market had access to the information. If this were to occur on a regular basis it would suggest that some traders have superior access to information (which would give them a market advantage). Presumably this could not be reconciled with the concept of semi-strong efficiency as expounded by Fama.

These arguments notwithstanding, the main bulk of the evidence seems to suggest that semi-strong form efficiency holds. Jensen (1968) monitored the performance of 115 mutual funds during the period 1945-64. He found that on average the funds were unable to out-perform the passive buy-and-hold strategy. One writer, rather ironically, has gone as far as to suggest that the market must be inefficient on the grounds that if the market were efficient, then portfolio managers should, on average, perform no worse than the market average.

It would seem that the best option for institutions would be to attempt to duplicate the market portfolio. They have the size and resources to purchase the necessary breadth of stocks at relatively low transactions costs and would no longer need to revise as frequently the portfolio as the relative risk of shares change in response to the release of new information. Research costs would be virtually zero - a major advantage over conventional funds. Some funds are actually now doing this. For example, the American National Bank's Index Fund estimate that their trading costs are less than 0.02% as compared to 1.5 to 3% for the conventional portfolio.

All of the above does not of course prove that the market is efficient. The problems of researching the market are such that it is near impossible to relate the price movements of individual securities with specific events or information data. Primarily it is the consistency of the evidence rather than its sheer volume of which has done so much to establish the credibility of semi-strong market efficiency.

LESSONS FROM HISTORY: 1987 AND 1929

Events such as the Stock Market Crash of 1987, however, have done much to undermine the faith of many investors in market efficiency. But the crash should not necessarily be taken as watertight evidence of irrationality in the valuation of shares. It is far from inconceivable that the specific changes in the "fundamentals" might produce a fall of 20% in the value of shares, although if you take the view of shares value being a short-term stream of income flows it would need to be associated with some major catastrophe or a declaration of war. However, you may regard shares value as being best characterised by cash flows projected far into the distant and highly uncertain future, which is then discounted back with the appropriate adjustment for risk. Because the relevant valuation formulas are so highly non-linear, even a small revision in the risk adjusted discount rates or estimated growth rates for future cash flows can sometimes produce large changes in what seemed to be the warranted values for shares.

Miller (1991) suggests that the signs which made investors fearful in 1987 were of enough importance to trigger these fairly massive re-evaluations. He lists the combination of the weakness of the Reagan administration in dealing with the budget deficit, important new tax penalties being proposed on corporate takeovers, shooting incidents in the Persian Gulf (with the possibility of long-term higher

energy prices) and the probability that Western nations may have been drawn into that conflict as being the key factors. Due to the combined effect of these factors, none of which would have been sufficient on their own to have caused consternation, it is very conceivable that investors would seek to reappraise their views about the prospects of long-term growth in the economy and the future of their dividend streams.

In similar fashion, the Crash of 1929 has been paraded as an example of how the market was inefficient. But the evidence on which this analysis is based becomes more and more tenuous as time goes by. The main cause of the 1930s depression was the unwillingness of the Federal Reserve to respond to the massive increase in the demand by the public for real balances, as well as the collapse of the US banking system. Very little of this was related to credits given to individuals or brokerage houses. The largest falls in stock prices did not occur until 1932 in any case and these were due to the mishandling of the economy by the Federal Reserve.

Still the view persists that the market is a ticking time bomb waiting to explode if not kept bound up in regulations. The failure of efficient market proponents to get the message across, in both instances,that the market was merely responding efficiently to information as it became available, has perhaps been one of their greatest failings.

Conclusion.

Having seen that all the evidence points in favour of market efficiency at the semi-strong level there exists a paradox. Would efficiency cease to be true for the market if everyone believed in efficiency and ceased their quest for mis-priced securities? The point is, however, that the market does not have to be perfectly efficient. Near efficiency is enough to ensure that the vast majority of investors adopt a passive strategy. The paradox may be better stated as being that the market is incapable of being perfectly efficient unless some experts disbelieve it to be so. Every revolution gives rise to counter-revolutions. The efficient markets revolution is no exception. Methods of research are constantly improving and it is possible that someday the EMH may be superseded. However as things stand at the moment it appears that the semi-strong EMH best characterises the nature of the present stock market.

Notes

1. Stock Split - a device by which company's increase the number of shares in issue by subdividing the stock already outstanding.

2. Beta - a measure of how the return of a security is correlated with the turn of the market. High Beta shares move proportionately more than the market does.

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