

Stock Market Perspective: (Non-) Efficient Market Hypothesis

Of course it is called *the efficient market hypothesis* or sometimes *random-walk theory*. The earliest widely read exposition was in Burton Malkiel's 1973 book *A Random Walk Down Wall Street*, which has had several updated and newer editions. There are variations called weak, semi-strong, and strong that I won't get into since they are mainly of interest to market theorists rather than practitioners.

The essence of the efficient market hypothesis (EMH) is that all of the relevant information about any publicly traded stock has been incorporated into its current price. The logic is that those who think the price is too low will be placing orders to buy while those who think it is too high will be selling, so the equilibrium point, the current price, reflects all of their opinions, which in turn incorporate all relevant information. There may be exceptions for very thinly traded stocks, which are in effect too small to be of interest to this discussion, and by those with "inside information" who are prohibited from trading the stock.¹ The price of the stock will certainly be affected by future news, which is "random" and, more importantly, not known currently. When there are important developments, particularly those that are surprising, the price of the stock will move, sometimes by a large amount.

(As a technical mathematical note, random does not mean equally likely to be favorable or unfavorable. A random process can be biased, and one can argue that economic news in the long run has a positive bias. As a simple example of a biased random process consider rolling two ordinary fair dice, which is part of many board games. The total number of spots showing on the dice, which ranges from 2 to 12, is biased towards the five values in the

¹ Some advocate letting insiders trade to enhance market efficiency. That complex issue is far beyond what is appropriate here.

middle (5, 6, 7, 8, 9), which occur with probability 2/3.)

If one accepts EMH, then the only worthwhile investment plan is to accept market returns since there is no way anyone can figure out ways that will do better over the long run. In other words, decide on the allocation among the various asset classes that is appropriate for you, which can be a complicated and technically sophisticated process, and then to the extent possible buy low-cost index funds that track the markets for those asset classes. I would add that one should analyze the percentages in the various asset classes and, if necessary, rebalance the portfolio periodically, at least once a year.

If I thought that was anywhere near the best way to invest, I would not be sending you this newsletter because I would see no need for the managed account services I provide. There are many reasons, which in effect I have discussed several times in previous issues and which no doubt will appear in future issues. So I will confine the discussion to the EMH itself.

Problems of the Efficient Market Hypothesis

► **Paulos's paradox:** The first is not really a criticism of EMH, but it is a logical paradox that makes one wonder if there is much sense in talking about it at all. While he likely did not originate it, John Allen Paulos writes about it in his amusing 2003 book *A Mathematician Plays the Stock Market*.² He points out that if EMH is to be valid, many market participants must believe it is false. Why? If most everyone accepted EMH, then hardly anyone would bother to trade stocks as opposed to just buying and holding them. And if there is hardly any trading, then price will not be able to reflect all the currently known information. The logic can

² Since I have a Ph.D. in math, I may be biased in regard to a book by a mathematician.

be carried further by saying the more EMH is *not* believed, the more likely it is to be true, and vice-versa.

That does not really shed any light on the validity of EMH, so let's move on to what I consider to be the main problems. Before doing so, I need to point out that I do believe the market is efficient *in the long run*, but not necessarily the near term. The price of a stock is more likely to zigzag above and below its "correct" value and eventually close in on that value. At first, usually after some significant news about the company, the market in general, or the economy, the zigzags will overshoot in one direction, and then overshoot to a lesser extent in the opposite direction, and so on in what can be a convergent manner. Along the way there may be some news that starts the zigzagging all over again. It is this process, which I consider the non-efficient market hypothesis, that provides good trading opportunities. Now on to some of the problems.

► **Price is set by dollars, not knowledge:** Two market participants may have equally valid, but differing, knowledge and insight into the future course of a company or the economy and vastly different amounts of money available to take positions. In which direction will the price go? Obviously in that of the richer participant. Extend that concept to all market participants. If the major players, the "movers and shakers," mostly have similar opinions, say favorable, then the price of the stock will be pushed in the appropriate direction, up in that case. There will be a limit to how high a price they are willing to pay, but it will be higher. In effect, the market says "big money" is "smart money."

I don't believe that based on what I see all too often. A brokerage house upgrades or downgrades a stock, and the stock makes a big move that day. Sometimes the change is due to some real news such as earnings much above or

below what was anticipated, but often an analyst just changes his or her rating, hopefully based on a thorough and cogent study of the company and its prospects.

One could argue that a major brokerage analyst change of opinion is news, so the stock price should reflect it. However, the track records of these analysts are very poor. There are numerous examples where they have recommended buying a stock at a high price, say around 100, and not changed their opinions until the price dropped substantially, say to around 20, because now the stock was "too risky." It is 80 dollars a share less risky than when they recommended it, but they won't point that out. One study showed longer-term earnings forecasts by these analysts miss by an average in the 40% range.

So why does anyone take these pronouncements seriously? Smart investors don't. However, managers of large amounts of capital in mutual funds, pension plans, large private accounts, and the like are usually not judged primarily by the profits and losses in their accounts. Instead, their performance is compared to their peers or to some standard benchmarks such as the S&P 500 index. When the high visibility, at least in their world, analyst pontificates, they know quite a few of their crowd are going to react. That means the "safe" (for them, not their investors) course of action is to stay with the crowd so that their comparisons won't be bad. This is "big money" in action, but I would not consider it to be "smart money."

Yet another aspect of prices being set by dollars and not necessarily knowledge is evident from the choices faced by small and large investors. An investor with a relatively small amount of capital in comparison to the mutual funds may have good knowledge about quite a few stocks. However, taking positions

The EMH to a large extent says that "big money" is "smart money," but there is a lot of evidence that is not the case.

in all of them may not be practical or desirable for reasons of not enough money for all of them or not enough time to pay close attention to too large a number of issues. Such an investor will choose what he judges to be the most favorable opportunities based on how the current prices compare to his perceived values. His knowledge about the others will not be “in the market.”

On the other hand, a manager with a lot of capital as is the case with a mutual fund may feel the need to take positions even if there are not enough opportunities he judges to be worthwhile. Some, such as Warren Buffet, may be willing to build up cash awaiting desirable investments, but most (fund) managers won't take the risk of holding a substantial cash position and seeing the market rise, which would lead to poor comparisons with the benchmarks and their peers. I don't see how buying stock just because money is available contributes to efficient markets.

► **It is easier to act on positive feelings:** An investor with a valid negative outlook on a stock who does not own the stock may decide not to take any action. For various reasons the investor may not want or be able to take a short position or a suitable position with derivatives such as options. This is more likely the case with smaller companies for which there may not be options available and for which a short position may not be possible or may be too dangerous. On the other hand, one with a positive outlook can almost always buy the stock at an acceptable price. All told, this results in a positive bias, particularly for smaller stocks during rising markets. When the mood changes, the owners of the stock

realizing that the price has gotten “too high” (not believing EMH) become very anxious to get out, and all their selling may well drive the price “too low.”

► **“Bubbles”:** If stock pricing is efficient to the point that it is virtually impossible to profit from any sort of analysis about their likely future courses, then there should never be times when all or a large group of stocks are clearly grossly overpriced. In retrospect, that was clearly the case in early 2000 when the Nasdaq Composite, which is heavily weighted with high technology stocks, climbed above 5000. In the following two and half years, that index fell by 78%, and even with a rise of 79% since then as of the end of March, it is still 60% below its all time high.³ Either the market for these stocks was far from efficient in March 2000 or those bidding up the prices did not have a very good idea about their “true” value. Analysis using traditional concepts such as earnings and revenues showed that many of these stocks had priced in every conceivable favorable development and then some. Hardly what I would call an “efficient” market.

The subsequent crash, and that is the right term, in the Nasdaq Composite shows that eventually the market will come to its senses, and it may well have overdone that given the large percentage rise in the index over the past year. That supports what I said earlier: that the market is efficient in the long run, but that is no reason to give up trading and other forms of active investment management and instead to invest passively only in things like index funds.

³ A 78% drop takes about a 3.5 times increase to recover!