The Paradox of the Efficient Market Hypothesis

Groucho Marx quipped that he'd never join a club that would be willing to accept him as a member. Epimenides the Cretan exclaimed (almost) inconsistently, "All Cretans are liars." Investment books suggest following the tens of thousands of readers who have gone against the crowd. Warped perhaps by my study of mathematical logic and its emphasis on liars' paradoxes, consistency puzzles, and self-reference, I'm naturally interested in the self-referential aspects of the market, particularly of the Efficient Market Hypothesis. Can it be proved? disproved? A serious problem, however, is begged by this question. The Efficient Market Hypothesis is not, I think, necessarily true or false, and I offer the following argument why.

The Paradoxical Efficient Market Hypothesis

If a large majority of investors believe in the hypothesis, they would all assume that new information about a stock would quickly be reflected in its price. Specifically, they would affirm that since news almost immediately moves the price up or down, and since news can't be predicted, neither can changes in stock prices. Thus investors who subscribe to the Efficient Market Hypothesis would further believe that looking for trends and analyzing companies' fundamentals is a waste of time. Believing this, they won't pay much attention to new developments. But if relatively few investors are looking for an edge, the market will not respond quickly to new information. In this way an overwhelming belief in the hypothesis ensures its falsity.

To continue with this cerebral somersault, recall now a rule of logic: sentences of the form "H implies I" are equivalent to those of the form "not I implies not H." For example, the sentence "heavy rain implies that the ground will be wet" is equivalent to "dry ground implies the absence of heavy rain."

Using this equivalence, we can restate the claim that overwhelming belief in the Efficient Market Hypothesis leads to (or implies) its falsity. Alternatively phrased, the claim is that if the Efficient Market Hypothesis is true, then it's not the case that most investors believe it to be true. That is, if it's true, most investors believe it to be false (assuming almost all investors have an opinion and each either believes it or disbelieves it).

Consider now the inelegantly named Sluggish Market Hypothesis, the belief that the market is quite slow in responding to new information. If the vast majority of investors believe the Sluggish Market Hypothesis, then they all would believe that looking for trends and analyzing companies is well worth their time and, by so exercising themselves, they would bring about an efficient market. Thus, if most investors believe the Sluggish Market Hypothesis is true, they will by their actions make the Efficient Market Hypothesis true. Using the above logical equivalence on the previous sentence, we conclude that if the Efficient Market Hypothesis is false, then it's not the case that most investors believe the Sluggish Market Hypothesis to be true. That is, if the Efficient Market Hypothesis is false, then most investors believe it (the EMH) to be true. (You may want to read over the last few sentences in a quiet corner.)

In summary, if the Efficient Market Hypothesis is true, most investors won't believe it, and if it's false, most investors will believe it. Alternatively stated, the Efficient Market Hypothesis is true if and only if a majority believes it to be false. (Note that the same holds for the Sluggish Market Hypothesis.) These are strange hypotheses indeed!

Of course, I've made some big assumptions that may not hold. One is that if an investor believes in one of the two hypotheses, then he disbelieves in the other, and almost all believe in one or the other. I've also assumed that it's clear what "large majority" means, and I've ignored the fact that it sometimes requires very few investors to move the market. (The whole argument could be relativized to the set of knowledgeable traders only.)

Another gap in the argument is that any suspected deviations from the Efficient Market Hypothesis can always be attributed to mistakes in asset pricing models, and thus the hypothesis can't be conclusively rejected for this reason either. Maybe some stocks or kinds of stock are riskier than our pricing models allow for and that's why their returns are higher. Nevertheless, I think the point remains: the truth or falsity of the Efficient Market Hypothesis is not immutable but depends critically on the beliefs of investors. Furthermore, the percentage of investors who believe in the hypothesis itself varies, so the truth of the hypothesis varies inversely with it.

On the whole, most investors, professionals on Wall Street, and amateurs everywhere, disbelieve in it, so for this reason I think it holds, but only approximately and only most of the time.