

Unit – III (Efficient Market Hypothesis)

What is An Efficient Capital Market?

An efficient capital market is a market that reflects all available news and information. An efficient market is also quick to absorb new information and adjust stock prices relative to that information. This is known as an informationally efficient market. Generally, efficient markets are expected to reflect all available information. If that is not the case, investors with the information may benefit leading to abnormal returns.

The following are the main assumptions for a market to be efficient:

- A large number of investors analyze and value securities for profit.
- New information comes to the market independent from other news and in a random fashion.
- Stock prices adjust quickly to new information.
- Stock prices should reflect all available information.

Securities Markets - Weak, Semi-Strong and Strong EMH

The Three Basic Forms of the EMH

The efficient market hypothesis assumes that markets are efficient. However, the efficient market hypothesis (EMH) can be categorized into three basic levels:

1. Weak-Form EMH

The weak-form EMH implies that the market is efficient, reflecting all market information. This hypothesis assumes that the rates of return on the market should be independent; past rates of return have no effect on future rates. Given this assumption, rules such as the ones traders use to buy or sell a stock, are invalid.

2. Semi-Strong EMH

The semi-strong form EMH implies that the market is efficient, reflecting all publicly available information. This hypothesis assumes that stocks adjust quickly to absorb new information. The semi-strong form EMH also incorporates the weak-form hypothesis. Given the assumption that stock prices reflect all new available information and investors purchase stocks after this information is released, an investor cannot benefit over and above the market by trading on new information.

3. Strong-Form EMH

The strong-form EMH implies that the market is efficient: it reflects all information both public and private, building and incorporating the weak-form EMH and the semi-strong form EMH. Given the assumption that stock prices reflect all information (public as well as private) no investor would be able to profit above the average investor even if he was given new information.

Weak Form Tests

The tests of the weak form of the EMH can be categorized as:

1. Statistical Tests for Independence - In our discussion on the weak-form EMH, we stated that the weak-form EMH assumes that the rates of return on the market are independent. Given that assumption, the tests used to examine the weak form of the EMH test for the independence assumption. Examples of these tests are the autocorrelation tests (returns are not significantly correlated over time) and runs tests (stock price changes are independent over time).
2. Trading Tests - Another point we discussed regarding the weak-form EMH is that past returns are not indicative of future results, therefore, the rules that traders follow are invalid. An example of a trading test would be the filter rule, which shows that after transaction costs, an investor cannot earn an abnormal return.

Semi-strong Form Tests

Given that the semi-strong form implies that the market is reflective of all publicly available information, the tests of the semi-strong form of the EMH are as follows:

1. Event Tests - The semi-strong form assumes that the market is reflective of all publicly available information. An event test analyzes the security both before and after an event, such as earnings. The idea behind the event test is that an investor will not be able to reap an above average return by trading on an event.
2. Regression/Time Series Tests - Remember that a time series forecasts returns based historical data. As a result, an investor should not be able to achieve an abnormal return using this method.

Strong-Form Tests

Given that the strong-form implies that the market is reflective of all information, both public and private, the tests for the strong-form center around groups of investors with excess information. These investors are as follows:

1. Insiders - Insiders to a company, such as senior managers, have access to inside information. SEC regulations forbid insiders for using this information to achieve abnormal returns.
2. Exchange Specialists - An exchange specialist recalls runs on the orders for a specific equity. It has been found however, that exchange specialists can achieve above average returns with this specific order information.
3. Analysts - The equity analyst has been an interesting test. It analyzes whether an analyst's opinion can help an investor achieve above average returns. Analysts do typically cause movements in the equities they focus on.
4. Institutional money managers - Institutional money managers, working for mutual funds, pensions and other types of institutional accounts, have been found to have typically not perform above the overall market benchmark on a consistent basis.

Securities Markets - Market Anomalies

1. Earnings Reports

It has been shown that an investor can profit from investing immediately when a company reports because it takes time for the market to absorb the new information. This goes against the EMH.

2. January Anomaly

The January effect goes against the EMH. Essentially the January effect indicates that as a result of tax-related moves, investors have been shown to profit by buying stocks in December as they are being sold for losses and then selling them again in January.

3. Price-Earnings Ratio

Investing using the P/E ratio valuation metric has been an anomaly against the EMH. It has been shown that investors can profit by investing in companies with a low P/E ratio.

4. Price-Earnings/Growth (PEG) Ratio

Investing using the PEG valuation metric has been an anomaly against the EMH. It has been shown similar to the P/E ratio that investors profit by investing in companies with low PEG ratios.

5. Size Effect

Going against EMH, it has been shown that smaller companies, on a risk-adjusted basis, have greater returns than their larger peers.

6. Neglected Firms

Neglected firms are firms that Wall Street analysts deem too small to cover. As a result, these firms tend to generate larger levels of return, negating the EMH.

Overall Conclusions About Each Form of the EMH

- Weak-Form EMH

The weak-form EMH is supported by the tests and analysis done. Essentially, the weak-form holds that abnormal returns are not achievable with the use of past-historical data as a means to generate returns.

- Semi-strong Form EMH

The semi-strong form EMH, at times, is both supported and not supported by the tests and analysis done. There has been some evidence that securities are not reflective of the semi-strong form EMH.

- Strong Form EMH

It appears from the tests and analysis performed, that the strong-form EMH does hold. While insiders and specialists do have access to private information, SEC regulations forbid this information to be used.

Securities Markets - Implications of Efficient Markets

EMH and Technical Analysis

Technical analysis bases decisions on past results. EMH, however, believes past results cannot be used to outperform the market. As a result, EMH negates the use of technical analysis as a means to generate investment returns.

With respect to fundamental analysis, the EMH also states that all publicly available information is reflected in security prices and as such, abnormal returns are not achievable through the use of this information. This negates the use of fundamental analysis as a means to generate investment returns.

EMH and the Portfolio Management Process

As we have discussed, the portfolio management process begins with an investment policy statement, including an investor's objectives and constraints. Given EMH, the portfolio management process should thus, not focus on achieving above-average returns for the investor. The portfolio management process should focus purely on risks given that above average returns are not achievable.

A portfolio manager's goal is to outperform a specific benchmark with specific investment ideas. The EMH implies that this goal is unachievable. A portfolio manager should not be able to achieve above average returns.

Why Invest in Index Funds?

Given the discussion on the EMH, the overall assumption is that no investor is able to generate an abnormal return in the market. If that is the case, an investor can expect to make a return equal to the market return. An investor should thus focus on the minimizing his costs to invest. To achieve a market rate of return, diversification in a numerous amounts of stocks is required, which may not be an option for a smaller investor. As such, an index fund would be the most appropriate investment vehicle, allowing the investor to achieve the market rate of return in a cost effective manner.

Conclusion

Within this section we have discussed the organization and function of securities markets, the composition and characteristics of the various weighting schemes, and the various implications of the efficient market hypothesis.