CHAPTER 2: LITERATURE REVIEW

2.1 Introduction
Successful stock market investments depend on two major factors. First, it is the accuracy in selecting good quality and high growth stocks. Second, it is the timing of the purchases and sales, which depends on the ability to understand and predict the behaviour of stock price movements and the stock markets movements as a whole. Numerous years of studies by economists and statisticians in the analysis of stock price movements have resulted in three different schools of thought; namely the “technical” analysis, the “fundamental” or “intrinsic value” analysis and the “random walk theory” of investment.

It is important to review these three theories of investments, as they are the most applied theories within the investment industry and the understanding of such theories is useful to stock market investment as a whole. Upon review, we will compare and contrast these three theories with the Dividend-Yield Strategy to ascertain any similarity or difference.

2.2 Technical Analysis
A definition of Technical Analysis by Edwards and Magee⁶ is:

{ (technical analysis) is the science of recording, usually in graphic form, the actual history of trading (price changes, volume of transactions) in a certain stock in “the Averages” and then deducing from that pictured history the probable future trend}.

The concept of technical analysis is that all information regarding earnings, dividends and the future performance of a company are automatically reflected in the company’s historical stock prices; and that stock prices tend to move in “trends”. The basic belief is that “prices move in trends, and trends tend to continue until something happens to change the supply-demand balance”\(^7\).

Technical analysis is used by chartists on the assumption that the historical price movements of a stock contain enough information to predict its future price behavior. Chartists develop and analyse the stocks’ past “patterns” in order to predict future price behavior and use the information to reap above-average returns. The best known example of this approach in predicting stock prices is the Dow Theory\(^8\).

The Dow Theory works on the concept that a buy strategy is to be initiated when the stock market moves beyond the last peak and a sell strategy to be initiated when the stock market moves below the preceding low. Other approaches include The Filter System, Relative-Strength System and Price-Volume System.

2.2.1 Challenges to Technical Analysis

There are several challenges towards technical analysis. The first challenge is that chartists will buy (or sell) only after stock price trends are established, in which case the reversal could be sharp and sudden. Hence, there might not be enough time for the chartist to react.

The second challenge is that such analysis, if used by many chartists, will ultimately be self-defeating because there will be no clear buy or sell signals.

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\(^8\) Malkiel G. Burton (1973), A Random Walk Down Wall Street, USA; W. W. Norton & Company.
The third challenge is that due to an increasing number of analysts and the use of modern technology in terms of analysing and disseminating such information, the stock markets have become more "efficient", hence prices adjust so quickly to new information that technical analysis cannot be applied in a fruitful manner.

Nevertheless, chartists continue to play a prominent role in the stock markets, as seen by the use of their work in numerous research reports and financial newspapers, and such analyses are used by numerous investment organisations across the globe.

2.2.2 Relevance of Technical Analysis to the Dividend-Yield Strategy
Despite the popularity of Technical Analysis, its method of analysis is very different from that of the Dividend-Yield Strategy. Technical Analysis only looks at the trend lines and ignores the dividend payouts, which conversely is the key ingredient in the Dividend-Yield Strategy.

Hence, there is no similarity between Technical Analysis and the Dividend-Yield Strategy despite the popularity of Technical Analysis.
2.3 Fundamental Analysis

This analysis is based on the firm-foundation theory in selecting the appropriate stocks. The theory states that each stock has an "intrinsic value", which can be determined by the analysis of present and future prospects and factors \(^9\).

According to Graham \(^10\), besides the general market forces, the two categories of individual factors affecting the intrinsic values are Future-value factors and Intrinsic-value factors.

Future-value factors are:

i) Management and reputation

ii) Competitive conditions and prospects

iii) Possible and probable changes in volume, price and costs

Intrinsic-value factors are:

i) Earnings

ii) Dividends

iii) Assets

iv) Capital Structure

v) Terms of the Issue

vi) Others

Once the intrinsic values have been determined, the fundamentalists will buy stocks when their prices are temporally undervalued or have been overlooked resulting in their prices falling below their intrinsic values. By doing this, fundamentalists have created a margin-of-safety. It may however take many months or years before the value of their stocks are recognised by the public and their stock prices adjust to the higher values.

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\(^9\) Malkiel G. Burton (1973), A Random Walk Down Wall Street, USA; W. W. Norton & Company.

For the fundamentalists, it is the pricing which is imperative and not the timing. If the emphasis is on timing, then the individual becomes a speculator and not an investor. Therefore the fundamentalists' primary interest lies in the acquisition of suitable stocks at suitable prices.

A key proponent of the Fundamental Analysis type of investment, Warren Buffet of Berkshire Hathaway, registered an annual investment return of 28.6% (over 37 years) as compared to the S&P 500 return of 17.24% 11.

2.3.1 Challenges to Fundamental Analysis
Despite the logical reasoning to this analysis and the numerous successful investors (for example Benjamin Graham and Warren Buffett) applying this analysis, there are three potential challenges to this analysis.

The first challenge is the lack of accuracy in the information gathered by the analysts. This could be attributed to too much information or to the lack of expertise in filtering the accurate from the inaccurate information. Due to the advancement in creative accounting, many financial projections submitted by the companies to various organisations (e.g. regulatory bodies) misrepresent the true financial positions of the companies. Hence the analysts need to decipher the true financial position of a company's published financial figures.

The second challenge is the issue of stock price valuation. Analysts could use a variety of accepted valuation models and each provides a different value to the same stock. Some of the common valuation techniques are Expected Future Earnings, Expected Future Dividends, Multipliers of Dividend and Earnings and Asset Values. In addition, the problem of accurately estimating future data (for example sales data and operating costs) creates another layer of uncertainty.

Burton\textsuperscript{12} studied the accuracy of predicting the future growth of companies from data provided by 19 investment houses. The results showed that the estimates by security analysts were worse than the predictions from several naïve-forecasting models. A similar study by Sandretto of Harvard and Milkrishnamurthi of MIT showed that the annual average error\textsuperscript{#} of the analysts was 31.3\% over a five-year period. Yet another study published by Forbes showed that analysts' forecasts for earnings were off by more than 40\% and 75\% of all earnings forecasts missed actual figures by more than 30\%.

The third challenge is that the stock markets may not allow the stock prices to converge to its estimated "correct" values or if they do, it may take many months or years for the convergence.

In addition, the growing number of professional research analysts and the increasing usage of sophisticated technologies in analysing and transmitting information render the markets more "efficient" hence conforming to the notion of Random Walk Theory.

\textsuperscript{12} Malkiel G. Burton (1973), \textit{A Random Walk Down Wall Street}, USA; W. W. Norton & Company.

\textsuperscript{#} The annual average error is the calculated as the difference between the analysts' forecasts at the beginning of the year and the actual figures for the same year for a series of companies over a number of years.
2.3.2 Relevance of Fundamental Analysis to the Dividend-Yield Strategy

Both the Fundamental Analysis and the Dividend-Yield Strategy are similar in the sense that both consider value factors of the companies in analysing the worth of the share price. However the major difference is that Fundamental Analysis treats Dividends as one of many value factors to consider whereas Dividend-Yield Strategy treats dividends as the only consideration.

2.4 Random Walk Theory

The first development of the Random Walk Theory ("RWT") around the turn of the century was by Louis Bachelier 13 for his doctorate thesis but the theory did not receive much attention. It was Eugene Fama at the University of Chicago who propelled the Random Walk Theory and gained public recognition.

The fundamental assumption for the Random Walk Theory is that stock markets are efficient. Fama's 14 definition is:

"Efficient market is defined as a market where there are large numbers of rational, profit-maximizes actively competing, with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants",

There are three forms of efficiency and each form reflects the different level of comprehensiveness in terms of information. A weak form indicates that stock prices fully reflect all historical information. A semi-strong form indicates that stock prices reflect all new, publicly available information instantaneously and a strong form indicates that stock prices reflect both public and private information.

Based on the assumption that major stock markets are efficient\textsuperscript{15\textsuperscript{16}}, the actual stock price is a good estimate of its intrinsic value. The different actions of many competing stock market investors cause the actual stock price to wander randomly about its intrinsic value. This implies that stock market investment is a game of chance whereby a simple policy of buying and holding a stock is as good as any complicated mechanical procedure for the selection and timing of purchase and sales.

Even if analysts can outperform the stock market using strategies other than random selection, the results must be consistent and must also outperform the random selection by an amount greater than the cost of resources incurred through the use of these more complicated strategies\textsuperscript{17}.

Most studies conclude that the major stock markets are efficient and that all information is reflected in the current stock price\textsuperscript{18}.

As quoted by Fama\textsuperscript{15}, there are two separate hypotheses to the Random Walk Theory, namely:

(1) Successive price changes are independent, and

(2) Price changes conform to some probability distribution.


\textsuperscript{18} Olsen & Associates, Research Group.
Numerous empirical studies have been performed and found to satisfy the above two hypotheses thus validating the Random Walk Theory (Fama, Cootner, Kendall, Granger and Morgenstern, Godfrey, Grander and Morgenstern\(^{19}\))(Fama\(^{20}\)).

Similar studies were performed at the KLSE and results showed that the market is efficient, albeit a weak form (Noraini\(^{21}\)), (Teng\(^{22}\)), (Othman\(^{23}\)), (Barnes\(^{24}\)), (Laurence\(^{25}\)).

2.4.1 Challenges to the Random Walk Theory

Though empirically tested, only some academicians are supportive of the Random Walk Theory. This is because the weakness of the theory lies in the fundamental assumption that the stock market is efficient.

Practitioners\(^{26}\) argue that the stock market is not efficient because information relating to stocks is disseminated unevenly over the investing public and not evenly as stated in the efficient market hypothesis. Those who possess the information have a varying degree of information accuracy. Even if the entire investing public possesses all the information, it is on a gradual basis and not instantaneous.


There are also challenges to the question of methodology; especially whether any observed departure from the market efficiency is due to some genuine market inefficiency or a deficiency through using the market pricing model as a yardstick to compare actual with theoretical prices\textsuperscript{27}.

Another challenge is in the area of stock market anomalies. Studies have found that the "January effect" is quite prominent, especially for smaller firms\textsuperscript{28}. Other anomalies include "Weekend effect"\textsuperscript{29} and "Small Firm effect"\textsuperscript{30}.

2.4.2 Relevance of Random Walk Theory to the Dividend-Yield Strategy
There is no similarity in terms of analysis between the Random Walk Theory and Dividend-Yield Strategy. Random Walk Theory basically concludes that share prices cannot be predicted due to the random movement in share prices and hence no above-average investment returns can be made. On the other hand, the Dividend-Yield Strategy theorises that using the dividend payouts in the analysis can highlight shares that provide above-average investment returns.

Therefore out of the three investment theories, Dividend-Yield Strategy has some similarities with only the Fundamental Analysis. This conclusion is interesting as this strategy deviates from the three traditional and established theories of investments.

\textsuperscript{27} Olsen & Associates, \textit{Research Group}.
\textsuperscript{28} Haugen R. and Lakonishol J. (1988), \textit{The Incredible January Effect}, USA; Dow Jones-Inwin; quoted by Malkiel G. Burton (1973), \textit{A Random Walk Down Wall Street}, USA; W. W. Norton & Company.