

Chapter 1

Introduction

1.1 Efficient Market Hypothesis

Capital market is important to a nation's economic development, especially a developing country like Malaysia. It can assist economic development through the mobilization of funds. The availability of information to the public to enable investors to act fast and in accordance to changes in any public listed company plays an important role in effective funds allocation of the nation. Hence, the stock market has to be operating in an efficient way of which stock prices must provide accurate signals so that funds can be allocated effectively. In other words, the stock market must have some degree of efficiency.

Efficiency means information is widely and cheaply available to investors and that all relevant and ascertainable information is already reflected in security prices. This implies that past price trend cannot be used to predict future price direction and active trading strategies will not consistently outperform the market after adjusting for transaction costs and risk. Therefore, an investor is better off in applying the passive *buy and hold* strategy.

Fama (1965), in his classic study of developing the Efficient Market Hypothesis (EMH), stated that past price sequences are only one of the many types of information available to the market. New information is continuously made available to the

market randomly and stock prices should respond to news and fluctuate accordingly.

Fama (1965) postulated three levels of efficiency in the equity market :-

- i. Weak form
- ii. Semi-strong form
- iii. Strong form

The weak form efficient hypothesis stipulates that historical price and volume data for stocks contain no information which can be used by the investors to make abnormal profit. The hypothesis suggests that technical analysis is well-recorded but worthless folklore.

The semi-strong form efficient hypothesis specifies that markets are efficient enough for prices to reflect all publicly available information. Therefore, only insiders who have access to valuable information could make an abnormal gain. This hypothesis rejects fundamental analysis.

The strong form efficient hypothesis claims that no one can make abnormal profit from publicly or privately available information. The rates of stock price changes are independent random variables.

Anomalies and seasonality of stock returns imply that the market is not efficient. The empirical evidences of anomalies in stock prices studies have raised concern to the Efficient Market Hypothesis (EMH). The existence of seasonality in stock prices due to calendar timing and firm size has questioned the validity and suitability of not only the EMH, but also both the Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT).

1.2 The Stock Market Anomalies

There are a number of empirical studies using daily stock returns in equity markets to analyze the existence of anomalies. These studies have led to many unexpected discoveries in the patterns and relationships among stock returns. Among the findings which are considered significant are the *day-of-the-week effect*, *firm size effect* and the *January effect*. These anomalies, instead of confirming the well known Capital Asset Pricing Model (CAPM), Arbitrage Pricing Theory (APT) and Efficient Market Hypothesis, are creating exceptions to the rules.

Cross (1973) found out that, in his study on the daily stock price changes in the New York Stock Exchange (NYSE), the distribution of stock returns on Friday and Monday were significantly different in seventeen out of eighteen years studied. According to his study, the Monday returns on average were negative in contrast to the positive returns on Tuesday to Friday. Similar results were concluded in the studies by French (1980), Gibbons and Hess (1981) and many others. This anomaly has been termed as the *day-of-the-week effect*.

Another anomaly is the small firm effect or size effect. Studies have found that small firms yield abnormal returns even after adjusting for risk. This empirical anomaly has aroused great interest because it is not accounted for by CAPM and APT. Reinganum (1983) examined the daily returns of NYSE and AMEX stocks during the period from 1964 to 1978. He found that the average return for firms with smallest market capital exceeds that of firms with the largest market capital by more than 30% annually.

Keim (1983) revealed that the abnormal returns to small company stocks can be linked to another calendar-based anomaly, the January effect. January effect refers to the phenomenon whereby stocks have unusually high returns in the month of January. Rozeff and Kinney (1976) examined monthly returns of the Center for Research in Security Prices (CRSP) equally-weighted index for NYSE stocks covering the period from 1904 to 1974. They found that the average return for January was 3.48% compared to only 0.42% per month for the other eleven months.

1.3 Literature Review

Empirical studies on capital markets have discovered several anomalies in stock returns such as January, weekend, holiday and size effects from the U.S. to the Asia Pacific.

Cross (1973) has documented the weekend effect on stock returns, whereby the average return on Friday is abnormally high while the average return on Monday is negative. He found the mean return for the Standard and Poor's (S & P) composite index was -0.18% on Monday but 0.12% on Friday over the 1953-1970 period. French (1980) in his studies of the S&P 500 Composite Index daily returns from 1953 to 1977 found that the daily returns distribution varies according to the days of the week and the returns for Mondays tend to be lower relative to the other days of the week. Gibbons and Hess (1981) investigated the *day-of-the-week* effect on the S&P 500 from July 1962 to December 1978. Their study showed that Monday's returns are abnormally low and at times negative. They also studied the *day-of-the-week* effect in the Treasury Bill market and also found that there is also a strong Monday effect

whereby Monday's returns is on average lower. They offered and tested two probable explanations for the findings, namely, settlement period and measurement errors in observations, but the results proved to be not satisfactory.

Keim and Stambaugh (1984) further examined the weekend effect using a longer period of daily returns of S&P composite Index from 1928 to 1982. The results indicated a consistently negative Monday returns throughout the fifty-five-year period. The study also concluded that there is no significant difference between the weekend effect with Saturday trading (NYSE had Saturday trading up to 1952) and that without Saturday trading. Keim and Stambaugh (1984) also studied to identify whether there is any interrelationship between weekend effect and firm size. They found that smaller size firms seem to have higher average returns on Friday than larger firms.

Rogalski (1984) extended the studies on the relationship between the day of the week effect and size portfolios. He compared the average returns of these portfolios for the month of January with average returns from all other months. He found that in January the average Monday returns of all size portfolios are positive while the average Monday returns of the rest of the year are all negative. In addition, smaller firms on average have higher returns on Mondays in January than larger firms. He also showed that on the average, a large portion of Monday's positive returns in January for all size portfolios is accounted by the first Monday of the month.

Theobald and Price (1984) postulated that frequently traded indices will exhibit greater seasonality in the daily mean return compare to the indices which are less frequently traded. They used two widely cited stock indices in United Kingdom in their study: the Financial Times Ordinary (FTO) Index, a geometrically average index of 30 leading equity shares; and the Financial Times Actuaries All Share (FTAS) Index, a value weighted index of about 750 U.K. stocks. The former is subject to very little in the way of non-trading while the latter is a broader based index that contains less frequently traded stocks. Theobald and Price (1984) found that the measured seasonality in the mean is generally stronger in the FTO index compared to that of FTAS. The FTO showed lower and negative mean Monday returns for the full period from 1975 through 1981 as well as all the sub-periods.

Liano (1989) studied the *day-of-the-week* effect in stock returns over business cycles. He investigated the daily equally weighted (EW) and daily value weighted (VW) stock returns indices constructed by the Center for Research in Security Prices (CRSP). The period of study was 24 years from 1963 to 1986 and it was further subdivided into four economic contraction periods and five economic expansion periods, covering 49 months and 239 months, respectively. His findings showed that, during economic expansion, there is a negative and significantly low Monday returns but high and positive Friday returns which are similar to the results of previous studies. During the economic contraction periods, Monday's returns are significantly negative for both indices but for the large firms (VM), Friday returns are insignificantly different from zero whereas the small firms (EW) have high and significant Friday

returns. His findings also revealed that the magnitude of the negative Monday returns for periods of economic contraction is greater than that of economic expansion.

Solnik and Bousquet (1990) investigated the day-of-the-week effect on the Paris Stock Market. While their findings exhibited a significant positive returns on Friday, there is no Monday effect. Instead, the average returns on Tuesday showed a consistently strong negative pattern. However, they could not explain this difference in phenomena.

Jaffe and Westerfield (1985) examined the day-of-the-week effect on stock markets in U.K., Japan, Canada and Australia. They found that the stock indices of the above markets showed that the average Monday returns are negative but high average Friday and Saturday returns. They also tested the probable explanations for weekend effect, that is, settlement procedure, specialist biases and measurement errors. However, they found no support for the explanation.

Sias and Starks (1995) studied the relationship between the trading behaviour of the institutional investors and the day-of-the-week effect. They studied the daily returns of portfolios primarily held by the institutional investors against that of individual investors. Their findings exhibited that stocks with high institutional holdings significantly revealed higher seasonality as compared to similar sized stocks held by individual investors.

Wong and Ho (1986) investigated the weekend effect on the Singapore stock market. Their studies use the SES All-Share Index and the six sectoral indices. The results show a significant weekly seasonal pattern whereby Monday exhibits a low and negative average return while Friday's average return is high and positive. Similar to Rogalski's (1984) findings, the studies also revealed that there is interrelationship between weekend effect and turn of the year effect whereby Monday returns are high and positive in January and December.

On the local market, Salim (1984) studied the daily closing price of four stocks and two indices (Industrial and Finance) for 1982. The results showed that generally Monday records a smaller price increase than other days of the week but the observation is not of any statistical significance for both the individual stocks and the two indices. Annuar and Shamsheer (1987) carried out similar studies on the Kuala Lumpur Stock Exchange (KLSE) by investigating the New Straits Times (NST) Industrial Index from 1975 to 1985. They found that the returns for both Monday and Tuesday to be negative, with Tuesday's returns being the lowest. This finding is consistent with other studies on the weekend effect phenomenon.

Wong (1987) studied the day-of-the-week effect on both KLSE and SES by investigating the Industrial Indices. The results showed that the average returns on Monday and Tuesday are persistently negative while the Thursday and Friday mean returns are positive. The findings are consistent with the results of similar studies carried out in other markets.

Yong (1989) performed a similar study on KLSE sectoral indices, that is, Industrial, Finance, Hotels, Properties, Tins and Plantations. He found that all sectors, except for the Hotels sector, exhibit consistently highest returns in January.

Ho (1996) examined the *day-of-the-week* effect of 31 stocks in the KLSE Second Board. His findings showed that majority of the stocks have negative returns at the beginning of the week (i.e. Monday and Tuesday) and significantly high returns on Friday. The results are similar to the previous studies.

1.4 Objective of Study

Studies on daily seasonality anomalies to date have been carried out on quite a number of major stock exchanges in countries such as United States, United Kingdom, Japan, Canada, Australia, Singapore and Malaysia. This study further extends the research effort in size effect and seasonality in the stock returns. In particular, empirical results from large capital firms in the local bourse can provide a different perspective on the anomalies.

This study, by using thirty large capital stocks in Kuala Lumpur Stock Exchange Main Board aims to determine whether local large capital firms exhibit any anomalies in returns in support of the empirical evidence of *day-of-the-week* effect phenomenon as shown in almost all the previous studies.

1.5 Organization of the Study

The study is organized with a brief introduction and literature review in Chapter 1 followed by a write up on the KLSE main board, its objective, development and listing requirements in Chapter 2. Chapter 3 describes the data and methodology of the various parametric and non-parametric tests used in the study. The tests carried out are the Oneway ANOVA test, Kruskal Wallis test, Tukey test and t-test. Chapter 4 presents the test results and data analysis of the empirical study. Explanation of the findings will be made. Finally, in Chapter 5, summary and conclusion of the study will be covered.