Chapter 1

Introduction

1.1 Seasonality in Stock Returns

Studies conducted on stock returns have revealed certain empirical regularities that cannot be explained by any known traditional asset pricing theories such as Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory. These regularities (also known as anomalies) are not confined to any particular stock market i.e. they do not only occur in under-developed markets but also in developed markets and nor are they associated by geographic location, as shown through findings of studies by Cross (1973) of the New York Stock Exchange, Gibbons and Hess (1981) and Keim and Stambaugh (1984) of the S & P 500 Index, Jaffe and Westerfield (1985 b) of the stock markets of the United Kingdom, Japan, Canada and Australia, Wong and Ho (1986) of the Singapore Stock Exchange, and Annuar and Shamsher (1987) of the New Straits Times Industrial Index for the Kuala Lumpur Stock Exchange (KLSE). Among the regularities which are considered prevalent and significant are the *January effect*, *day-of-the-week effect* and *firm size effect*.

In the case of *January effect*, studies show that the average returns in the month of January are significantly higher when compared with any other month of the year. This phenomenon in

the West has been attributed to actions by investors to negate the impact of year-end capital gains tax by selling securities with losses to enjoy tax rebate and deferring the sale of securities with capital gains to delay tax payment to next year. This action will depress the prices of securities at the end of the year and cause an increase in prices in January. Though this phenomenon also occurs in the Kuala Lumpur Stock Exchange where the findings from studies by Annuar and Shamser (1987) and Othman Yong (1989) showed the *January effect*, the explanation of the capital gains tax cannot be applied since Malaysia has no capital gains tax.

Another interesting but puzzling stock returns regularities is the *day-of-the-week effect*. Studies by French (1980), Gibbons and Hess (1981) and many others have concluded that the daily returns of the trading days in the week are significantly different from each other. Notably, the returns of Friday are abnormally high (and positive) whilst the returns of Monday are abnormally low (and negative). However, in Japan where Saturday was a trading day until recently, studies by Jaffe and Westerfield (1985a) showed that Saturday returns instead of Friday returns are the one that are abnormally high (and positive).

Evidence is available to show that among these regularities, there also exists interrelationship as in the case of *size and January effect*, whereby the higher January returns are associated with smaller size firms.

1.2 Implication on the Efficient Market Hypothesis

One of the most important implications of seasonality in stock returns is the market is inefficient. The Efficient Market Hypothesis (EMH) states that a market is said to be efficient

if the stock prices fully reflect all relevant information. This implies that past price information cannot be used to predict future price direction. If this is true, then, an investor is better off applying the *buy and hold* strategy than complicated trading rules since both will produce the same results, taking into consideration transaction cost. This, however, does not mean that the investors will not derive abnormal returns. Fama (1970) stated that information on past prices is only one out of the many sets of information that is continuously reaching the market. The efficiency of the market is then determined by how quickly the information can be disseminated, understood and applied by investors. There are essentially three type of capital market efficiency, namely:

i. Weak form

ii. Semi-strong form

iii. Strong form

Where investors are unable to develop trading rules that utilise historical price data to generate abnormal gains from the market, the market is then termed as *weak form* efficiency. *Semi-strong form* efficiency exists when investors cannot develop or utilise trading rules that are based on any publicly available information such as Annual Reports, investment advisory data, etc. The market is said to be *strong form* efficient when no excess returns are generated from any publicly or privately available information.

Besides the implication on the efficient market hypothesis, seasonalities due to firm size have questioned the suitability of the Capital Asset Pricing Model (CAPM) as a valid pricing model. Research findings show that small firms tend to yield higher returns than large firms even after

discounting the risk factor. Given this information, investors would purchase these stocks thus raising the price to a level which is commensurate with the associated risk, thereby achieving equilibrium. This, however, does seem to be the case and as such implies a relook at the CAPM may be necessary.

1.3 Literature Review

Numerous international studies have been conducted to examine the stock market anomalies in stock return from the U.S. to the Asia Pacific. Studies have been carried out on anomalies such as the January effect, and January and size effect. The studies have concluded the existence of the 'day-of-the week' effect or 'the weekend' effect whereby the returns on Friday and Monday have been found to exhibit mean returns that are statistically different from each other and in some studies also different from returns of the other days of the week.

French (1980) in his studies of the S&P 500 Composite Index daily returns for the period 1953 to 1977 found the average Monday returns to be significantly negative. Gibbons and Hess (1981) investigated the day of the week effects on the S & P 500 for the period July 1962 - December 1978. Unlike previously held traditional distribution assumptions regarding financial asset return which declared that there is really no difference in the returns for all days of the week, the findings of their study showed that Monday's returns are abnormally low and at times negative. Besides the S&P 500, 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 effect and measurement errors in observations, but the results proved to be not satisfactory.

Keim and Stambaugh (1984) made further studies on the weekend effect in the U.S. by studying again the S & P 500 Composite Index using a longer period of time (from 1928-1982) and concluded the existence of a strong negative Monday returns or weekend effect similar to previous findings. Their findings also concluded that there is no significant difference between the weekend effect with Saturday trading (NYSE had Saturday trading up till 1952) and that without Saturday trading. In other words, there is a high *last day of the week* return and a low *beginning of the week* return effect. Investigation was also conducted to identify if there is an interrelationship between weekend effect and firm size. The results showed that smaller size firms seem to exhibit higher average returns on Friday than larger firms.

Rogalski (1984) presented some interesting new findings on the day of the week effect. In his study, he ruled out previously put forward probable explanations on the phenomenon such as calender time or diffusion process, settlement period effect, measurement errors and specialist related biases. Instead he decomposed the Friday close to Monday close into two distinguishable components of non-trading day returns (Friday close to Monday open) and trading day returns (Monday open to Monday close). His findings revealed that the abnormally low (and negative) Monday returns as documented in previous studies are made up of the Friday close to Monday open, which he termed as non-trading weekend effect. On the average, the non-trading weekend returns for the S&P 500 and the Dow Jones Industrial Average (DJIA) are 1.13 and 2.62 times higher than the Friday close to Monday close returns, thus

resulting in a positive Monday trading day return. Rogalski (1984) also investigated the interrelationship between weekend, January and firm size, the results being that small firms have higher returns on Monday in January than large firms. In fact, small firms have higher average returns in January than large firms on all trading days.

Jaffe and Westerfield (1985b) investigated the weekend effect in U.K., Japan, Canada, and Australia. They found the stock market indices of the above countries exhibited statistically negative average Monday return and high average Friday and Saturday returns. The Japanese index with Saturday trading had high Saturday returns instead of Friday returns. This, however, is consistent with Keim and Stambaugh's (1984) findings of the S&P Index with Saturday trading. They also tested the probable explanations for the weekend effect i.e. settlement procedure, specialist biases, and measurement errors. However, their findings were similar to those of Gibbons and Hess (1981) for stock indices in the United States, whereby they found no support for the explanations.

Wong and Ho (1986) investigated the day-of-the-week effect on the Singapore stock market. Their studies using the SES All-Share Index and the six sectoral indices showed a strong weekly seasonal pattern whereby Monday exhibited a low and negative average return while Friday's average return is high and positive. Similar to Rogalski's (1984) findings, the findings of Wong and Ho (1986) 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.

Jaffe, Westerfield and Ma (1989) explored the possibility that the low returns on Monday may be linked to the market rise or decline. They studied the market index of Canada, Australia, England and Japan and the results clearly showed that the low Monday effect is pronounced when the market declined but is not apparent following a market rise. They provided several possible explanations such as serial correlation, risk and similar effects for all days. However, none of the explanation proved satisfactory.

Liano (1989) explored the day of the week effect in stock returns over business cycles. He carried out research on the daily equally weighted (EW) and the daily value weighted (VW) stock return indices constructed by the Center for Research in Security Prices (CRSP). The period of study was 24 years from 1963 to 1986 and sub-divided into four economic contraction periods totalling 49 months and five economic expansion periods covering 239 months. The findings of his study showed that during economic expansion, the day of the week effect is similar to the findings of previous studies by others, that is, negative and significantly low Monday returns and high and positive Friday returns. The findings for the period of economic contraction revealed highly significant negative Monday returns for both indices but for the large firms (VW), Friday returns are high but insignificantly different from zero whilst the small firms (EW) have high and significant Friday returns. His study also revealed that the magnitude of the negative Monday returns for periods of economic contraction is greater than the magnitude of the negative Monday returns during economic expansion, 2.88 times *lower* and 2.41 times *lower* for the value weighted and the equally weighted indices, respectively.

Lakonishok and Maberly (1990) studied the relationship between the weekend effect and the

stock trading behaviour of investors. They used data on NYSE odd-lot sales and purchases, sales and purchases of cash-account customers of a major securities firm and the NYSE block transactions. The findings showed that individuals tended to trade more on Mondays than institutional investors implying that the normally low Monday volume on the NYSE is due to the absence of institutional investors. Their study also revealed that individual investors tended to increase the number of selling relative to buying transactions which may partly explain the low (and negative) Monday returns.

Solnik and Bousquet (1990) looked at the day-of-the-week effect on the Paris Bourse. While their findings showed a significant positive Friday average return, the Monday effect is absent. Instead, Tuesday's average return showed a strong and consistent negative pattern. They, however, could not explain this difference in the phenomena.

Sias and Starks (1995) examined the relationship between the day-of-the-week effect and the trading behaviour of institutional investors. They studied the daily returns of portfolios primarily held by institutional investors versus portfolios primarily held by individual investors. Their findings showed that stocks with high institutional holdings clearly exhibited higher turnover seasonality as compared to similar sized stocks held by individual investors. This finding implicated institutional investors with the day of the week anomaly and is generally in contradiction with the findings of Lakonishok and Maberly (1990) which concluded that the weekend effect is primarily driven by individual investors.

On the local front, Annuar and Shamsher (1987) carried out similar studies on the KLSE by

examining the New Straits Times (NST) Industrial Index from 1975-1985 and found both Monday and Tuesday's returns to be negative, with Tuesday's returns being the lowest. This finding is consistent with other studies on the weekend effect phenomenon.

Yong (1989) studied the sectorial indices (Industrial, Finance, Hotels, Properties, Tins and Plantations) of the KLSE and found that except for the hotels sector, the other sectors consistently exhibited the highest returns in January. Yong (1989) postulated that this may be due to the investors being predominantly Chinese, who enter the market to derive speculative gains for the Chinese New Year.

1.4 Objective of Study

Studies on the day of the week effect of stock returns overseas such as in the United States, United Kingdom, Japan, Canada, Singapore and even in Malaysia have primarily been focused on the Main Board stocks. The findings so far show the existence of the day-of-the-week effect. It is therefore interesting to explore the Kuala Lumpur Stock Exchange Second Board, which in comparison to others can be considered to be still in its infancy stage, to see if the Second Board also exhibits the same day of the week effect phenomenon as evident on the KLSE Main Board. Also, the findings of a recent study by Lee (1995) on the Second Board's stock return behaviour, suggested that the Second Board exhibit *weak form* efficiency which in essence meant that investors cannot derive abnormal profits from past price data. If the findings of this study reveal the day-of-the-week anomaly, this would raise doubts regarding the market effeciency of the KLSE Second Board.

1.5 Organisation of the Study

The study is organised with a brief introduction and literature review in Chapter 1. This is followed with a write up on the KLSE Second Board, its objective, development and listing requirements. Chapter 3 covers the data and methodology of the various parametric and non-parametric tests used in this study. The tests employed are the Oneway ANOVA, Kruskal Wallis test, Tukey test and t-test. The results and analysis of the study will be presented in Chapter 4. Some inference of the findings will be made for probable explanations. Finally, the summary and conclusion of the study will be covered in Chapter 5.