CHAPTER 2

LITERATURE REVIEW

Seasonality in stock returns is one of the most commonly cited anomalies in finance. Issues of market seasonality have received much attention since early 1970s until today. Most studies were using some developed stock markets as reference, such as the New York Stock Exchange (NYSE). Following their study, many researchers have conducted for different purposes based on their findings of January effect. Size effect later emerged as another aspect of interest to the financial researchers.

2.1 SEASONALITY OF STOCK RETURNS

In recent years, empirical research on capital markets has discovered several anomalies in stock returns such as January, weekend, holiday, day-of-the-week, CNY, firm size and beta effects. An extensive body of literature in finance focuses on seasonal anomalies (calendar effect) in financial markets. The presence of such anomalies violates the weak form of market efficiency because asset returns are not random, but predictable based on certain calendar effects. Fama's (1970) efficient market hypothesis argues that common stock prices follow a multiplicative random walk. This implies that stock market returns are time-invariant.

Anomalies that are related to this study include turn-of-the-year effect, firm size effect and month-of-the-year effect such as January effect and CNY effect. More than two decades ago Rozeff and Kinny (1976) found seasonal patterns in an equally weighted index of NYSE price indices and reported that January returns are higher than returns in any other month of the year.

2.2 TURN-OF-THE-YEAR EFFECT

Potential stock market inefficiencies evidenced by return seasonalities in both domestic and foreign markets have attracted the attention of researchers for some time. A number of "anomalies" have been discovered in stock returns, with the "turn-of-the-year effect" generating the greatest interest.

According to Ritter (1988), the turn-of-the-year effect refers to the phenomenon that small stocks have unusually high returns during the period beginning on the last trading day of December and continuing through January, with the effect becoming progressively less pronounced as the month wears on. He found that the ratio of stock purchases to sales by individual investors displays a seasonal pattern, with individuals having a below-normal buy/sell ratio in late December and an above-normal ratio in early January. Year-to-year variation in the early January buy/sell ratio explains 46 percent of the year-to-year variation in the turn-of-the-year effect during 1971 to 1985.

Rozeff and Kinney (1976) first documented the 'January effect' that stock returns are higher, on average, in January than in other months in the year, is robust both in developed as well as emerging markets. Using a combination of several indices spanning the 71 years from 1904 to 1974 for NYSE stocks, they found that the average return for the month of January was 3.48 percent, compared to only 0.42 percent per month for the other eleven months.

Gultekin and Gultekin (1983) examined the stock market indices for the period 1959 to 1979 through Kruskal-Wallis non-parametric statistical test. They found that the stock exchanges of Belgium, Canada, Denmark, France, Germany, Japan, Netherlands, Norway, Singapore, Spain, Sweden, Switzerland and United Kingdom have a January effect on stock returns compared to the other eleven months.

In another study, Berges, *et al.* (1984) report a similar result for January in the Canadian stock returns. Using *t*-test, they found that the difference between mean January return and mean return for all other months was statistically significant at 1% level for all stocks.

Vetter and Wingender (1996) examined the possibility that the January seasonality effect can be observed in NYSE over 1935 to 1987 and find a significant seasonality in January returns of the common stock market. Haugen and Jorion (1996) proved that the January effect is still prevailing despite the fact that it was discovered several decades ago. Although Fama (1991) and Dimson and Marsh

(1999) argued that the January excess returns are shrinking, the anomaly remained generally intact as it continues to exist.

In addition, Aggarwal, Hiraki and Rao (1990) and Jaffe and Westerfield (1985) have found the January seasonal in Japan while Aggarwal and Rivoli (1989) have found the existence of the January effect in common stock returns of emerging Asian markets.

There is some evidence of a turn-of-the-year effect in KLSE stock returns, but the conclusions are mixed. Nassir and Mohamad (1987), Wong (1988) and Tay (1991) documented significantly higher returns of the KLSE in January, like those identified in US studies. In addition, a study by Yong (1989) finds that KLSE stock returns in January are not significantly greater than for other months.

In addition, while the January effect appears to be a common pattern observed in most stock markets worldwide, each individual market also exhibits seasonal return in other months apart from January. For example, Draper and Paudyal (1997) found that the UK market show excess return in April and December as well, while Brown, *et al.* (1983) reported abnormal return in the month of August and December in the Australian market.

2.3 HYPOTHESES ON THE TURN-OF-THE-YEAR EFFECT

As a result of Keim's (1983) finding that about 25 percent of the annual size effect occur during the first five trading days of January, a number of frameworks have been proposed to explain the turn-of-the-year effect. These approaches include what can be termed as:

(i) the tax-loss selling hypothesis,

(ii) the gamesmanship hypothesis,

(iii) the information release or insider trading hypothesis, and

(iv) the parking the proceeds hypothesis.

(I) THE TAX-LOSS SELLING HYPOTHESIS

The tax-loss selling hypothesis was suggested by Wachtel (1947) and tested by Reinganum (1983). Reinganum (1983) created portfolios of stocks based upon their market capitalizations and a measure of potential tax-loss selling (PTS). He found that the returns in early January are related to both variables, with small stocks that are high PTS candidates having very high returns, and this evidence proved the turn-of-the-year effect.

According to Roll (1983), the hypothesis explains the January effect as follows. Investors sell stocks whose prices have already declined during the year in

order to realize capital losses on stocks and take advantage of reducing their taxes. Consequently, this selling pressure depresses the prices of stocks even further. In January, selling pressure diminishes and stock prices return to equilibrium values.

Strong evidence for the influence of tax is provided by Griffiths and White (1993) who by exploiting the five day difference between the end of the Canadian and US tax-years conclude that 'the turn-of-the-year anomaly is associated with the taxation and not the calendar year-end,' and in a more general framework by Ritter (1988) amongst others.

Another evidence supporting this hypothesis was given by Branch (1977) who found high returns in January for stocks whose prices reach yearly low during the last week of December. Also Dyl (1977) found that the year-end volume patterns are consistent with the hypothesis. He discovered that stocks with substantial price declines in the prior year exhibit abnormally high year-end volume whereas stocks with price appreciation in the prior year display abnormally low year-end volume.

In contrast, Gultekin and Gultekin (1983) examined the seasonal patterns in stock returns in sixteen countries and found a large January effect, even if the tax-year-end was not December. Brown *et al.* (1983) report a January effect in Australia where the tax-year ends in June, whilst a January effect is observed in Japan where no capital gains tax or loss offset exists (Kato and Schallheim, 1985). In addition, the tax-loss selling hypothesis is inappropriate for Malaysia due to differences in the

taxation system (Ahmad and Hussain, 2001). Overall, the empirical support for the tax-loss selling hypothesis is mixed and it is unlikely to be the only reason behind January seasonals.

(II) THE GAMESMANSHIP HYPOTHESIS

The gamesmanship hypothesis suggests that institutions rebalance portfolio holdings in order to 'window dress' or influence performance-based remuneration (Haugen and Lakonishok, 1988; and Lakonishok, *et al.* 1991). This hypothesis further predicts that the average returns for highly visible firms are lower in January as compared to the other months of the year.

The hypothesis rests on three suppositions. Firstly, it assumes that individual investors sell stocks in December for tax-motivated reasons. Secondly, it assumes that some of the sales proceeds are not immediately reinvested but parked until January. Thirdly, it assumes that investors prefer small, risky stocks when they rebalanced their portfolios at the turn of the year.

Large institutional investors are net buyers of risky securities at the beginning of the year when they are less concerned about including well-known securities in their portfolios or they are trying to outperform benchmarks. Over the year, portfolios are rebalanced when returns are locked in. Portfolio managers remove lesser-known,

risky, or poorly performing stocks from their portfolios and replace these stocks with well-known and less risky stocks with solid recent performance. Additional evidence of selling pressure at year-end and buying pressure in January is provided by Ritter (1988).

Ritter (1988) analysed the buying and selling behavior of investors at the turn-of- the-year for customers of Merrill Lynch, a major brokerage firm in US during the period 1971 to 1985. He found that there is a net selling of stocks by individual investors in December and a net buying of stocks in January.

In another study, Ritter and Chopra (1989) examined CRSP monthly returns file for the period from 1935 to 1986. They found that only small firms exhibit a January seasonal. This is consistent with the hypothesis that individual and institutional investors become net buyers of small, risky securities when they rebalanced their portfolios at the turn-of-the-year.

(III) THE INFORMATION RELEASE OR INSIDER TRADING HYPOTHESIS

The reasoning behind this hypothesis is that, with most firms having a December 31 fiscal year, management becomes aware of non-public information in early January. Some managers use this information to engage in trading in which the

investors on the other side of the transaction lose, on average. To protect themselves, investors demand a higher required rate of return. Hence, the January effect.

Seyhun (1988) presents empirical evidence, however, that insider trading in small firms does not display the seasonal pattern that would be needed to generate the observed patterns in realized returns. Furthermore, the insider-trading or information-release hypothesis makes no prediction regarding the observed pattern that small firms that had previously experienced price declines have much higher January returns, on average, than other firms.

(IV) THE PARKING THE PROCEEDS HYPOTHESIS.

The parking the proceeds hypothesis can be viewed as a generalization of the tax-loss selling hypothesis. According to Ritter (1988), the parking the proceeds hypothesis is that the turn-of-the-year effect is caused by the buying and selling behavior of individual investors. Individuals sell securities as the end of the year approaches in order to realize the losses for tax purposes. Some of the proceeds from the sales are not immediately reinvested, but instead "parked" until January. When these funds are reinvested, the buying pressure pushes up the price of the small firms in which individual investors typically invest. The argument relies upon differential portfolio composition of individual and institutional investors, price pressure effect, and portfolio shifts by individuals.

The reasoning behind the parking the proceeds explanation of the turn-of-the-year effect involves three requirements: i) when individuals buy stocks, they buy a disproportionate number of small stocks because the portfolio composition of individual investors is more intensive in low-priced, low-capitalization stocks than that of institutional investors; ii) the price of these small stocks is affected by buying pressure; and iii) individuals are net buyers of small stocks in early January, because of the proceeds remaining from December's tax motivated sales.

Throughout the year, it is common for individuals who have sold stock to wait for several days or weeks before investing the proceeds. Normally, stock sales on a given day are offset by purchases using funds from previous sales. Therefore, the lagged reinvesting of December's large selling activity will overwhelm the more normal selling activity that occurs in January. Consequently, the seasonal pattern in tax-motivated selling, combined with a normal lag in reinvesting the proceeds from stock sales, will create a seasonal pattern in the buy/sell ratio of individual investors.

It appears that most of the hypotheses provide a theoretically appealing explanation for the turn-of-the-year effect. However, there are no conclusive evidence validating any of the hypothesis. As yet, the size effect, the January effect and the turn-of-the-year effect remained unexplained and continue to puzzle researchers.

2.4 CHINESE NEW YEAR EFFECT

An interesting finding by Ho (1990) is the presence of a February effect in KLSE stock returns, similar to the January effect in US stocks. Ho (1990) suggests that this effect may be related to the CNY. The turn of the lunar year occurs mostly during February and represents the New-Year for ethnic Chinese, who are the dominant investors in the Malaysian market.

Neoh, *et al.* (1990) identified the market seasonality in KLSE. They investigated returns for six of the KLSE's sectoral indices (industrials, finance, hotels, properties, tins and plantations) and find evidence of significantly higher January returns. However, the study also suggests the existence of a CNY effect.

Nassir and Mohammad (1987), Yong (1989), Clare, *et al.* (1998) and Ahmad and Hussain (2001) found that the local market exhibits January effect and the CNY effect. They observed that the CNY effect rally starts as early as two months prior to the first day of the New Year. Their studies, however, were based entirely on market indices that favour large capitalised stocks. Thus, they cannot be used to investigate the firm size effect.

There is also evidence of a February effect in Taiwan (Chen, 1988; Liu, 1991; and Claessens, *et al.*, 1995), and Indonesia (Claessens, *et al.*, 1995). It is the intention of this study to examine further the existence of a CNY/February effect in the KLSE.

2.5 THE RELATIONSHIP BETWEEN SEASONAL STOCK RETURNS AND FIRM SIZE EFFECT

Firm size effect refers to the phenomenon whereby the average returns of small firm size stocks are substantially higher than large firm size stocks. It is not accounted for by CAPM, APT or any known asset pricing theory.

Banz (1981) first documented that small firms tended to outperform large firms in the US, even after adjusting for risk using the CAPM. He ranked common stocks listed on the NYSE during the period 1926 to 1983 according to their market capitalization values. He found that the annual return for the lowest market value quintile was 17.05 percent compared to 11.26 percent for highest market value quintile. Banz's findings have been identified empirically for the UK by Levis (1985 and 1989); Canada, by Berges, *et al.* (1984); Australia, by Brown, *et al.* (1983); and Japan, by Kato and Shallheim (1985).

More than two decades ago, Rozeff and Kinney (1976) found seasonal patterns in an equally weighted index of NYSE price indices and reported that the January abnormal returns are higher for the low capitalization (small) stocks whereas the high capitalization (large) stocks do not have higher returns in January than in other months.

Empirical evidence discovered by Keim (1983) has provided a better understanding of the size effect. Keim (1983) investigated the month to month stability of the size anomaly in NYSE and AMEX stocks over the period 1963 to 1979. He found that there was a relationship between company size and January effect. He reported that the January effect in US markets is closely related to another stock market anomaly, for instance, the so-called 'size effect' documented by Reinganum (1983) and others. The relationship between company size and abnormal return was always negative over the period under his study. Keim (1983) demonstrates that excess returns in January are larger for smaller firms and vice versa. He also indicates that more than 50 percent of January abnormal returns were attributed to the first few trading days of January.

In a study on Canadian stocks, Berges, *et al.* (1984) formed five portfolios from 391 companies listed on the Toronto and Montreal Stock Exchange during the period 1950 to 1980. Again, they found that portfolio return increases as firm size decreases. The mean monthly raw return for the largest firm size portfolio was 1.23 percent compared with 1.67 percent for the smallest firm size portfolio.

Furthermore, Lamoureux and Sanger (1989) examined NASDAQ securities from 1973 to 1985. They employed a month-by-month dummy variable regression to test the null hypothesis of equal monthly expected returns for various size-ranked portfolios. They found that small firms have positive excess returns in January but negative excess returns in February to December. Another interesting observation

was that large firms have negative excess returns in January and positive excess returns in all other months.

In the local bourse, Tay (1991) has investigated the size and the January effect interrelationship of KLSE stock returns for the period 1974 to 1990. His result shows that size effect was prevalent in the market throughout the year and with a pronounced January effect for the smaller portfolio.

Loo (1989) examined a sample comprising 64 common stocks in the KLSE industrial sector for the period from April, 1977 to March, 1987. He formed four equally weighted portfolios. He found the smallest firm size portfolio has an annual raw return of 37.32 percent compared with 20.02 percent for the largest firm size portfolio. However, the intermediate portfolios showed mixed results.

In another study, Ong (1990) examined a sample of 100 stocks in KLSE for the period 1978 to 1987. He found the average monthly raw return for the smallest firm size quintile was 2.56 percent compared with 0.96 percent for the largest firm size quintile. Again, the intermediate portfolios showed mixed results. Summing up the above studies, a pervasive size effect across all firm size portfolios was not evident possibly because the study period was too brief and the sample size was not large enough.