

LITERATURE REVIEW

This chapter covers a quite detailed review of the literature dealing with the calendar anomalies. In recent years much empirical research in financial economics has focused on seasonalities in financial markets. A vast empirical studies on the existence of calendar effects in stock returns have been conducted by many researchers. Best known are probably the low mean returns on Mondays, returns are greater on the turn-of-the-month trading days, higher returns on trading days before holidays, and the high returns in January. Evidence on the pre-holiday effect, half-monthly effect, and time-of-the-month effect will be discussed in this study.

2.1 Evidence on the Pre-Holiday Effect

The holiday effect can be divided into post-holiday or the pre-holiday. But only the pre-holiday effect will be examined in this study. The pre-holiday effect, where returns are higher on trading days before holidays than the other trading days of the year, has been documented by Jacobs and Levy (1988), Wong (1988), Ariel (1990), Cadsby and Ratner (1992), Liano et al. (1992), Fabozzi et al. (1994), Kim and Park (1994), Liano and White (1994), Arsad and Coutts (1997), Redman et al. (1997), Brockman and Michayluk (1998), and Coutts et al. (2000).

Jacobs and Levy (1988) examined the holiday effect on the average return for the day prior to each of the eight market holidays for the period 1963 to 1982. The result shows that the average pre-holiday return is 0.365 per cent and the average regular-day return is 0.026 per cent. In fact, 35 per cent of the entire market on just the eight pre-holiday trading days each year advance over this period.

Wong (1988) examined the existence of seasonality according to the Gregorian, Chinese, and Muslim calendars in the Malaysian stock market from 1970 to 1985. The data comprise the six sectoral indices in the Kuala Lumpur Stock Exchange (KLSE), the KLSE Composite Index, Neoh's Sample Market Portfolio, and other indices, i.e., the Stock Exchange of Singapore All-Share Index, the Hang Seng Index, the Dow Jones Industrial Average, and the Financial Times Industrial Ordinary Share Index. Wong (1988) also showed that there is a Chinese New Year effect in the Malaysian,

Singaporean, and Hong Kong stock markets. The month before the Chinese New Year, i.e., the twelfth month of the Chinese calendar, reports the highly positive returns. The Hari Raya effect is also present in some stocks, especially in the Plantation stocks. This effect also indicates that there is a negative return in the tenth month of the Muslim calendar called Syawal. Syawal is the month during which the Hari Raya falls.

Ariel (1990) found that the pre-holiday returns are significantly higher than the non-pre-holiday returns for stocks listed on the New York Stock Exchange (NYSE) and the American Stock Exchange (AMEX). He employed the daily stock index returns drawn from the Center for Research in Security Prices' (CRSP) value-weighted and equally weighted daily index return for the years 1963 through 1982 to study the pre-holiday effect. He also collected hourly values for the Dow Jones Industrial Average (DJIA) on days surrounding holidays. He has also proven that the high pre-holiday returns are not a manifestation of other calendar anomalies such as January effect, weekend effect, and small firm effect.

Cadsby and Ratner (1992) examined the presence of pre-holiday effect on international stock market returns in ten different countries such as United States, Canada, Japan, Hong Kong, United Kingdom, Australia, Italy, Switzerland, West Germany, and France. The data consist of daily historical closing prices of eleven stock market indices from ten different countries. The Center for Research in Security Prices' (CRSP) equal-weighted and value-weighted indices were both used for the United States. The data from

the Toronto Stock Exchange or University of Western Ontario equal-weighted index was used for Canada. The data for Japan come from the Nikkei Index. The Hang Seng Index was used for Hong Kong, the Financial Times 500 Share Index for the United Kingdom, the All Ordinaries Index for Australia, the Banca Commerciale Index for Italy, the Swiss Bank Corporation Industrials Index for Switzerland, the Commerz-bank Index for West Germany, and the Compagnie des Agents de Change General Index for France. Both of them found that pre-holiday effects are statistically significant for the United States, Canada, Japan, Hong Kong, and Australia. Hong Kong is the only country that exhibits a significant pre-holiday effect.

Liano et al. (1992) studied the holiday effect in the over-the-counter (OTC) market by using the daily returns in OTC stocks for the sample period of 1973 to 1989. The results provide evidence of unusually high returns on trading days before holidays in the OTC market. Additional test results show that other documented calendar anomalies do not cause the pre-holiday, but the weekend effect significantly contributes to the post-holiday effect.

Fabozzi et al. (1994) found that there is a significantly higher return for the day prior to a holiday in futures contracts compared to the non-pre-holiday returns. The findings were consistent with the inventory adjustment process associated with market closings, since the higher pre-holiday returns with lower trading volume are most noticeable for exchange-closed holidays (i.e., the holiday is associated with the closing of the exchanges). There is evidence of positive returns for the day after a holiday associated with higher

trading volume for exchange-open holidays (i.e., the holiday is associated with the opening of the exchanges). This is consistent with positive holiday sentiments. He also found that the magnitude of excess holiday returns is the largest among all seasonal variations.

Kim and Park (1994) provided further evidence of the holiday effect in stock returns and additional insight into the effect. They found the holiday effect present in all three of the major stock markets in the United States, i.e., the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and National Association of Securities Dealers Automatic Quotation System (NASDAQ). They also found that the holiday effect exists in the United Kingdom and Japanese stock markets and the holiday effects in these stock markets are independent of the holiday effect in the United States stock market. The results show that the holiday effect in Japan is not a closed-market effect. They also examined the relationship between holiday effect and firm size. They investigated whether the holiday effect persists across size decile portfolios. The result shows that, after controlling for the day-of-the-week effect and the pre-New-Year's Day effect, firm size effect does not exist in mean returns on pre-holiday.

Liano and White (1994) introduced business cycles to the analysis of a pre-holiday effect in the Standard and Poor's 500 (S & P) and National Association of Securities Dealers Automatic Quotation System (NASDAQ) indices. The S& P index covers the period from 3 July 1962 to 31 December 1991 and the NASDAQ index from 15 December 1972 through

31 December 1991. They divided the data into two periods of economic expansion and contraction that match the classification of business cycles used by the National Bureau of Economic Research (NBER). The pre-holiday returns are significantly higher than the non-pre-holiday returns during the two periods of economy. In addition, the pre-holiday effect is stronger in small firms than in large firms during periods of economic expansion. But the pre-holiday effect is very noticeable in large firms during recessionary periods. Thus, the holiday effect is related to stages of the business cycle and firm size.

Arsad and Coutts (1997) examined the presence of holiday effect in the Financial Times Industrial Ordinary Shares Index from 1 July 1935 through 31 December 1994, giving a total of 14,888 observations after excluding the holidays. The index comprising 30 heavily traded "blue chip" securities has been used to provide a representative spread across British Industry and commerce. The results generally support similar evidence documented for many countries, as the holiday effect appears to be present in their study.

Redman et al. (1997) provided a comprehensive examination of the existence of the pre-holiday effect in the real estate investment trusts (REITs). They use the daily value-weighted and equally weighted indices of stocks listed on the New York Stock Exchange (NYSE) and the American Stock Exchange (AMEX) from 1986 through 1993. The results show that REITs and equally weighted index exhibit a pre-holiday effect. The results of

value-weighted index were generally not significant, indicating that there is no pre-holiday effect.

Brockman and Michayluk (1998) studied the holiday effect by using the returns for all stocks traded on the New York Stock Exchange (NYSE) and the American Stock Exchange (AMEX) from 1963 to 1993, and all stocks traded on the National Association of Securities Dealers Automatic Quotation System (NASDAQ) from 1972 to 1993. The results show that the pre-holiday returns are significantly higher than non-pre-holiday returns during the more recent 1987 to 1993 period. This reveals that the holiday effect is clearly present in that period.

Coutts et al. (2000) investigated the existence of security price anomalies in the Athens Stock Exchange General Index from 14 October 1986 through 14 August 1996. Apart from the General Index, the Banking, Insurance, and Leasing Indices are also considered in this study. The results show that the holiday effect is present in all indices although it is not significantly present in the case of Leasing (i.e., significant at ten per cent level of significance). All four indices, i.e., General, Banking, Insurance, and Leasing Indices report high positive returns for pre-holiday trading days, which are 6 to 13 times the mean returns for the other trading days of the year.

2.2 Evidence on the Half-Monthly Effect

The half-monthly effect has been studied in several international stock markets. But they used different methodologies to investigate the half-monthly effect. The half-monthly effect used in this study refers to the mean returns on the first half of a trading month being higher than the second half of a trading month. The half-monthly effect has been published by Ariel (1987), Jaffe and Westerfield (1989), Liano et al. (1992), Boudreaux (1995), Wong (1995), Balaban and Bulu (1996), Cheung and Coutts (1999), Coutts and Sheikh (2000), and Mills et al. (2000).

Ariel (1987) investigated the monthly effect in stock returns. He employed the Center for Research in Security Prices' (CRSP) value-weighted and equally weighted stock index returns to represent the returns accruing to stocks from the years 1963 through 1981. The results show that the mean return for stocks is positive only at the beginning of the month, starting on the last trading day of a month and continuing through the first eight trading days of the subsequent month. But the mean return for stocks is insignificantly different from zero in the second half of a month, i.e., nine days prior to the last trading day of a month. He also gave various explanations for this monthly effect such as the data-mining problem, a mismatch between calendar and trading time, biased data, a dividend effect, the January effect, and a small firm effect. He found that this monthly effect could not be explained by these explanations and seems to be caused by a shift in the mean of the distribution of returns from days in the first half of the month relative to days in the second half.

Jaffe and Westerfield (1989) studied the monthly effect in four countries, i.e., Japan, Canada, Australia, and the United Kingdom. They used the daily returns of these stock market indices. They found only weak evidence supporting this monthly effect in these four countries. They also noted that only Australia shows a significant or near significant effect in their study. Furthermore, there is evidence of a country unique monthly pattern in Japan. It indicates a significant reverse monthly effect in which the second-half mean return is greater than the first-half mean return. However, they found the results are more significant for a last-day-of-the-month effect than for a monthly effect.

Liano et al. (1992) examined the impact of economic cycles on the monthly effect in over-the-counter (OTC) stocks from 1973 to 1989. The results show that the pattern of the monthly effect varies with the index examined. They found that the monthly effect is limited to periods of economic expansion. The absence of a monthly effect during economic contractions suggests that the business cycles have an effect on the monthly effect in the OTC market.

Boudreaux (1995) investigated the monthly effect in seven countries' stock markets, namely Denmark, France, Germany, Norway, Singapore/Malaysia, Spain, and Switzerland from 1978 through 1992. The monthly effect was found in three of the seven countries' markets i.e., Denmark, Germany, and Norway stock markets. A significant inverted monthly effect was found in the Singapore/Malaysia market. They also determined that the monthly effect was still significant even with January observations removed. Thus, the

significant January effect was unable to explain the existence of monthly effect where they exist.

Wong (1995) studied the intra-month effect in the major developing stock markets of Singapore, Malaysia, Hong Kong, Taiwan, and Thailand. The Hang Seng Index (HIS) is used for Hong Kong, the Taiwan Stock Exchange Weighted Index (TWI) for Taiwan, Stock Exchange of Thailand Index (SET) for Thailand, The Kuala Lumpur Stock Exchange Industrial and Commercial Index (KLI&C) for Malaysia, and the Stock Exchange of Singapore All-Share Index (SES All-Share) for Singapore. The data is from January 1975 to December 1989 except those for Taiwan and Thailand. For Taiwan, the data is from January 1975 to September 1989 and for Thailand, from May 1975 to May 1988. Wong (1995) also found that the United States-type intra-month effect on stock returns is very weak and unstable over time in these five major developing markets.

Balaban and Bulu (1996) examined the semi-monthly effect in the Turkish stock markets. They use the daily returns of the Ystanbul Securities Exchange Composite Index (YSECI) from January 1988 to June 1995. YSECI is a weighted index using closing prices of stocks. The empirical results indicate that no semi-monthly effect exists in their study for that period. The individual years are examined separately in the study and they found that a significant semi-monthly effect exists only in 1994.

Cheung and Coutts (1999) employed a data set of logarithmic non-dividend adjusted daily returns from the Hong Kong Stock Exchange Hang Seng Index to investigate the presence of the monthly seasonalities. The data is from January 1985 through June 1997 and the data set is divided into two subsamples in order to test for the persistence of any monthly seasonalities. They found that there is no evidence of any other monthly seasonality and conclude that the results are peculiar to the Hang Seng Index. Finally, they fail to detect any other persistent monthly seasonality.

Coutts and Sheikh (2000) studied the existence of the monthly seasonality in the All Gold Index on the Johannesburg Stock Exchange. The data is from January 1987 through May 1997 and they also divided the data into three subperiods. They failed to provide evidence for the existence of the monthly seasonality in the All Gold Index on the Johannesburg Stock Exchange. When three subperiods are examined, they found that only two months in one of the subperiods have significant returns. This result is in extreme contrast to previous evidence documented for many other developed or emerging stock markets.

Mills et al. (2000) provided further evidence of the calendar effects in the emerging Athens Stock Exchange. The daily closing prices for the General Index of the Athens Stock Exchange are used in this study. The data cover the period from October 1986 to April 1997. They found significant evidence in favour of the monthly effect. The analysis also suggests that the intensity of calendar effects for various stocks depends upon beta coefficients and

company type. They also found that there is a weak negative relationship between calendar effect-intensity in stock returns and firms' capitalization.

2.3 Evidence on the Time-of-the-Month Effect

The study concentrates on the time-of-the-month effect, which has been less investigated compared to the other anomalies in the literature. Thus, there has been little published work on this effect in national and international literature.

Kohers and Patel (1999) investigated a new time-of-the-month effect in the daily returns of the Standard & Poor's Composite Index (from January 1960 through June 1995) and the National Association of Securities Dealers Automatic Quotation System (NASDAQ) Index (from January 1972 through June 1995). The time-of-the-month effect used in this study is based on the inclusion of the daily mean returns of all calendar days of a month. They split a month into three time segments and found that the returns were highest during the first third of a month, dropped during the second third of a month, and were lowest and in most cases negative during the last third of a month. This pattern is reflected in the two indices examined. They also introduced business cycles and many different subperiods to the analysis of the time-of-the-month effect. This new monthly effect displays a remarkable degree of robustness.